

# SMD COMMON MODE LINE FILTER

## CM02 SERIES



### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### COMMON APPLICATIONS:

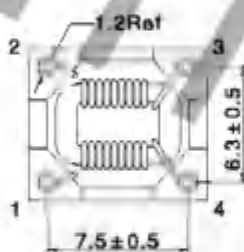
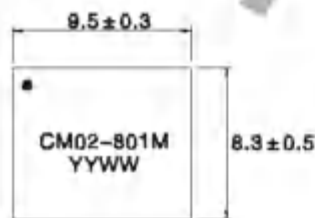
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems
- Computer Peripheral Equipment

### ELECTRICAL CHARACTERISTICS@25°C

| Part Number | Inductance (uH) Typ. | Impedance (Ω) ± 25% @ 100MHz | Rated current (A) | DCR (mΩ) Max |
|-------------|----------------------|------------------------------|-------------------|--------------|
| CM02-501M   | 5.0                  | 500                          | 5.0               | 5.5          |
| CM02-801M   | 9.0                  | 800                          | 3.5               | 13.2         |
| CM02-102M   | 11.0                 | 1000                         | 2.5               | 30.0         |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS

Dimensions(mm)



Note:

- Inductance Testing: 1KHz 1V HP4284A
- Z test with HP4191A or HP4395A
- RDC: QuadTech 1880 Milliohm meter
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C
- Resistance to soldering heat: 260°C for 10 seconds
- Marking: Part number and date code

Note: All specifications subject to change without notice.



## COMMON MODE CHOKES FOR LINE FILTER

# CM4001 SERIES

### FEATURES:

- Current rating up to 1.4A
- Inductance range: 120 to 5000uH
- Frequency range to 200 MHz
- RoHS compliant

### OPTIONS:

- Packaging: Tape & Reel is standard
- Bulk packaging available for smaller quantities

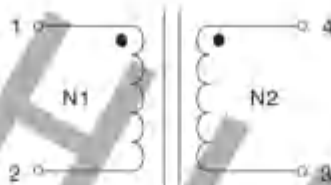
### COMMON APPLICATIONS:

- EMI suppression
- DC-DC Converter
- Input/Output line filter
- RFI noise suppression

### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>$\mu\text{H} \pm 40\%$ | Lk<br>$\mu\text{H}(\text{Max})$ | DCR( $\Omega$ )<br>each winding | Impedance(Z)         |                           | Rated voltage<br>(Vdc) | Rated current<br>(A) |
|-------------|---------------------------------|---------------------------------|---------------------------------|----------------------|---------------------------|------------------------|----------------------|
|             |                                 |                                 |                                 | Freq. range<br>(MHz) | Min Value<br>( $\Omega$ ) |                        |                      |
| CM4001-121Y | 120                             | 1.45                            | 0.025                           | 10-200               | 200                       | 50                     | 1.40                 |
| CM4001-251Y | 250                             | 3.2                             | 0.035                           | 5-100                | 400                       | 50                     | 1.19                 |
| CM4001-501Y | 500                             | 5.6                             | 0.070                           | 2-50                 | 800                       | 50                     | 0.84                 |
| CM4001-102Y | 1000                            | 12                              | 0.180                           | 1-40                 | 1400                      | 50                     | 0.82                 |
| CM4001-202Y | 2000                            | 0.23                            | 0.270                           | 0.5-15               | 2000                      | 50                     | 0.40                 |
| CM4001-302Y | 3000                            | 0.26                            | 0.330                           | 0.5-10               | 3000                      | 50                     | 0.35                 |
| CM4001-402Y | 4000                            | 0.27                            | 0.550                           | 0.5-5                | 4000                      | 50                     | 0.30                 |
| CM4001-472Y | 4700                            | 0.28                            | 1.080                           | 0.5-3                | 6200                      | 50                     | 0.25                 |
| CM4001-502Y | 5000                            | 0.29                            | 0.620                           | 0.5-3                | 5000                      | 50                     | 0.25                 |

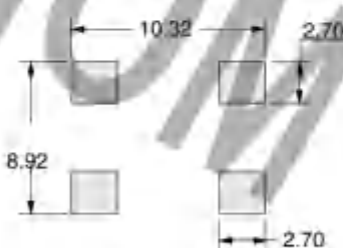
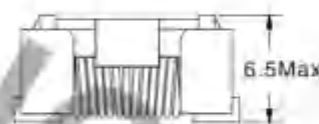
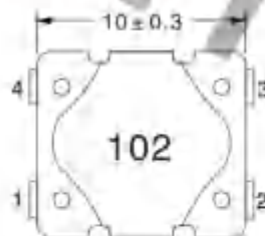
### SCHEMATIC



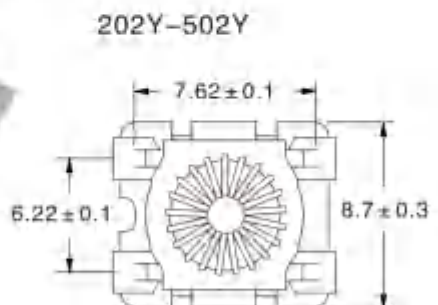
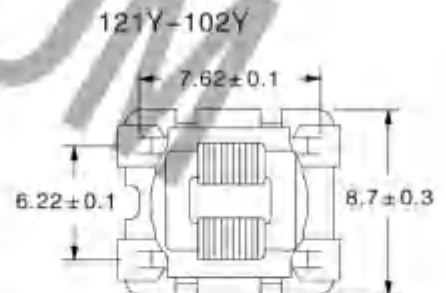
#### NOTES:

1. Temperature Rise: 45°C at rated current
2. Hi-Pot: 1000 Vrms, 60Hz, 3mA, 1min  
@ 120-1000uH  
300 Vrms, 60Hz, 3mA, 1min  
@ 2000-5000uH
3. Operating Temperature:  
-40°C to +105°C (Temperature rise included)
4. Storage Temperature:  
-40°C to +105°C  
Solderability: 245°C for 5 sec
5. Core Material: Ferrite
6. Base: Phenolic
7. Wire: Enameled copper
8. Terminal coating: Sn
9. Packaging: 800 pcs. per 13-inch reel

### PHYSICAL CHARACTERISTICS(Dimensions:mm)



Recommended Layout



Note: All specifications subject to change without notice.

# WIDEBAND RF TRANSFORMERS

## CM4006 SERIES



### FEATURES:

- LCP Base
- High Frequency Design
- Excellent Mechanical Strength
- Excellent Solderability
- High Reliability
- Low Profile

### COMMON APPLICATIONS:

- Dateline Noise Suppression
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems
- Computer Peripheral Equipment

### ELECTRICAL CHARACTERISTICS:

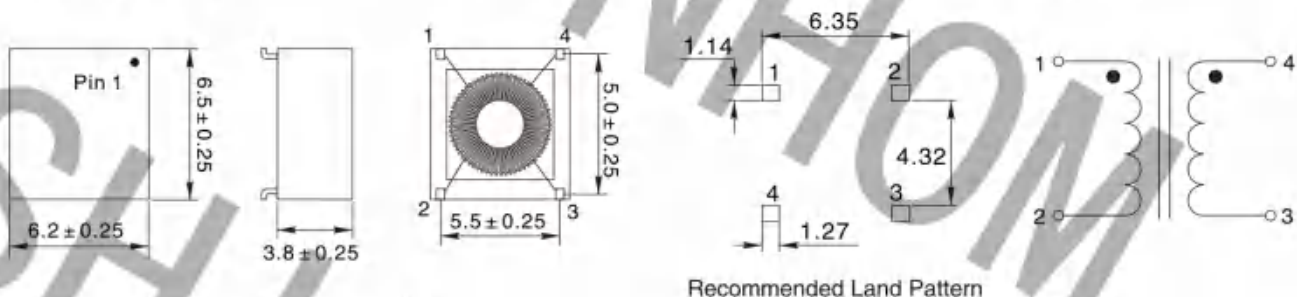
| Part Number | Impedance ratio pri:sec | Bandwidth MHz | Idc mA | Insertion loss max dB | L(1-2) min uH | Pins1-2 DCR max Ohms | L(4-3) min uH | Pins4-3 DCR max Ohms | Typical frequency response |               |             |
|-------------|-------------------------|---------------|--------|-----------------------|---------------|----------------------|---------------|----------------------|----------------------------|---------------|-------------|
|             |                         |               |        |                       |               |                      |               |                      | -3 dB                      | -2 dB         | -1 dB       |
| CM4006-01   | 1:1                     | 0.08-450      | 250    | 0.60                  | 40            | 0.070                | 40            | 0.070                | 0.08-450MHz                | 0.13-325MHz   | 0.30-190MHz |
| CM4006-02   | 1:1.5                   | 0.03-300      | 250    | 0.35                  | 110           | 0.080                | 160           | 0.110                | 0.03-300MHz                | 0.035-250MHz  | 0.05-150MHz |
| CM4006-03   | 1:2                     | 0.05-200      | 250    | 0.25                  | 75            | 0.088                | 150           | 0.120                | 0.05-200MHz                | 0.06-160MHz   | 0.10-100MHz |
| CM4006-04   | 1:4                     | 0.15-500      | 250    | 0.50                  | 25            | 0.075                | 98            | 0.135                | 0.15-500MHz                | 0.24-300MHz   | 0.60-140MHz |
| CM4006-05   | 1:16                    | 0.05-80       | 250    | 0.35                  | 75            | 0.260                | 1250          | 0.910                | 0.05-80MHz                 | 0.06-75MHz    | 0.11-30MHz  |
| CM4006-06   | 1:1                     | 0.0035-125    | 250    | 0.20                  | 780           | 0.320                | 780           | 0.320                | 0.0035-125MHz              | 0.0045-100MHz | 0.007-60MHz |
| CM4006-07   | 1:1                     | 0.03-250      | 250    | 0.20                  | 95            | 0.200                | 95            | 0.200                | 0.03-250MHz                | 0.04-225MHz   | 0.05-200MHz |
| CM4006-08   | 1:1.5                   | 0.07-225      | 250    | 0.40                  | 51            | 0.190                | 80            | 0.145                | 0.07-225MHz                | 0.10-200MHz   | 0.20-125MHz |
| CM4006-09   | 1:4                     | 0.15-400      | 250    | 0.40                  | 25            | 0.115                | 95            | 0.160                | 0.15-400MHz                | 0.25-350MHz   | 0.80-250MHz |

Note:1. K= ± 10%,M= ± 20%,N= ± 30%

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:

DIMENSIONS IN:mm

WINDING:



- Tapped and untapped versions
- 400V interwinding isolation, 1/4 Watt Therefore input power
- 250mA max current rating
- Core material Ferrite
- Terminations RoHS compliant tin-silver-copper over silver-platinum-glass frit. Other terminations available at additional cost.
- Weight 0.37-0.43g
- Ambient temperature  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .
- Packaging  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ .
- Resistance to soldering heat Max three 40 second reflows at  $+260^{\circ}\text{C}$ , parts cooled to room temperature between cycles
- Moisture Sensitivity Level (MSL) 1 (unlimited floor life at  $<30^{\circ}\text{C}/85\%$  relative humidity)
- Mean Time Between Failures (MTBF) 16,666,667 hours
- Packaging 1000 per 13" reel; Plastic tape: 16mm wide, 0.34mm thick, 12mm pocket spacing, 4.83mm pocket depth
- PCB washing Only pure water or alcohol recommended

Note: All specifications subject to change without notice.



## CMD COMMON MODE CHOKE CM0705 SERIES



### FEATURES:

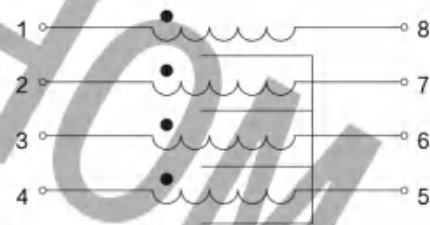
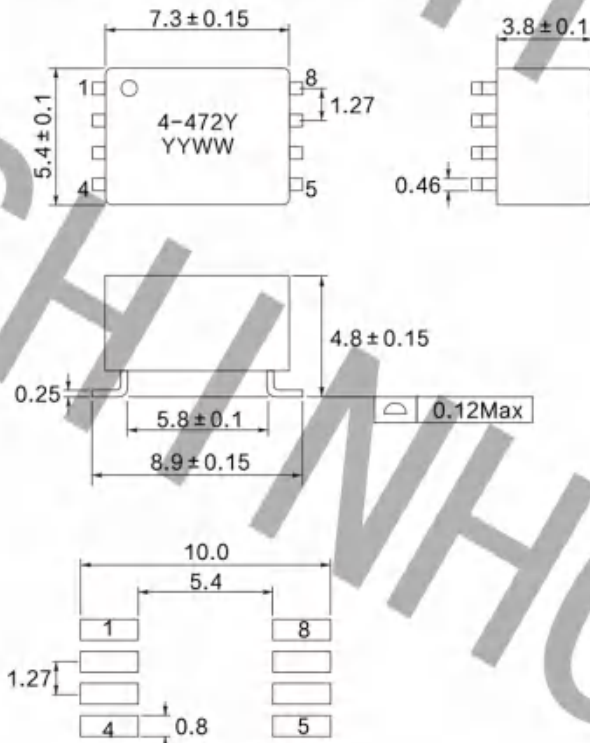
- Miniature, low cost SMD for pick and place compatability while providing consistent and reliable coplanarity
- High attenuation over a wide frequency range
- Other inductance values available
- Test voltage between windings: 500Vrms

### ELECTRICAL CHARACTERISTICS@25°C

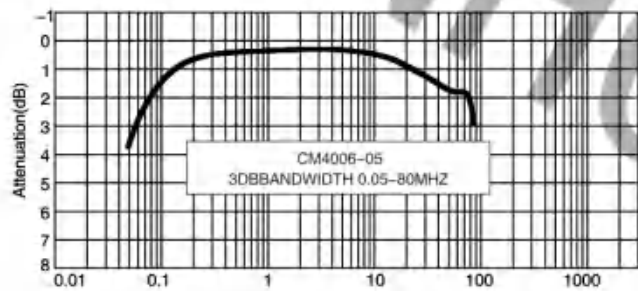
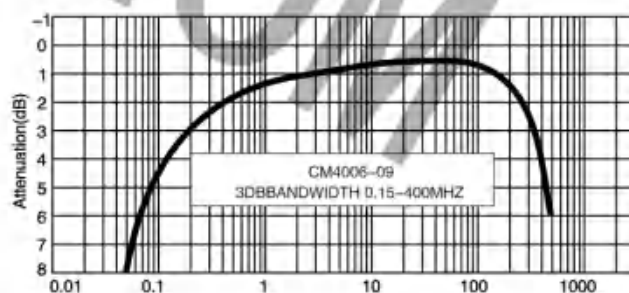
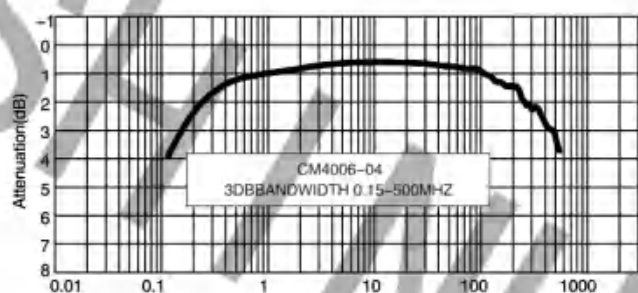
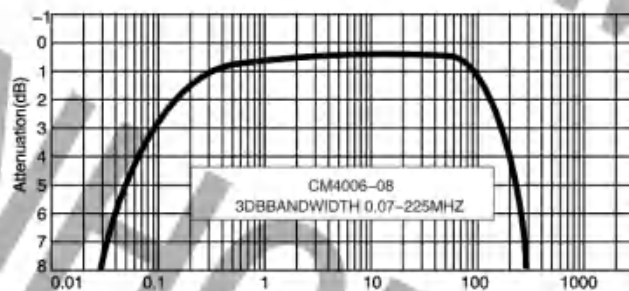
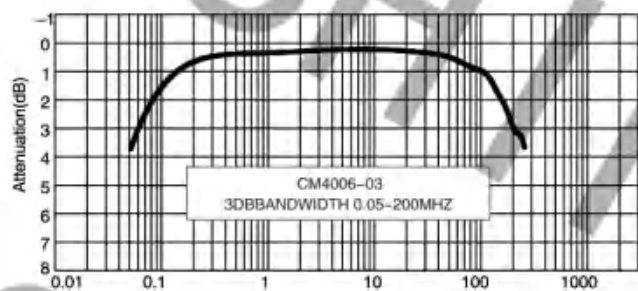
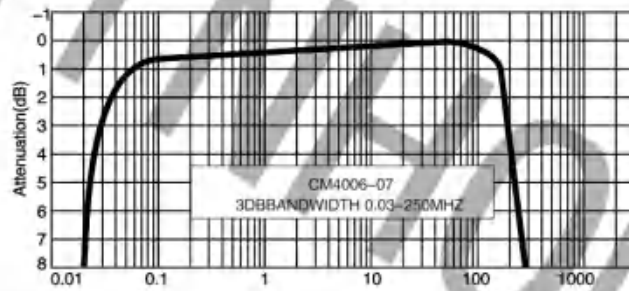
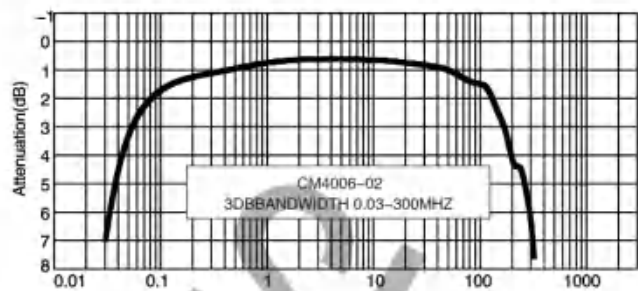
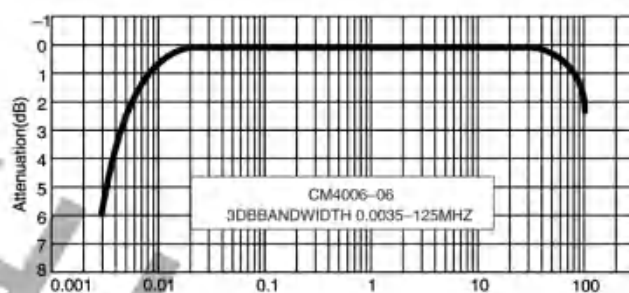
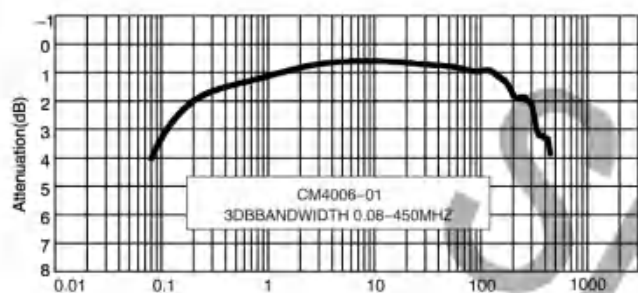
| Part Number   | Inductance (uH)<br>+50%/-30% | Lk (uH)<br>typ. | Rated Current (mA)Max | DCR (mΩ)Max | Test voltage (Vrms)<br>line to line |
|---------------|------------------------------|-----------------|-----------------------|-------------|-------------------------------------|
| CM0705-4-470Y | 47                           | 0.25            | 500                   | 180         | 500                                 |
| CM0705-4-101Y | 100                          | 0.30            | 500                   | 330         | 500                                 |
| CM0705-4-471Y | 470                          | 0.25            | 500                   | 200         | 500                                 |
| CM0705-4-102Y | 1000                         | 0.35            | 500                   | 310         | 500                                 |
| CM0705-4-222Y | 2200                         | 0.50            | 400                   | 570         | 500                                 |
| CM0705-4-472Y | 4700                         | 0.70            | 200                   | 860         | 500                                 |
| CM0705-4-103Y | 10000                        | 0.50            | 110                   | 1700        | 500                                 |
| CM0705-4-123Y | 12000                        | 0.50            | 100                   | 1800        | 500                                 |

### PHYSICAL CHARACTERISTICS

### IMPEDANCE VS FREQUENCY



- Inductance Testing: 100KHz, 20mV
  - Operating Temperature: -25°C to +105°C
  - Storage Temperature: -25°C to +105°C
- Note: All specifications subject to change without notice.





## EMI LINE FILTER SF0503 SERIES

### FEATURES:

- Rated Current 100mA
- Inductance range: 11 to 100uH
- RoHS compliant

### OPTIONS:

- Packaging: Tape & Reel is standard
- Bulk packaging available for smaller quantities

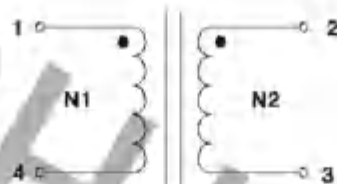
### COMMON APPLICATIONS:

- DC-DC Conversion
- Isolation /Coupling
- Input filter
- Against CMC noise at composite
- EMI suppression

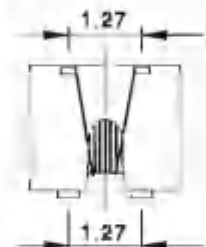
### ELECTRICAL CHARACTERISTICS:@25°C

| Part Number | L(0A)<br>(uH)+50%/-30%<br>10KHz,0.1V | Frequency<br>Range(MHz) | Impedance<br>Z(Ω)Min | DCR(mΩ)Max<br>each winding | Rated<br>current<br>(mA) |
|-------------|--------------------------------------|-------------------------|----------------------|----------------------------|--------------------------|
| SF0503-110Y | 11                                   | 100-400                 | 450                  | 180                        | 100                      |
| SF0503-220Y | 22                                   | 40-250                  | 900                  | 230                        | 100                      |
| SF0503-330Y | 33                                   | 30-180                  | 1000                 | 270                        | 100                      |
| SF0503-500Y | 50                                   | 20-80                   | 1200                 | 320                        | 100                      |
| SF0503-101Y | 100                                  | 10-50                   | 1400                 | 450                        | 100                      |

### SCHEMATIC

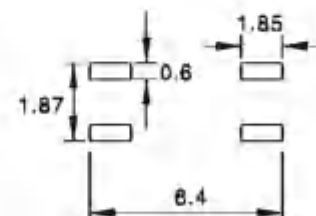
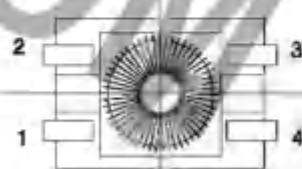


### PHYSICAL CHARACTERISTICS



#### NOTES:

1. Temperature Rise: 20°C at rated current
2. Rated Voltage: 50 Vdc  
Dielectric Withstanding Voltage: 125 Vdc
3. Operating Temperature:  
-40°C to +125°C(Temperature rise included)
4. Storage Temperature:  
-40°C to +125°C  
Solderability: 245°C for 5 sec
5. Core Material .....Ferrita
6. Wire .....Enameled copper
7. Terminal coating .....Sn
8. Packaging.....1000 pcs. per 13-inch reel



Note:All specifications subject to change without notice.



## SMD WIRE WOUND COMMON MODE FILTER

### SF0504 SERIES

#### FEATURES:

- High common mode impedance at high frequency effects excellent noise suppression performance.

#### APPLICATIONS:

- Common mode noise suppression of signal lines in high speed and high density digital equipment such as personal computers and peripherals.

#### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance ( $\Omega$ ) $\pm 25\%$ | Test frequency (MHz) | DCR ( $\Omega$ ) Max | Rated Current (mA) Max | Rated Voltage (V) | Insulation resistance (Min) |
|-------------|-----------------------------------|----------------------|----------------------|------------------------|-------------------|-----------------------------|
| SF0504-250  | 25                                | 100                  | 0.3                  | 300                    | 20                | 10M $\Omega$                |
| SF0504-600  | 60                                | 100                  | 0.4                  | 300                    | 20                | 10M $\Omega$                |
| SF0504-670  | 67                                | 100                  | 0.4                  | 300                    | 20                | 10M $\Omega$                |
| SF0504-900  | 90                                | 100                  | 0.5                  | 280                    | 20                | 10M $\Omega$                |
| SF0504-121  | 120                               | 100                  | 0.55                 | 270                    | 20                | 10M $\Omega$                |
| SF0504-161  | 160                               | 100                  | 0.58                 | 260                    | 20                | 10M $\Omega$                |
| SF0504-181  | 180                               | 100                  | 0.6                  | 260                    | 20                | 10M $\Omega$                |
| SF0504-251  | 250                               | 100                  | 0.7                  | 230                    | 20                | 10M $\Omega$                |
| SF0504-331  | 330                               | 100                  | 0.8                  | 200                    | 20                | 10M $\Omega$                |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



- Inductance Testing: 100MHz E4991A
- RDC: QuadTech 1880 Milliohm meter
- Operating temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Storage Temperature:  $40^{\circ}\text{C}$  Max, 70% RH Max
- Resistance to soldering heat:  $260^{\circ}\text{C}$  for 10 seconds
- Marking: Part number

Note: All specifications subject to change without notice.

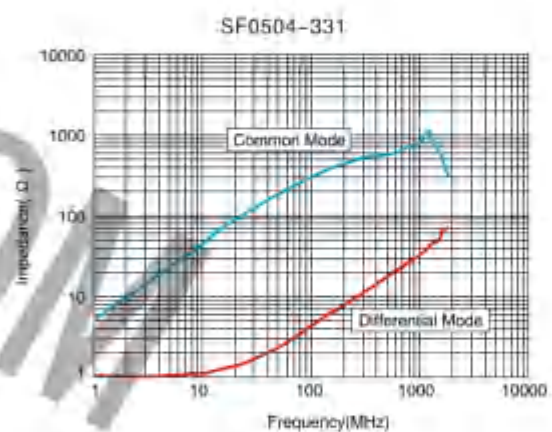
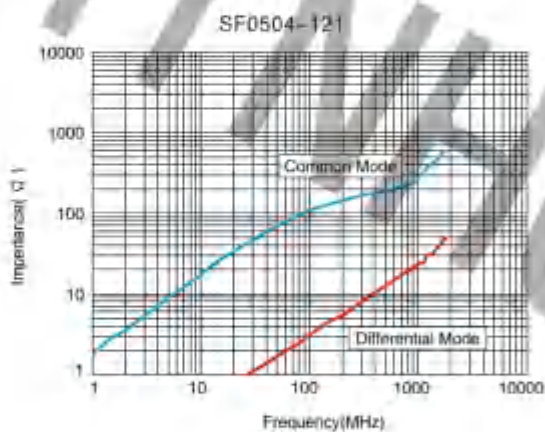
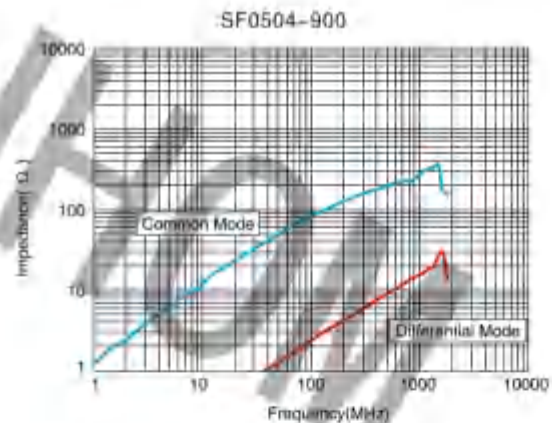
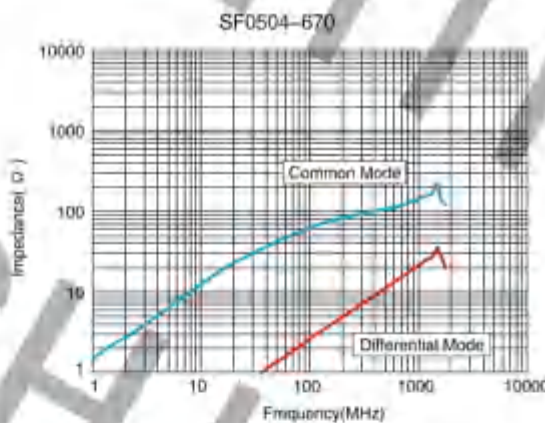
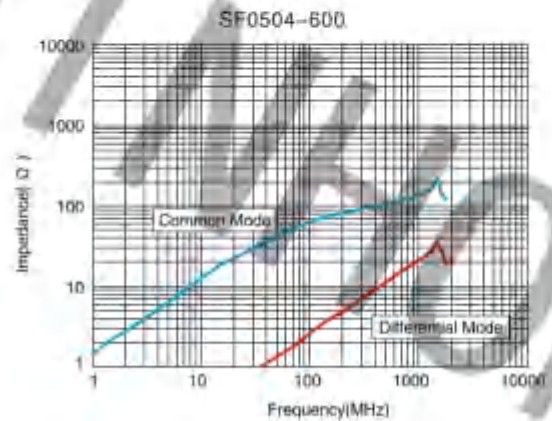
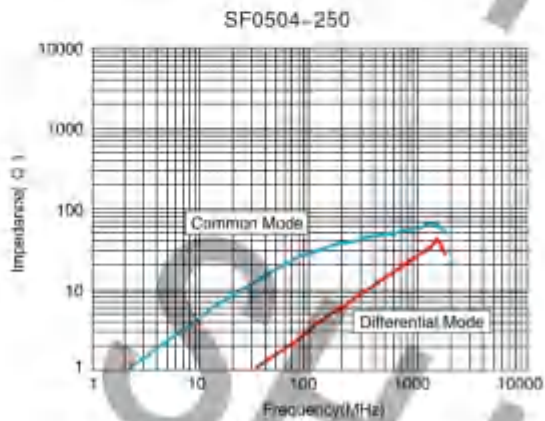




## SMD WIRE WOUND COMMON MODE FILTER

### SF0504 SERIES

#### IMPEDANCE FREQUENCY:







# LINE FILTER SF0602 SERIES

## FEATURES:

- Current rating up to 300mA
- Inductance range: 10 to 330uH
- Frequency range to 1000 MHz
- RoHS compliant

## OPTIONS:

- Packaging: Tape & Reel is standard
- Bulk packaging available for smaller quantities

## COMMON APPLICATIONS:

- DC-DC Conversion
- Isolation /Coupling
- Input filter
- Against CMC noise at computer
- EMI suppression

## ELECTRICAL CHARACTERISTICS:@25°C

| Part Number | L<br>(uH)<br>10KHz,2mV | Lk<br>(uH) Max<br>10KHz,2mV | DCR(mΩ)Max<br>each winding | Rated<br>current<br>(mA) | Impedance(Z)             |                  |
|-------------|------------------------|-----------------------------|----------------------------|--------------------------|--------------------------|------------------|
|             |                        |                             |                            |                          | Frequency<br>Range (MHz) | Min value<br>(Ω) |
| SF0602-100Y | 10 ± 50%               | 1                           | 240                        | 300                      | 35-570                   | 600              |
| SF0602-470Y | 47 ± 50%               | 4                           | 180                        | 300                      | 4-1800                   | 140              |
| SF0602-820Y | 82 ± 50%               | 4                           | 200                        | 300                      | 3-850                    | 220              |
| SF0602-101Y | 100 ± 50%              | 8                           | 220                        | 300                      | 3-880                    | 250              |
| SF0602-181Y | 180 ± 50%              | 8                           | 250                        | 300                      | 3-250                    | 500              |
| SF0602-221Y | 220 ± 50%              | 10                          | 280                        | 300                      | 3-210                    | 600              |
| SF0602-331Y | 330 ± 50%              | 10                          | 300                        | 300                      | 3-120                    | 900              |

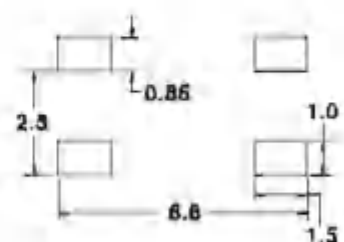
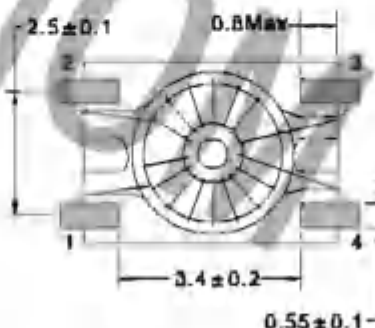
## SCHEMATIC



### NOTES:

1. Temperature Rise: 20°C at rated current
2. Rated Voltage: 50 Vdc  
Dielectric Withstanding Voltage: 125 Vdc
3. Operating Temperature:  
-40°C to +105°C(Temperature rise included)
4. Storage Temperature:  
-40°C to +105°C  
Solderability: 260°C for 5 sec
5. Core Material.....Ferrite
6. Wire.....Enamelled copper
7. Terminal coating.....Sn
8. Base.....LCP
9. Packaging.....1000 pcs. per 7-inch reel

## PHYSICAL CHARACTERISTICS



Note: All specifications subject to change without notice.



**SMD WIRE WOUND COMMON MODE FILTER**  
**SF0805 SERIES**

### FEATURES:

- High common mode impedance at high frequency effects excellent noise suppression performance.

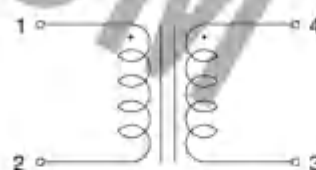
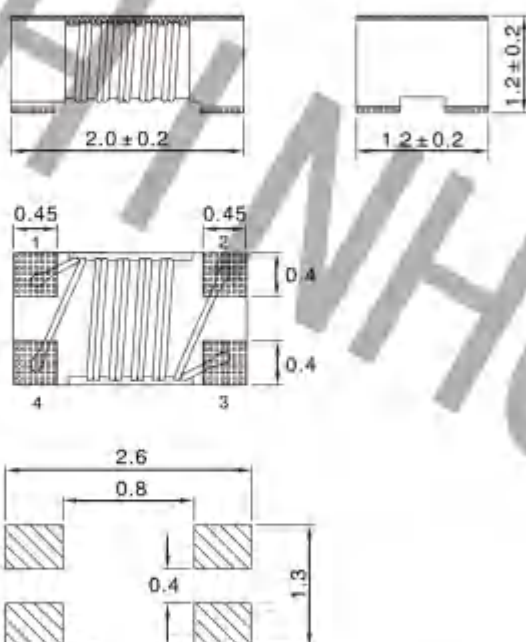
**APPLICATIONS:**

- Common mode noise suppression of signal lines in high speed and high density digital equipment such as personal computers and peripherals.

### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance<br>( $\Omega$ ) $\pm 25\%$ | Test frequency<br>(MHz) | DCR<br>( $\Omega$ )<br>Max | Rated Current<br>(mA)<br>Max | Rated Voltage<br>(V) | Insulation<br>resistance<br>(Min) |
|-------------|--------------------------------------|-------------------------|----------------------------|------------------------------|----------------------|-----------------------------------|
| SF0805-240  | 24                                   | 100                     | 0.25                       | 420                          | 50                   | 10M $\Omega$                      |
| SF0805-250  | 25                                   | 100                     | 0.25                       | 420                          | 50                   | 10M $\Omega$                      |
| SF0805-320  | 32                                   | 100                     | 0.25                       | 400                          | 50                   | 10M $\Omega$                      |
| SF0805-600  | 60                                   | 100                     | 0.30                       | 300                          | 50                   | 10M $\Omega$                      |
| SF0805-670  | 67                                   | 100                     | 0.30                       | 400                          | 50                   | 10M $\Omega$                      |
| SF0805-900  | 90                                   | 100                     | 0.30                       | 400                          | 50                   | 10M $\Omega$                      |
| SF0805-121  | 120                                  | 100                     | 0.30                       | 350                          | 50                   | 10M $\Omega$                      |
| SF0805-161  | 160                                  | 100                     | 0.30                       | 350                          | 50                   | 10M $\Omega$                      |
| SF0805-181  | 180                                  | 100                     | 0.35                       | 330                          | 50                   | 10M $\Omega$                      |
| SF0805-221  | 220                                  | 100                     | 0.35                       | 330                          | 50                   | 10M $\Omega$                      |
| SF0805-261  | 260                                  | 100                     | 0.40                       | 300                          | 50                   | 10M $\Omega$                      |
| SF0805-361  | 360                                  | 100                     | 0.40                       | 280                          | 50                   | 10M $\Omega$                      |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



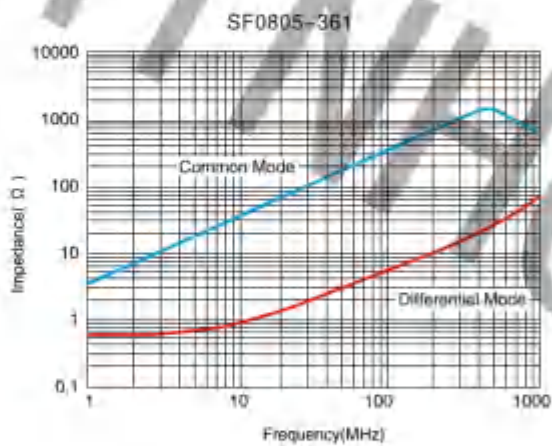
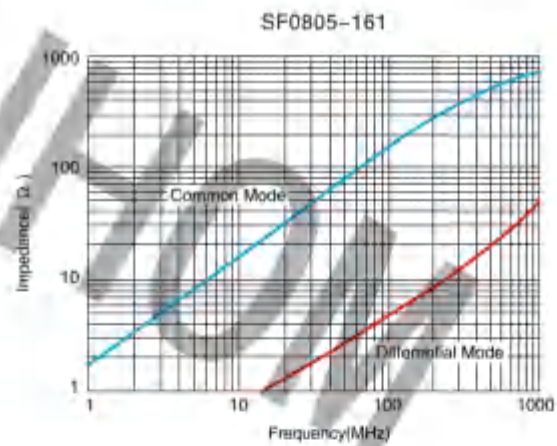
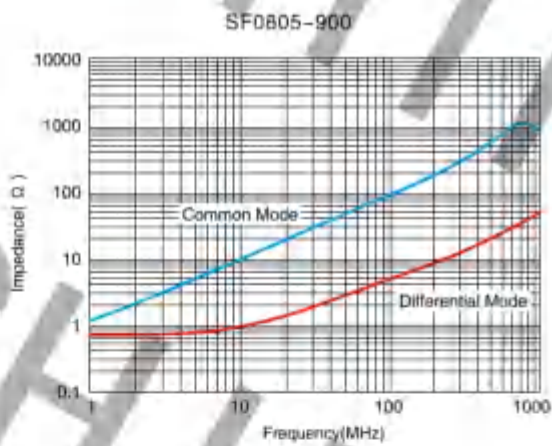
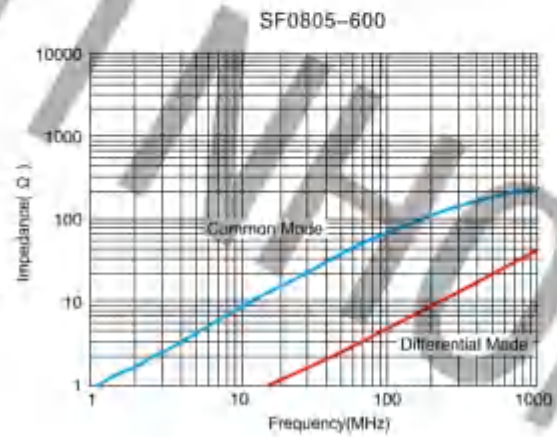
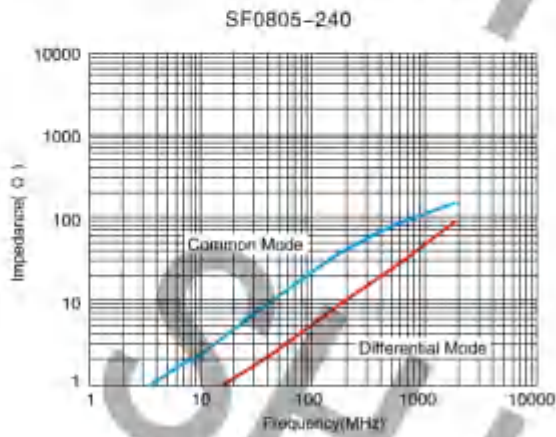
- Impedance Testing: 100MHz E4991A
- RDC: QuadTech 1880 Milliohm meter
- Operating temperature: -40°C to +85°C
- Storage Temperature: 40°CMax, 70%RH Max
- Resistance to soldering heat: 260°C for 10 seconds
- Marking: Part number

Note: All specifications subject to change without notice.

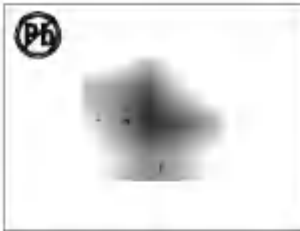


## SMD WIRE WOUND COMMON MODE FILTER SF0805 SERIES

### IMPEDANCE FREQUENCY:







## SMD LINE FILTER SF0903 SERIES

### FEATURES:

- Low profile very effective in space conscious applications
- Low resistance filters have been designed for excellent electrical isolation
- High quality toroidal core
- Wide frequency range over 1000MHz
- Lead free construction

### OPTIONS:

- Tape & Reel is Standard
- Bulk packaging Available for Smaller Quantities

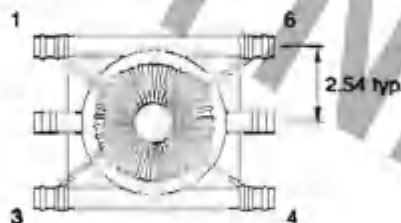
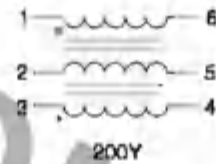
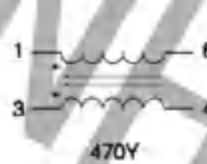
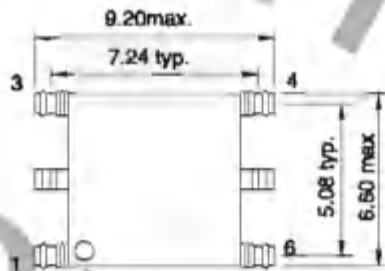
### COMMON APPLICATIONS:

- Provide common mode noise attenuation
- Reduce conducted noise
- For the suppression of EMI in data lines and signal lines, e.g., CAN Bus

### ELECTRICAL CHARACTERISTICS:

| Part Number | L( $\mu$ H)<br>100K/0.1V | L-L( $\mu$ H)<br>100K/0.02V | C(pF)<br>100K/0.02V | DCR( $\Omega$ )<br>max. | Turns Ratio | Insertion Loss |                  | Impedance(Z) |                 |
|-------------|--------------------------|-----------------------------|---------------------|-------------------------|-------------|----------------|------------------|--------------|-----------------|
|             |                          |                             |                     |                         |             | Freq.range     | db               | Freq.range   | min( $\Omega$ ) |
| 470YAB      | 47.0 min.                | 0.18 <sup>nd</sup>          | 20 <sup>nd</sup>    | 0.4                     | 1:1         | 1~100MHz       | 20 <sup>nd</sup> | 10~30MHz     | 1000            |
| 200YAB      | 20.0 min.                | 0.10 <sup>nd</sup>          | 16 <sup>nd</sup>    | 0.4                     | 1:1:1       | 30~300MHz      | 20 <sup>nd</sup> | 30~100MHz    | 800             |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



PCB layout

#### General Specification:

1. Storage Temperature:  $-40^{\circ}\text{C} - +105^{\circ}\text{C}$
2. Operation Temperature:  $-25^{\circ}\text{C} - +85^{\circ}\text{C}$
3. Temperature Rise Included:  $30^{\circ}\text{C}$  max at Rated Current
4. Resistance to solder heat:  $260^{\circ}\text{C}$ , 10 secs.



## SMD LINE FILTER SF0904 SERIES

### FEATURES:

- Low profile very effective in space conscious applications
- Low resistance filters have been designed for excellent electrical isolation
- High quality toroidal core
- Lead free construction
- RoHS-compatible

### OPTIONS:

- Tape & Reel is Standard
- Bulk packaging Available for Smaller Quantities

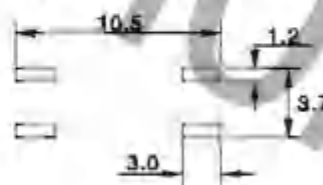
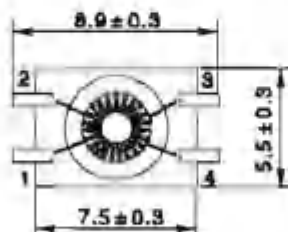
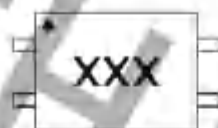
### COMMON APPLICATIONS:

- Provide common mode noise attenuation
- Reduce conducted noise
- For the suppression of EMI in data lines and signal lines, e.g., CAN Bus

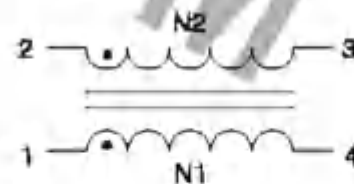
### ELECTRICAL CHARACTERISTICS:

| Part Number | $L(1-4)(\mu H)$<br>$\leq 1mH @ 100kHz$<br>$> 1mH @ 10kHz$<br>$+50\%/-30\%$ | $LK(1-4)(mH)$<br>$\leq 11\mu H @ 1MHz$<br>$> 11\mu H @ 100kHz$<br>(2-3 short) max. | DCR<br>(winding)<br>(mΩ) max. | Rated Current<br>(mA) max. | Hi-Pot<br>Vdc,2S |
|-------------|----------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------|----------------------------|------------------|
| SF0904-110Y | 11.0                                                                       | 50                                                                                 | 80                            | 500                        | 250              |
| SF0904-250Y | 25.0                                                                       | 80                                                                                 | 110                           | 500                        | 250              |
| SF0904-510Y | 51.0                                                                       | 70                                                                                 | 140                           | 500                        | 250              |
| SF0904-471Y | 470                                                                        | 100                                                                                | 170                           | 500                        | 250              |
| SF0904-102Y | 1000                                                                       | 100                                                                                | 170                           | 500                        | 250              |
| SF0904-222Y | 2200                                                                       | 200                                                                                | 400                           | 400                        | 250              |
| SF0904-472Y | 4700                                                                       | 300                                                                                | 510                           | 200                        | 250              |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



Suggest PCB Layout



#### Materials:

1. Core: Ferrite Toroidal Core
2. Wire: Enamelled Copper Wire (Class F)
3. Case: PPHS (ULB40V-0)
4. Terminal: Cu / Ni / Sn
5. Adhesive: Epoxy Resin

#### General Specification:

1. Storage Temperature:  $-40^{\circ}C$  ~  $+125^{\circ}C$
2. Operation Temperature:  $-40^{\circ}C$  ~  $+85^{\circ}C$
3. Temperature Rise Included:  $40^{\circ}C$  max at Rated Current
4. Resistance to solder heat:  $280^{\circ}C$ , 10 secs.

#### Notes:

All specifications subject to change without notice.

# COMMON MODE CHOKE

## SF0904A SERIES

### FEATURES:

- The circular type, small size and low profile.
- Suppression of common mode noise at high frequency.
- Excellent mechanical.
- AEC-Q200 verified.
- Operating temperature: -50°C to +150°C

### APPLICATIONS:

- Data and signal line

### OPTIONS:

- Tape & Reel is Standard

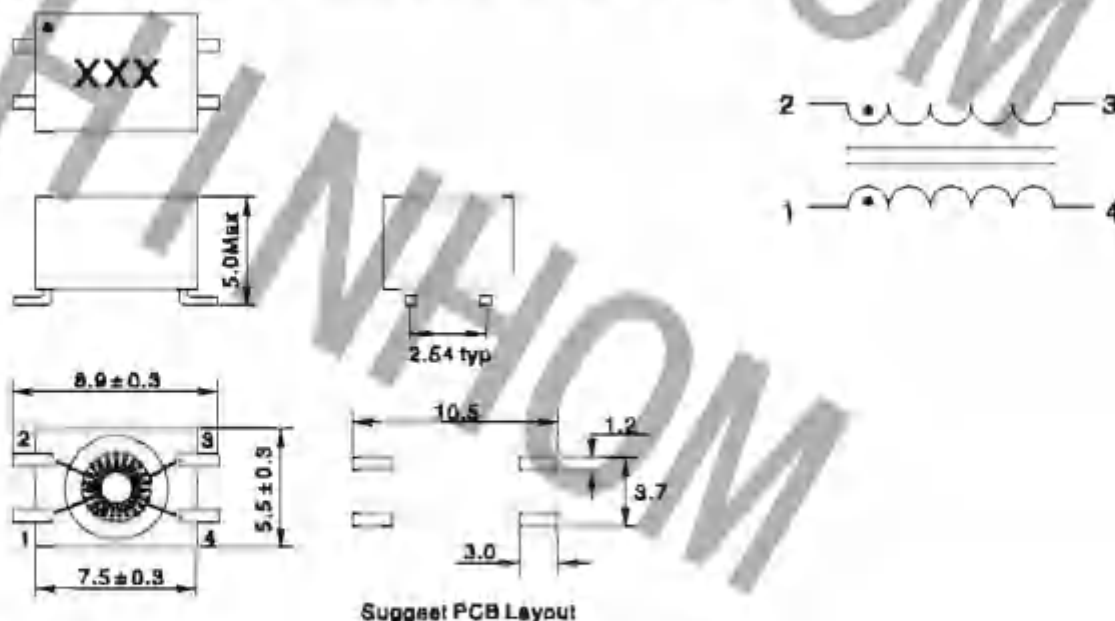


### ELECTRICAL CHARACTERISTICS:

| Part Number   | Inductance (uH) | LK(nH) Typ.   | DCR (Ω) max. | Rated Current (mA) max. | Vtest (Vdc25) | Operating temperature range(°C) |
|---------------|-----------------|---------------|--------------|-------------------------|---------------|---------------------------------|
| SF0904A-5R0N  | 5 ± 30%         | 40 @ 1MHz     | 0.06         | 1200                    | 250           | -50 ~ +150                      |
| SF0904A-110N  | 11 ± 30%        | 50 @ 1MHz     | 0.08         | 800                     | 250           | -50 ~ +150                      |
| SF0904A-250N  | 25 ± 30%        | 80 @ 100KHz   | 0.11         | 600                     | 250           | -50 ~ +150                      |
| SF0904A-250N9 | 25 ± 30%        | 1400 @ 100KHz | 0.11         | 800                     | 250           | -50 ~ +150                      |
| SF0904A-510N  | 51 ± 30%        | 70 @ 100KHz   | 0.14         | 500                     | 250           | -50 ~ +150                      |
| SF0904A-510N8 | 51 ± 30%        | 2300 @ 100KHz | 0.14         | 800                     | 250           | -50 ~ +150                      |
| SF0904A-101N  | 100 ± 30%       | 100 @ 100KHz  | 0.18         | 500                     | 250           | -50 ~ +150                      |
| SF0904A-471N  | 470 ± 30%       | 100 @ 100KHz  | 0.17         | 700                     | 750           | -40 ~ +125                      |
| SF0904A-102Y  | 1000 +50%/-30%  | 70 @ 100KHz   | 0.14         | 700                     | 750           | -40 ~ +125                      |
| SF0904A-222Y  | 2200 +50%/-30%  | 120 @ 100KHz  | 0.4          | 500                     | 750           | -40 ~ +125                      |
| SF0904A-472Y  | 4700 +50%/-30%  | 250 @ 100KHz  | 0.55         | 400                     | 750           | -40 ~ +125                      |

1. Inductance test frequency: ≤ 1000uH, 100KHz, 0.1V  
> 1000uH, 10KHz, 0.1V
2. Storage Temperature Range (packaging condition): -10°C ~ +40°C and RH 70% (Max.)
3. Rated Voltage: 42VAC (50/60Hz) / 80VDC
4. Products with other electrical characteristics can be provided upon customer's request.

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:

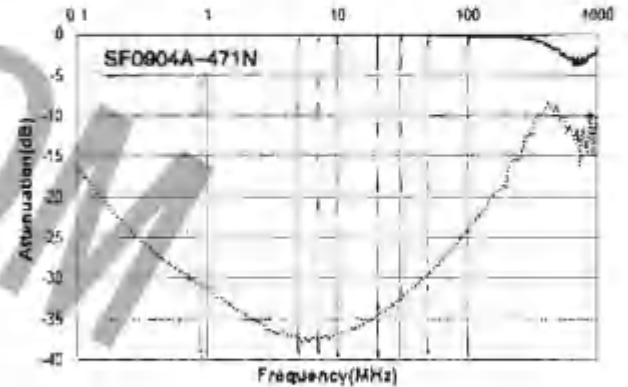
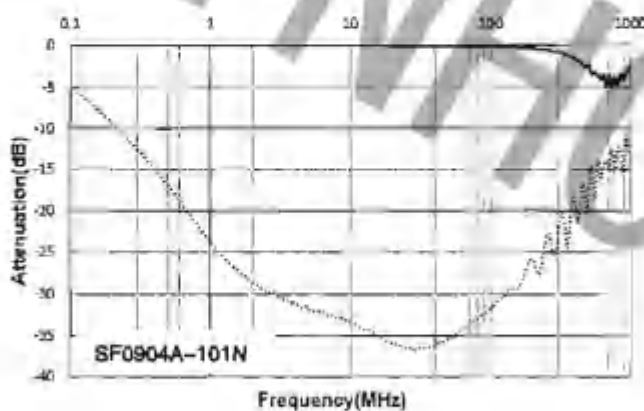
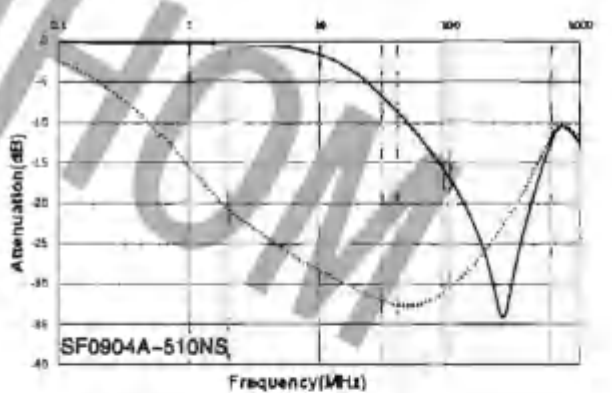
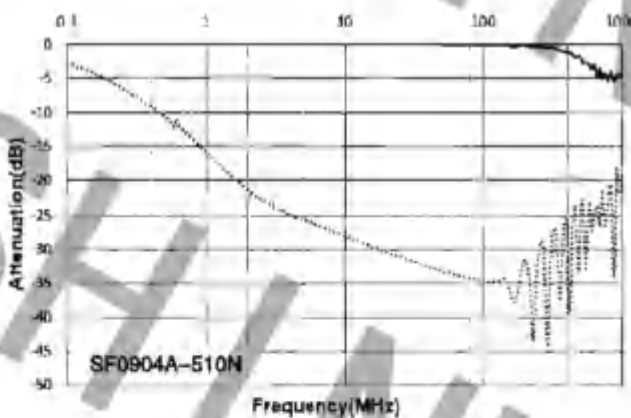
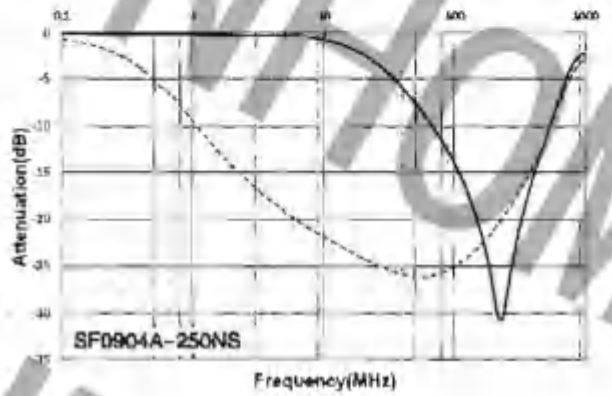
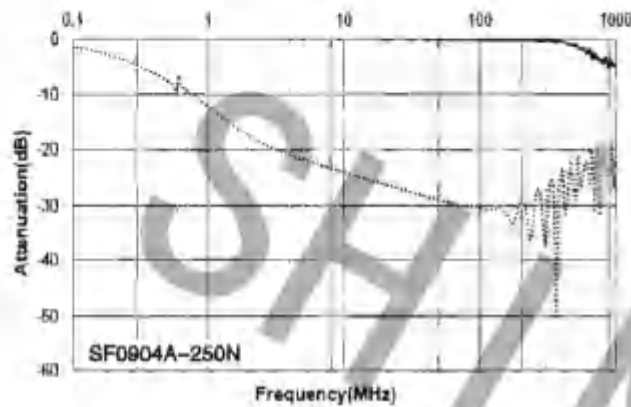
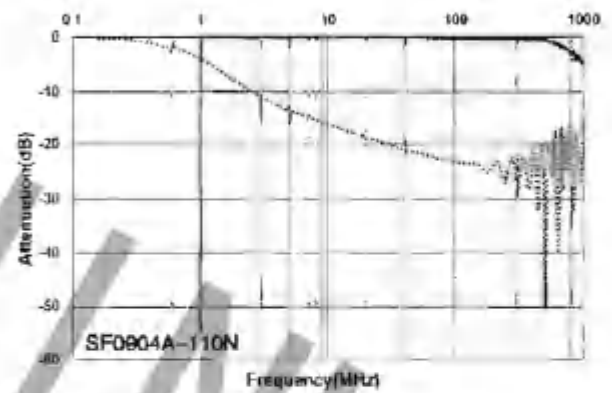
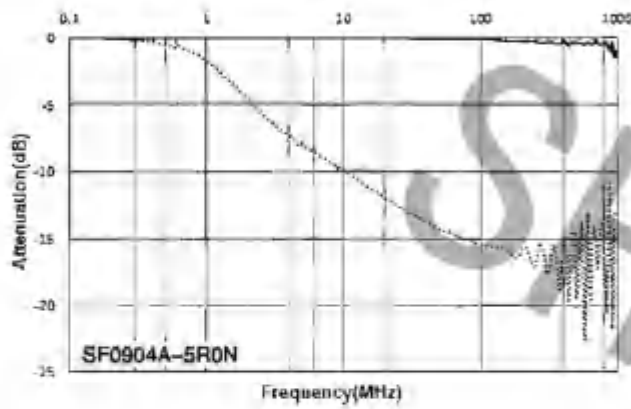


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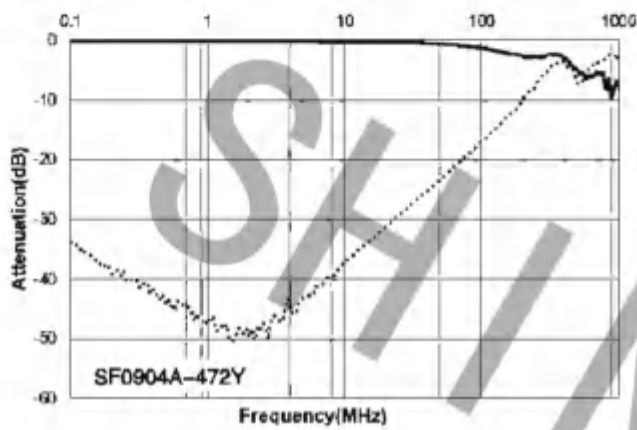
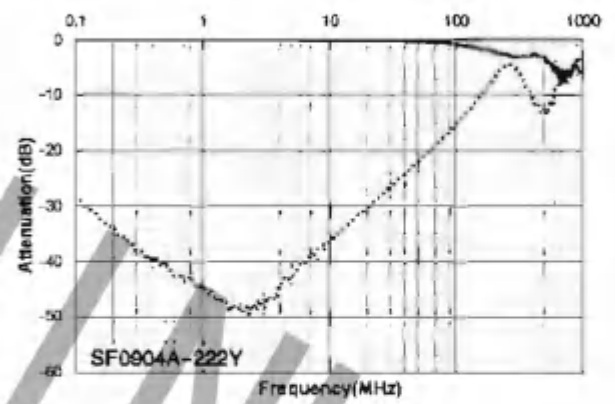
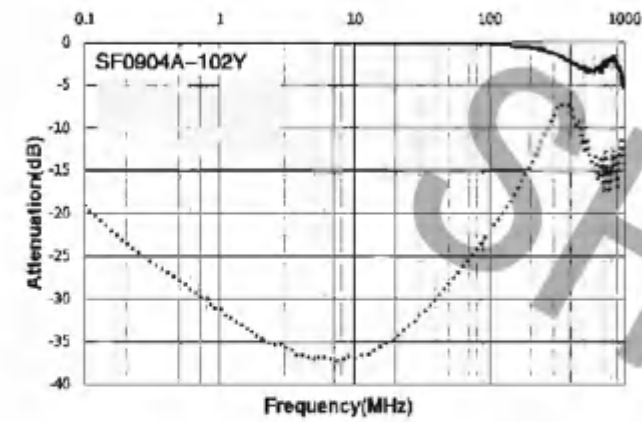
All specifications subject to change without notice.



## TYPICAL ELECTRICAL CHARACTERISTICS



## TYPICAL ELECTRICAL CHARACTERISTICS





## LINE FILTER

## SF0905 SERIES

### FEATURES:

- Current rating up to 1.8A
- Inductance range: 10 to 8500uH
- Frequency range to 300 MHz
- RoHS compliant

### OPTIONS:

- Packaging: Tape & Reel is standard
- Bulk packaging available for smaller quantities

### COMMON APPLICATIONS:

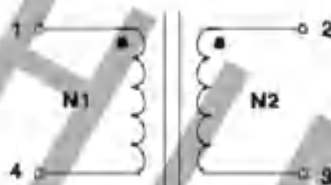
- DC-DC Conversion
- Isolation /Coupling
- Input filter
- Against EMC noise at composite
- EMI suppression

### ELECTRICAL CHARACTERISTICS:@25°C

| Part Number | L (uH)     | Lk (nH) typ @1MHz | DCR(mΩ)Max each winding | Rated current (A) | Impedance(Z)          |               |
|-------------|------------|-------------------|-------------------------|-------------------|-----------------------|---------------|
|             |            |                   |                         |                   | Frequency Range (MHz) | Min value (Ω) |
| SF0905-100Y | 10 ± 50%   | 850               | 80                      | 1.8               | 20-300                | 200           |
| SF0905-250Y | 25 ± 50%   | 1942              | 160                     | 1.0               | 20-160                | 800           |
| SF0905-400Y | 40 ± 50%   | 2812              | 250                     | 0.8               | 20-100                | 800           |
| SF0905-500Y | 50 ± 50%   | 3150              | 320                     | 0.8               | 20-100                | 1500          |
| SF0905-251Y | 250 ± 50%  | 110               | 130                     | 1.2               | 3-20                  | 800           |
| SF0905-471Y | 470 ± 50%  | 120               | 140                     | 1.1               | 3-20                  | 1000          |
| SF0905-501Y | 500 ± 50%  | 120               | 150                     | 1.0               | 1-20                  | 1000          |
| SF0905-102Y | 1000 ± 50% | 170               | 310                     | 0.8               | 1-15                  | 1500          |
| SF0905-202Y | 2000 ± 50% | 250               | 420                     | 0.6               | 1-5                   | 3000          |
| SF0905-472Y | 4700 ± 50% | 380               | 900                     | 0.4               | 0.3-3                 | 4000          |
| SF0905-852Y | 8500 ± 50% | 390               | 1050                    | 0.3               | 0.3-2                 | 5000          |

Test condition: 10-50uH: 1KHz,0.1V; 250-8500uH: 100KHz,5mV

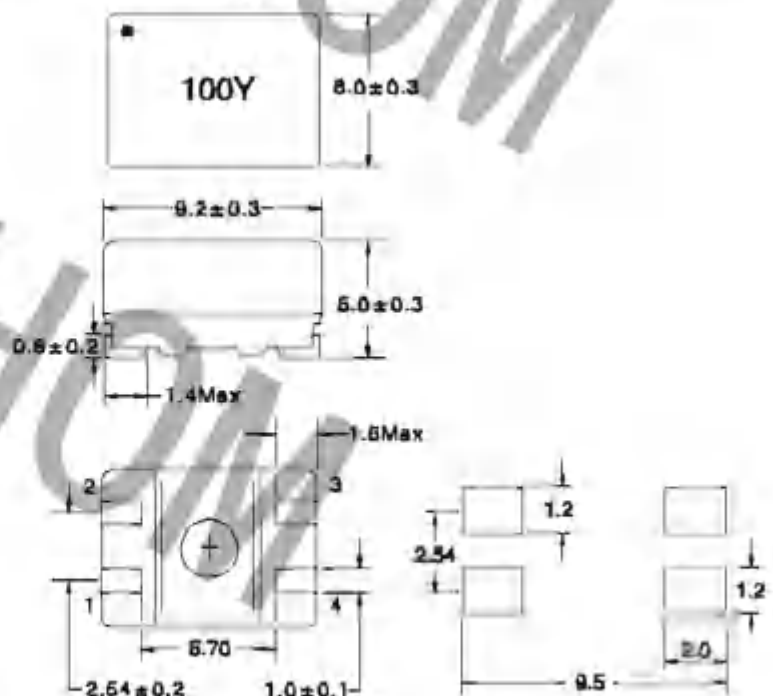
### SCHEMATIC



#### NOTES:

1. Temperature Rise: 20°C at rated current
2. Rated Voltage: 50 Vdc  
Dielectric Withstanding Voltage: 125 Vdc
3. Operating Temperature:  
-40°C to +105°C(Temperature rise included)
4. Storage Temperature:  
-40 °C to +105°C  
Solderability: 260°C for 5 sec
5. Core Material.....Ferrite
6. Wire.....Enamelled copper
7. Terminal coating.....Sn
8. Base.....LCP
9. Packaging.....1000 pcs. per 13-Inch reel

### PHYSICAL CHARACTERISTICS



Note: All specifications subject to change without notice.





## SMD WIRE WOUND COMMON MODE FILTER

### SF1206 SERIES

#### FEATURES:

- High common mode impedance at high frequency effects excellent noise suppression performance.

#### APPLICATIONS:

- Common mode noise suppression of signal lines in high speed and high density digital equipment such as personal computers and peripherals.

#### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance ( $\Omega$ ) $\pm 25\%$ | Test frequency (MHz) | DCR ( $\Omega$ ) Max | Rated Current (mA) Max | Rated Voltage (V) | Insulation resistance (Min) |
|-------------|-----------------------------------|----------------------|----------------------|------------------------|-------------------|-----------------------------|
| SF1206-370  | 37                                | 100                  | 0.10                 | 1000                   | 50                | 10M $\Omega$                |
| SF1206-101  | 100                               | 100                  | 0.14                 | 850                    | 50                | 10M $\Omega$                |
| SF1206-171  | 170                               | 100                  | 0.18                 | 700                    | 50                | 10M $\Omega$                |
| SF1206-261  | 260                               | 100                  | 0.22                 | 600                    | 50                | 10M $\Omega$                |
| SF1206-371  | 370                               | 100                  | 0.26                 | 600                    | 50                | 10M $\Omega$                |
| SF1206-531  | 530                               | 100                  | 0.30                 | 600                    | 50                | 10M $\Omega$                |
| SF1206-671  | 670                               | 100                  | 0.34                 | 500                    | 50                | 10M $\Omega$                |
| SF1206-871  | 870                               | 100                  | 0.39                 | 500                    | 50                | 10M $\Omega$                |
| SF1206-112  | 1100                              | 100                  | 0.44                 | 500                    | 50                | 10M $\Omega$                |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



- Inductance Testing: 100MHz E4991A
- RDC: QuadTech 1880 Milliohm meter
- Operating temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Storage Temperature:  $40^{\circ}\text{C}$  Max, 70% RH Max
- Resistance to soldering heat:  $260^{\circ}\text{C}$  for 10 seconds
- Marking: Part number

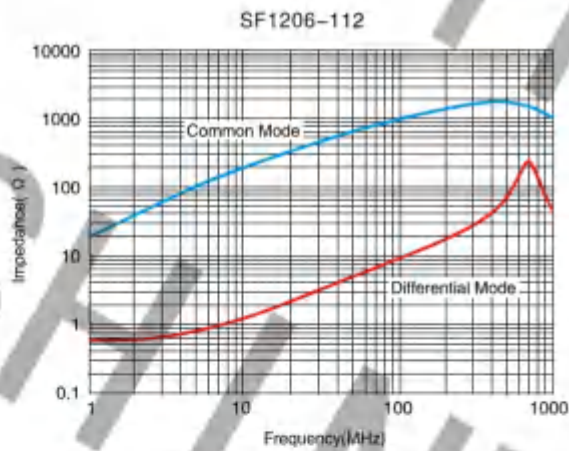
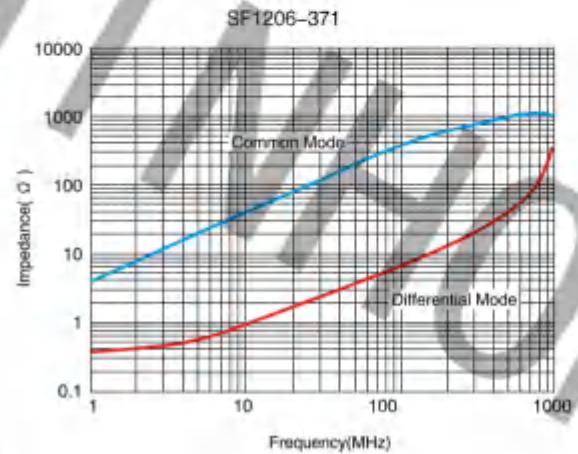
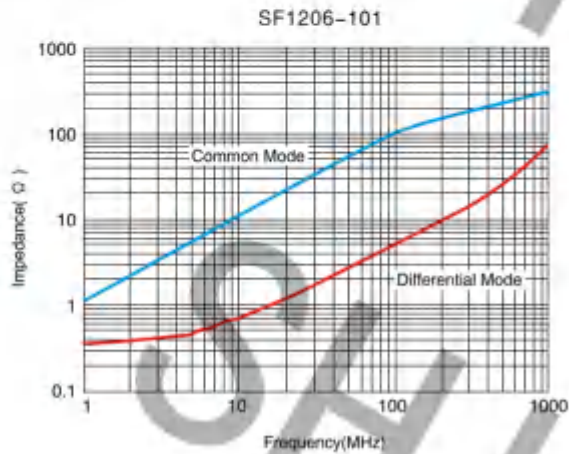
Note: All specifications subject to change without notice.



## SMD WIRE WOUND COMMON MODE FILTER

### SF1206 SERIES

#### IMPEDANCE FREQUENCY:





## SMD LINE FILTER SF1306 SERIES

### FEATURES:

- Low profile very effective in space conscious applications
- Low resistance filters have been designed for excellent electrical isolation
- High quality toroidal core
- Wide frequency range over 1000MHz
- Lead free construction

### OPTIONS:

- Tape & Reel is Standard
- Bulk packaging Available for Smaller Quantities

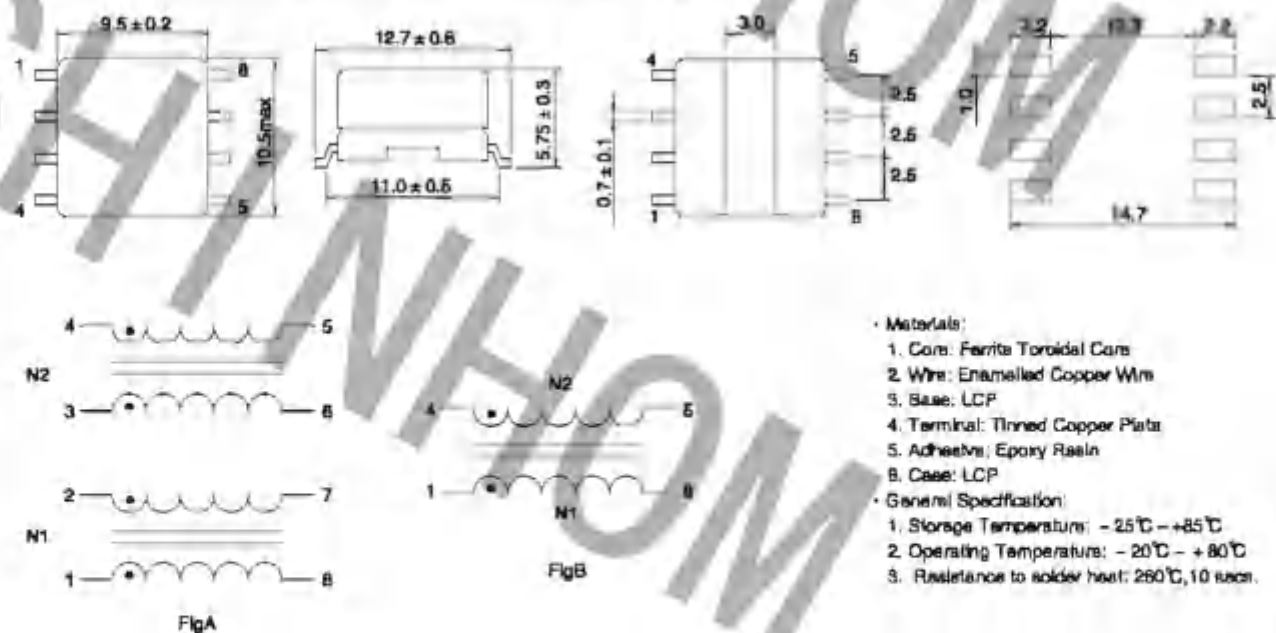
### COMMON APPLICATIONS:

- Provide common mode noise attenuation
- Reduce conducted noise
- For the suppression of EMI in data lines and signal lines, e.g., CAN Bus

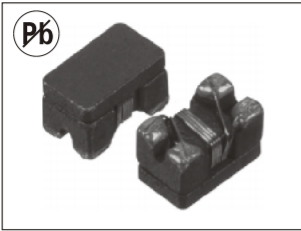
### ELECTRICAL CHARACTERISTICS:

| Part Number | Inductance ( $\mu H$ ) |         | DC resistance N1,N2( $\Omega$ ) | Rated Current (A) | Impedance ( $\Omega$ ) | Freq. range (MHz) | Fig |
|-------------|------------------------|---------|---------------------------------|-------------------|------------------------|-------------------|-----|
|             | L1,L2                  | L1-L2   |                                 |                   |                        |                   |     |
| SF1306      |                        |         |                                 |                   |                        |                   |     |
| 350YA       | $35 \pm 36\%$          | 4 max.  | 0.035 max                       | 2.70max           | 400 min                | 5.0-250           | B   |
| 600YA       | $60 \pm 35\%$          | 5 max.  | 0.055max                        | 2.00max           | 800min                 | 5.0-100           | B   |
| 101YA       | $100 \pm 35\%$         | 16 max. | 0.100max                        | 0.70max           | 300min                 | 1.0-50            | A   |
| 251YA       | $250 \pm 35\%$         | 25 max. | 0.150max                        | 0.60max           | 600min                 | 1.0-40            | A   |
| 501YA       | $500 \pm 35\%$         | 35 max. | 0.300max                        | 0.40max           | 1200min                | 1.0-40            | A   |
| 102YA       | $1000 \pm 35\%$        | 45 max. | 0.400max                        | 0.35max           | 2200min                | 0.5-10            | A   |
| 601YA       | $600 \pm 35\%$         | 35 max. | 0.300max                        | 0.40max           | 1200min                | 1.0-40            | A   |
| 102YA       | $1000 \pm 35\%$        | 45 max. | 0.400max                        | 0.35max           | 2200min                | 0.5-10            | A   |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



Note: All specifications subject to change without notice.



## SMD WIRE WOUND COMMON MODE FILTER

### SF1812 SERIES

#### FEATURES:

- High common mode impedance at high frequency effects excellent noise suppression performance.

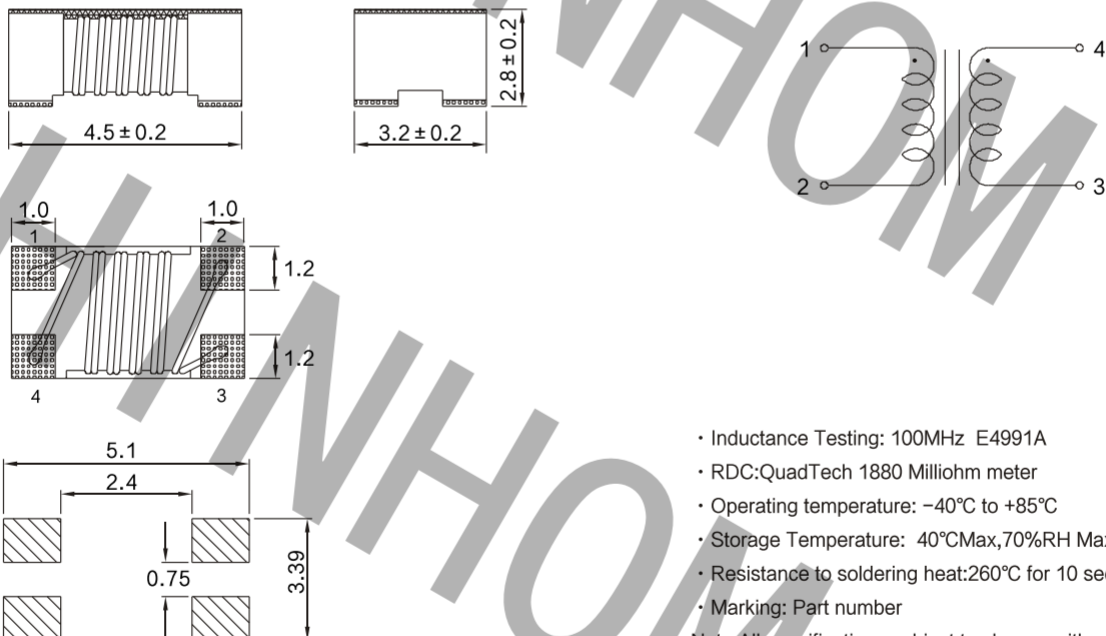
#### APPLICATIONS:

- Common mode noise suppression of signal lines in high speed and high density digital equipment such as personal computers and peripherals.

#### ELECTRICAL CHARACTERISTICS:

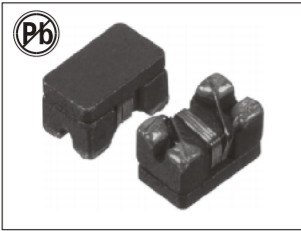
| Part Number | Impedance ( $\Omega$ ) $\pm 25\%$ | Test frequency (MHz) | DCR ( $\Omega$ ) Max | Rated Current (A) Max | Rated Voltage (V) | Insulation resistance (Min) |
|-------------|-----------------------------------|----------------------|----------------------|-----------------------|-------------------|-----------------------------|
| SF1812-800  | 80                                | 100                  | 0.07                 | 3.0                   | 50                | 10M $\Omega$                |
| SF1812-121  | 120                               | 100                  | 0.07                 | 3.0                   | 50                | 10M $\Omega$                |
| SF1812-201  | 200                               | 100                  | 0.10                 | 2.0                   | 50                | 10M $\Omega$                |
| SF1812-601  | 600                               | 100                  | 0.30                 | 1.5                   | 50                | 10M $\Omega$                |
| SF1812-801  | 800                               | 100                  | 0.35                 | 1.0                   | 50                | 10M $\Omega$                |
| SF1812-102  | 1000                              | 100                  | 0.40                 | 1.0                   | 50                | 10M $\Omega$                |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



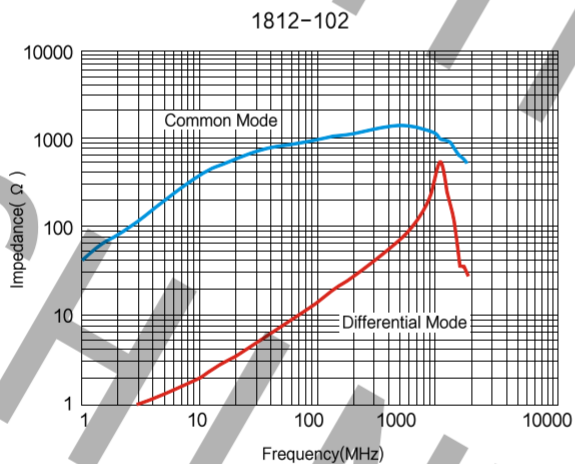
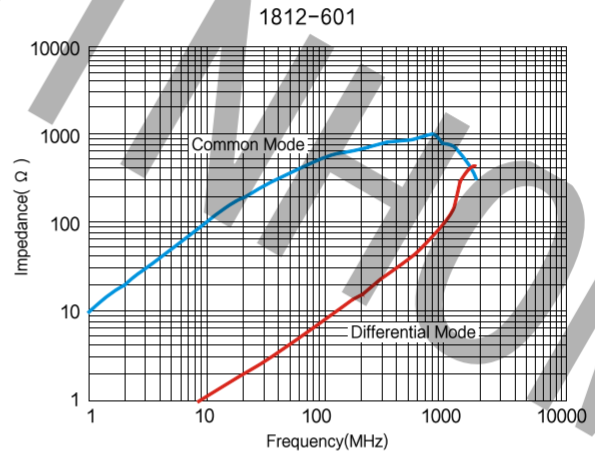
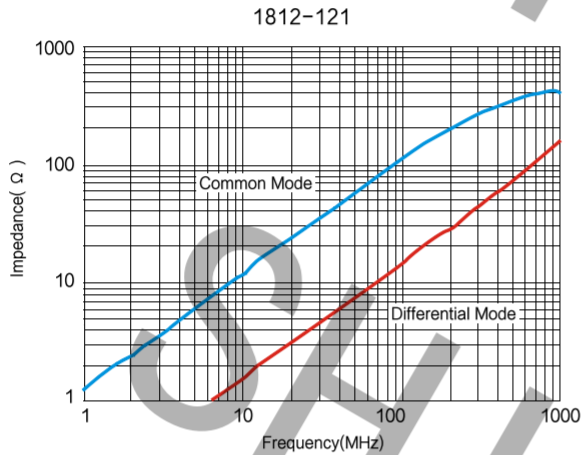
- Inductance Testing: 100MHz E4991A
  - RDC: QuadTech 1880 Milliohm meter
  - Operating temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
  - Storage Temperature:  $40^{\circ}\text{C}$  Max, 70%RH Max
  - Resistance to soldering heat:  $260^{\circ}\text{C}$  for 10 seconds
  - Marking: Part number
- Note: All specifications subject to change without notice.





## SMD WIRE WOUND COMMON MODE FILTER SF1812 SERIES

### IMPEDANCE FREQUENCY:





## SURFACE-MOUNT WOUND COMMON MODE CHOKES SF1812F SERIES

### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### COMMON APPLICATIONS:

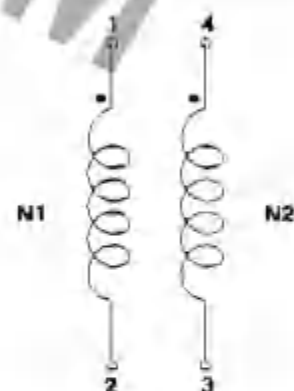
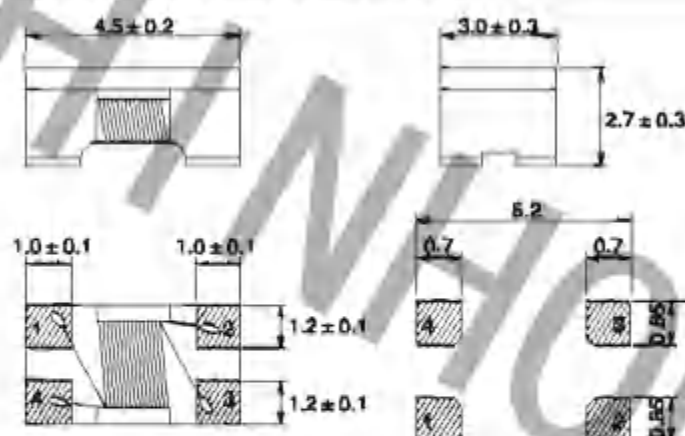
- Differential signal line common mode noise suppression
- Multimedia devices
- Automotive applications such as ADAS, infotainment, Sensing, TCU
- Automotive Ethernet

### ELECTRICAL CHARACTERISTICS: @25°C

| Part Number  | Inductance (uH) ±50%/-30% 100kHz | Impedance Z(Ω) ±25% 100MHz | Rated current (mA) | DCR (Ω) | Rated voltage (Vdc) |
|--------------|----------------------------------|----------------------------|--------------------|---------|---------------------|
| SF1812F-600Y | -                                | 60                         | 4100               | 0.1     | 60                  |
| SF1812F-800Y | 0.3                              | 90                         | 3600               | 0.2     | 60                  |
| SF1812F-121Y | -                                | 120                        | 3600               | 0.22    | 60                  |
| SF1812F-231Y | -                                | 230                        | 3500               | 0.22    | 60                  |
| SF1812F-251Y | -                                | 250                        | 3500               | 0.22    | 60                  |
| SF1812F-421Y | -                                | 420                        | 2850               | 0.22    | 60                  |
| SF1812F-601Y | 1.0                              | 600                        | 2600               | 0.30    | 60                  |
| SF1812F-701Y | -                                | 700                        | 2500               | 0.15    | 60                  |
| SF1812F-801Y | 1.3                              | 800                        | 2300               | 0.18    | 60                  |
| SF1812F-102Y | -                                | 1000                       | 1750               | 0.40    | 60                  |
| SF1812F-122Y | -                                | 1200                       | 1700               | 0.40    | 60                  |
| SF1812F-142Y | -                                | 1400                       | 1700               | 0.40    | 60                  |
| SF1812F-282Y | 4.2                              | 2800                       | 800                | 0.80    | 60                  |
| SF1812F-502Y | 11                               | 5000                       | 560                | 0.80    | 60                  |
| SF1812F-502Y | -                                | 5000                       | 350                | 2.00    | 60                  |
| SF1812F-802Y | 32                               | 8000                       | 320                | 2.85    | 60                  |

### PHYSICAL CHARACTERISTICS:

### WINDING:



### GENERAL SPECIFICATIONS:

- Temperature Rise: 40 °C at rated current  
 Operating Temperature: -40 °C to +125 °C (Temperature rise included)  
 Storage Temperature: -40 °C to +125 °C  
 Packaging: Tape & Reel is standard (Qty: 500PCS)  
 Note: All specifications subject to change without notice.

# SURFACE-MOUNT WOUND COMMON MODE CHOKES

## SF1812F SERIES

### FEATURES:

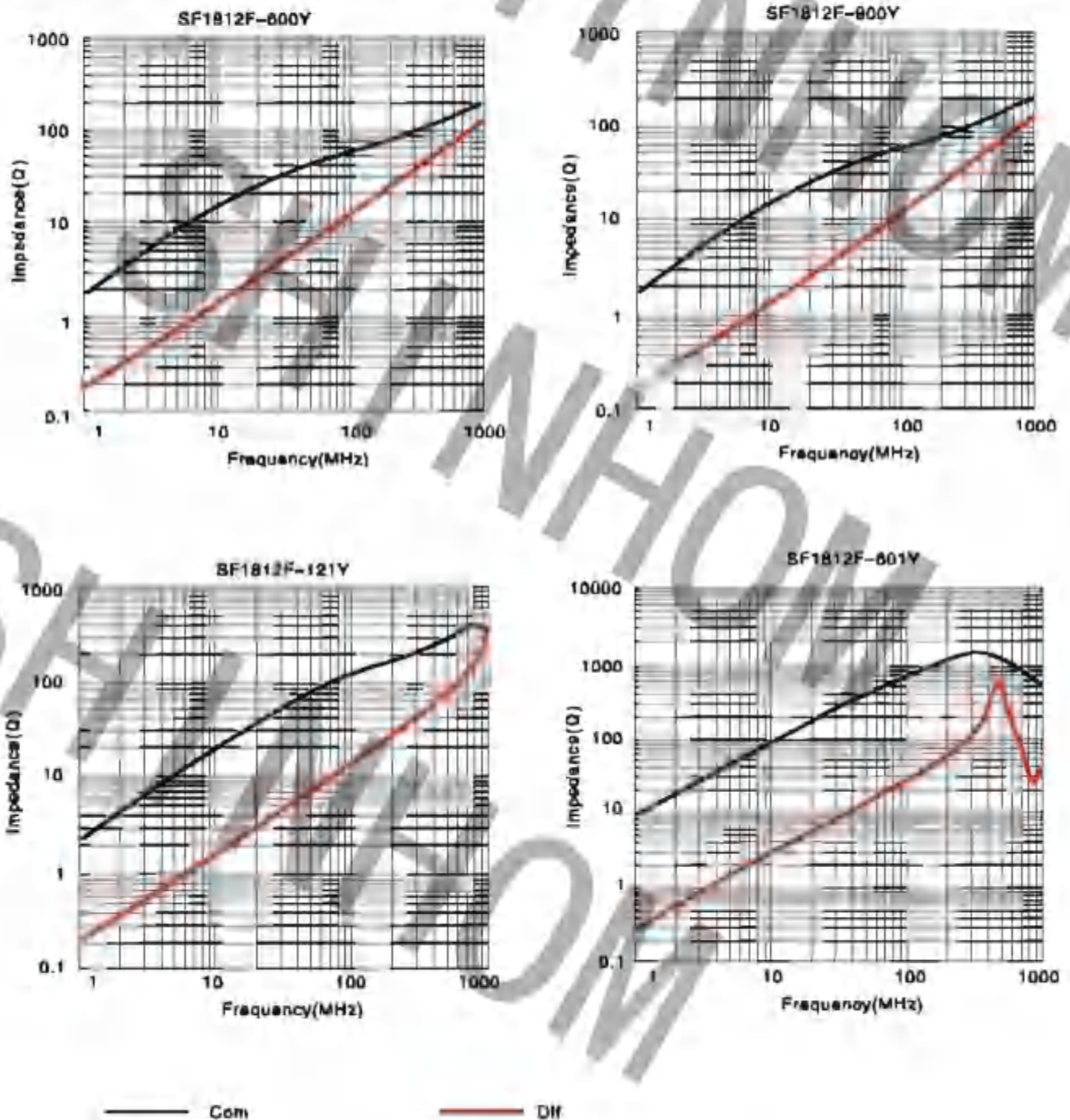
- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### COMMON APPLICATIONS:

- Differential signal line common mode noise suppression
- Multimedia devices
- Automotive applications such as ADAS, ABS, ESP, TCU, etc.
- Automotive Ethernet



### FREQUENCY VS IMPEDANCE





# SURFACE-MOUNT WOUND COMMON MODE CHOKES SF1812F SERIES

## FEATURES:

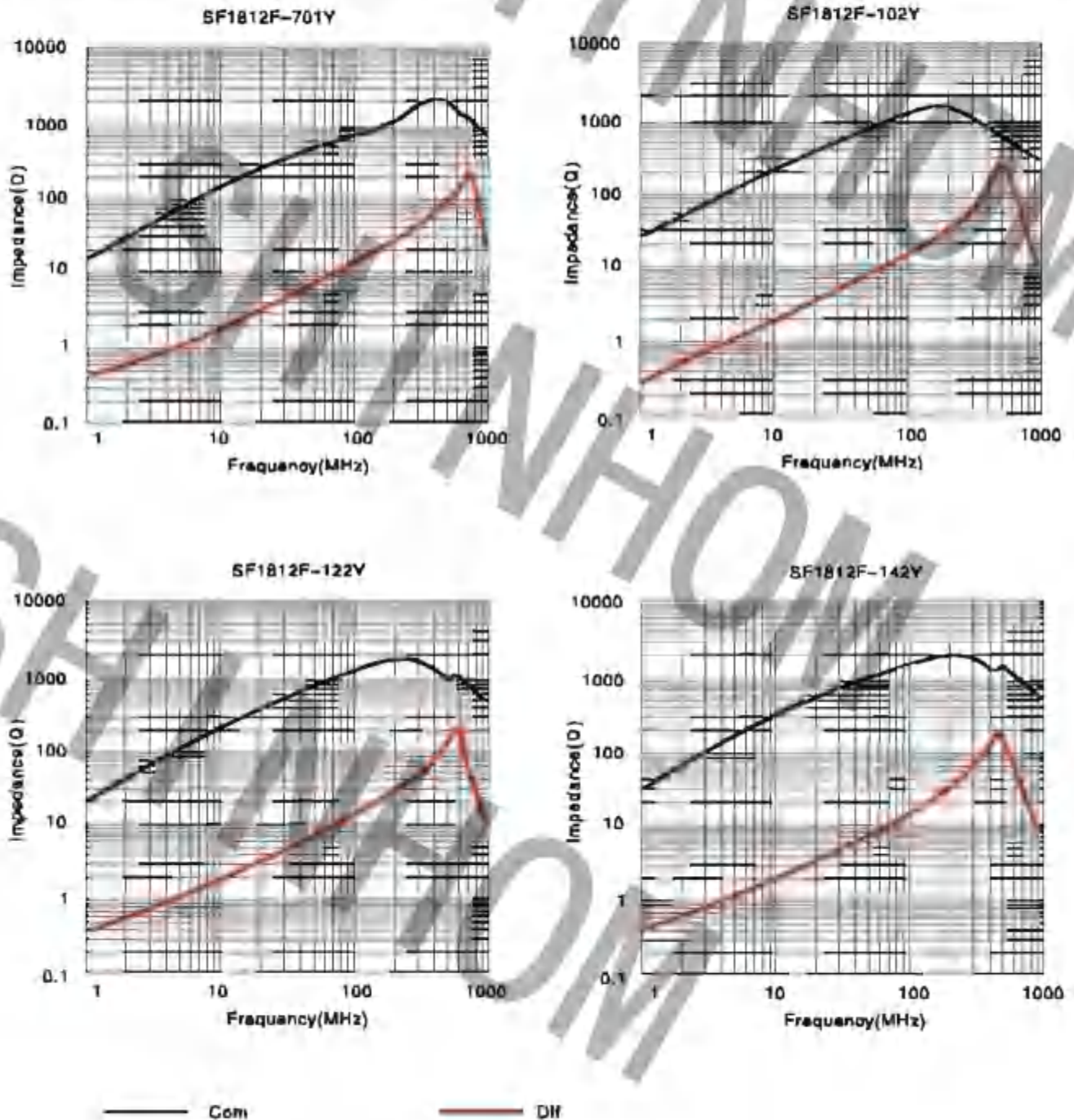
- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

## COMMON APPLICATIONS:

- Differential signal line common mode noise suppression.
- Multimedia devices
- Automotive applications such as ADAS, infotainment, Sensing, TCU
- Automotive Ethernet



## FREQUENCY VS IMPEDANCE





## SURFACE-MOUNT WOUND COMMON MODE CHOKES SF1812F SERIES

### FEATURES:

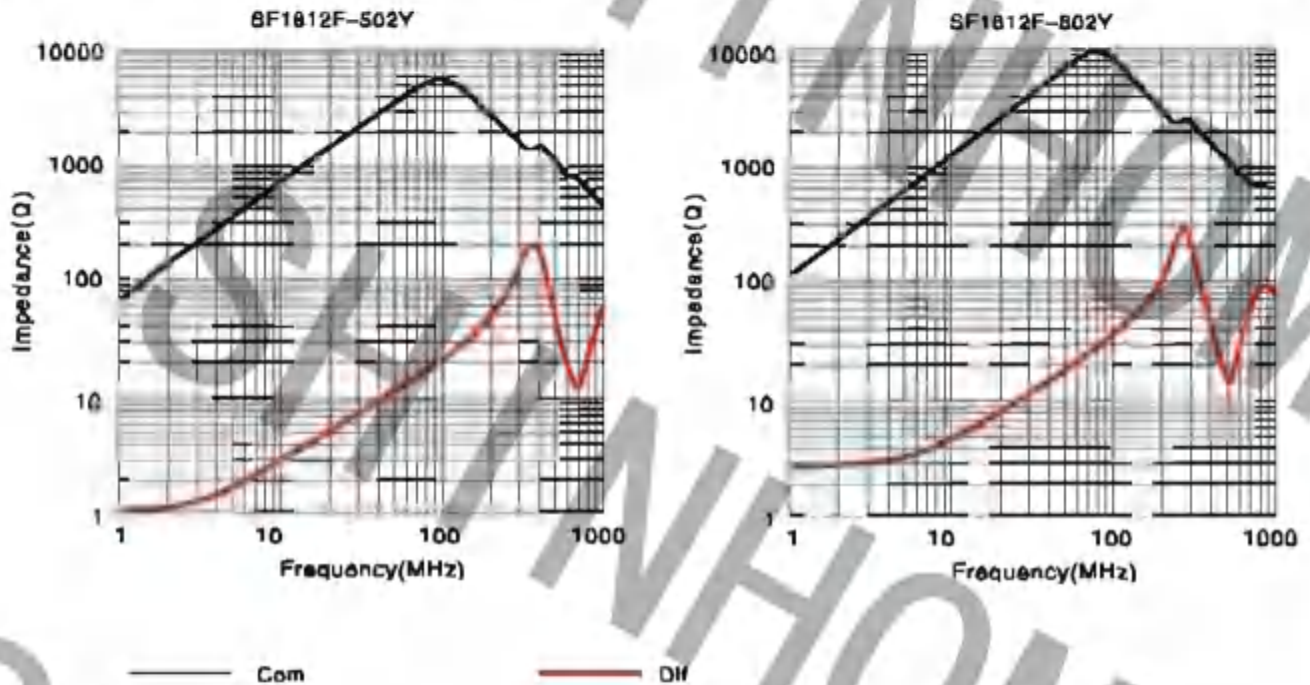
- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### COMMON APPLICATIONS:

- Differential signal line common mode noise suppression.
- Multimedia devices
- Automotive applications such as ADAS, Infotainment, Sensing, TCU
- Automotive Ethernet



### FREQUENCY VS IMPEDANCE



# COUPLED INDUCTORS, COMMON MODE CHOKES SF1812S SERIES



## FEATURES:

- Coupled inductor optimized for xDSL filtering applications
- Can be used as a common mode choke, 1:1 transformer or in SEPIC applications
- Terminations RoHS compliant
- Packaging 600/7" reel; 2200/13" reel

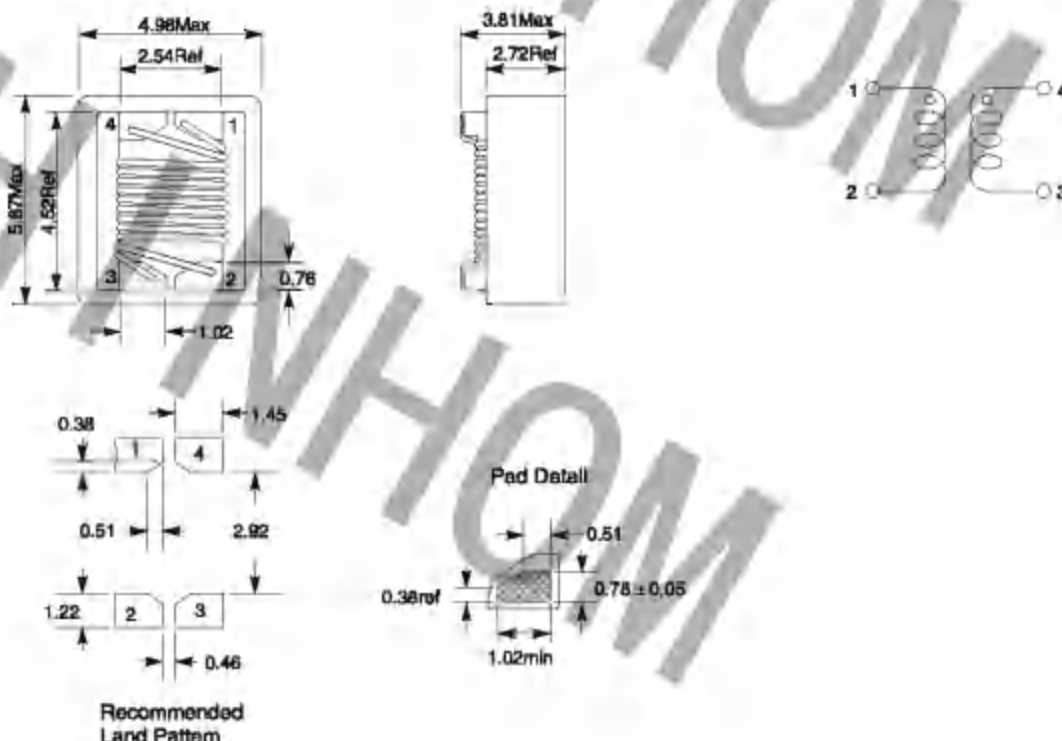
## ELECTRICAL CHARACTERISTICS:

| Part number  | Inductance<br>$\pm 20\%$ ( $\mu$ H)<br>100KHz, 0.1V | Q<br>1MHz | DCR<br>Max( $\Omega$ ) | SRF<br>Min(MHz) | Isat<br>(mA) | Irms<br>(mA) |
|--------------|-----------------------------------------------------|-----------|------------------------|-----------------|--------------|--------------|
| SF1812S-1R0M | 1.0                                                 | 38        | 0.2                    | 285             | 2400         | 2100         |
| SF1812S-2R2M | 2.2                                                 | 29        | 0.33                   | 175             | 1500         | 1200         |
| SF1812S-4R7M | 4.7                                                 | 43        | 0.41                   | 102             | 1500         | 1000         |
| SF1812S-100M | 10                                                  | 35        | 0.74                   | 74              | 800          | 780          |
| SF1812S-150M | 15                                                  | 37        | 0.96                   | 65              | 700          | 710          |
| SF1812S-220M | 22                                                  | 38        | 1.84                   | 54              | 500          | 530          |
| SF1812S-390M | 39                                                  | 39        | 2.8                    | 5.7             | 450          | 420          |
| SF1812S-470M | 47                                                  | 40        | 2.66                   | 4.8             | 400          | 390          |

1. DC current at which the inductance drops 10% (typ) from its value without current.
2. Current that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings.
3. Electrical specifications at 25 °C.
4. Ambient temperature -40 °C to +85 °C with I rms current
5. Maximum part temperature +125 °C (ambient + temp rise)
6. Storage temperature Component: -40 °C to +125 °C, Tape and reel packaging: -40 °C to +80 °C

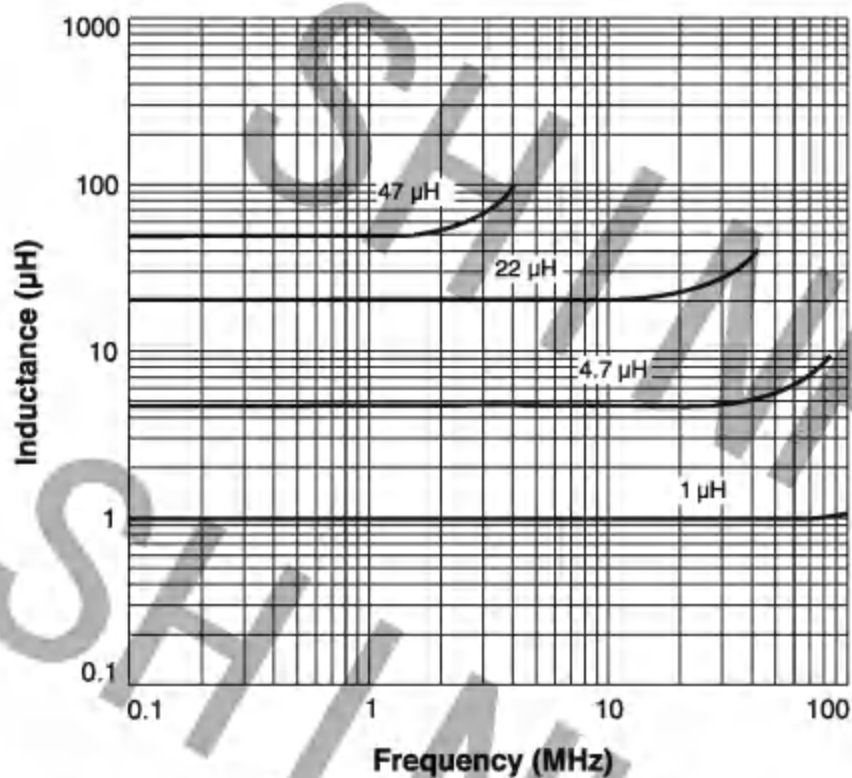
## PHYSICAL CHARACTERISTICS & WINDING:

Dimensions are in mm

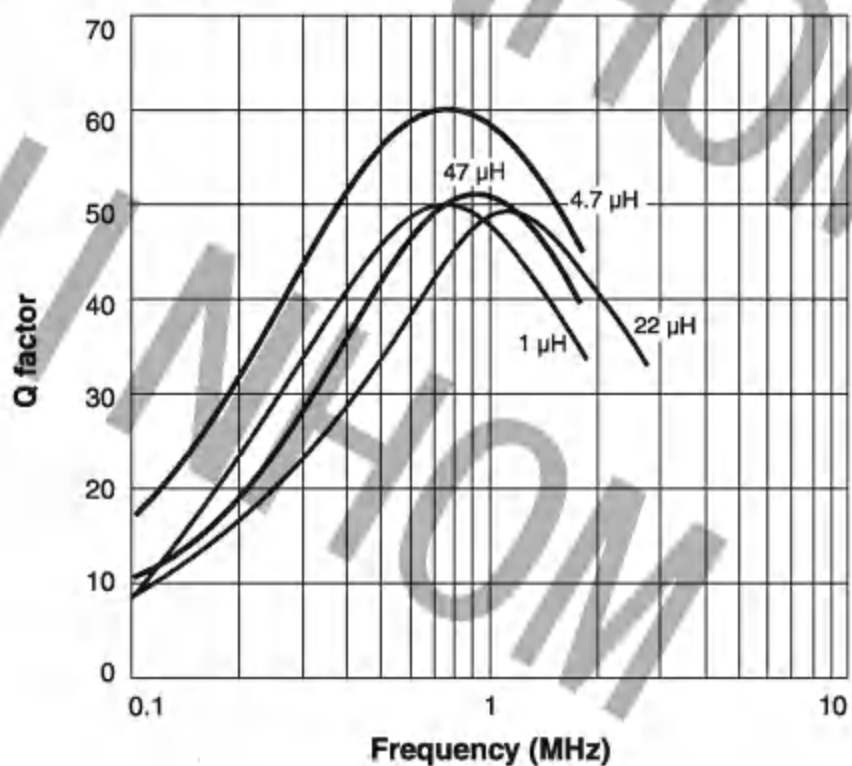


## PERFORMANCE CURVE:

Typical L vs Frequency



Typical Q vs Frequency



# AUTOMOTIVE SIGNAL COMMON MODE CHOKES

## SF4526F SERIES

### FEATURES:

- AEC-Q200 compliant, Grade 1
- PPAP ready and supported
- Manufactured in TS/IAF 16949 production lines
- Excellent impedance characteristics

### COMMON APPLICATIONS:

- Differential signal line common mode noise suppression.
- Multimedia devices
- Automotive applications such as ADAS, Infotainment, Sensing, TCU
- Automotive Ethernet

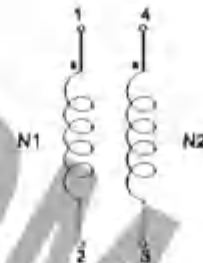
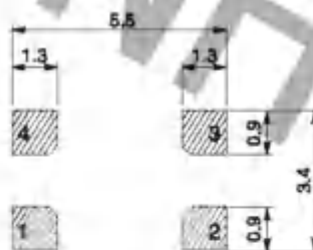
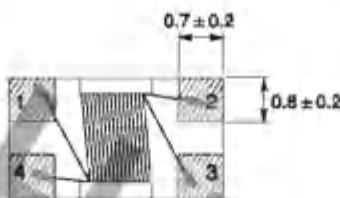
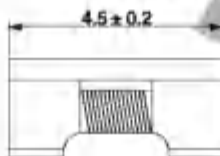


### ELECTRICAL CHARACTERISTICS:@25°C

| Part Number  | Inductance (uH)±50%/-30% 100KHz | Rated current (A) | DCR (mΩ) | Rated voltage (Vdc) | Insulation Resistance (MΩ) Min |
|--------------|---------------------------------|-------------------|----------|---------------------|--------------------------------|
| SF4526F-110Y | 11                              | 0.36              | 500      | 50                  | 10                             |
| SF4526F-220Y | 22                              | 0.31              | 800      | 50                  | 10                             |
| SF4526F-510Y | 51                              | 0.23              | 1000     | 50                  | 10                             |
| SF4526F-101Y | 100                             | 0.20              | 2000     | 50                  | 10                             |

### PHYSICAL CHARACTERISTICS:

### WINDING:



### GENERAL SPECIFICATIONS:

- Rated Current is based on an rms temperature rise of 20 °C
- Inductance Test Conditions: 0.1V, 100KHz
- SF4526F Series is AEC-Q200 Automotive certified
- SF4526F Series is RoHS Compliant and Pb free
- Operating Temperature: -40 °C to +150 °C (Temperature rise Included)
- Storage Temperature(on PCB): -40 °C to +150 °C
- Storage (in original packaging): <40 °C , <70% RH
- Packaging: Tape & Reel is standard (Qty: 500PCS)

Note:All specifications subject to change without notice.

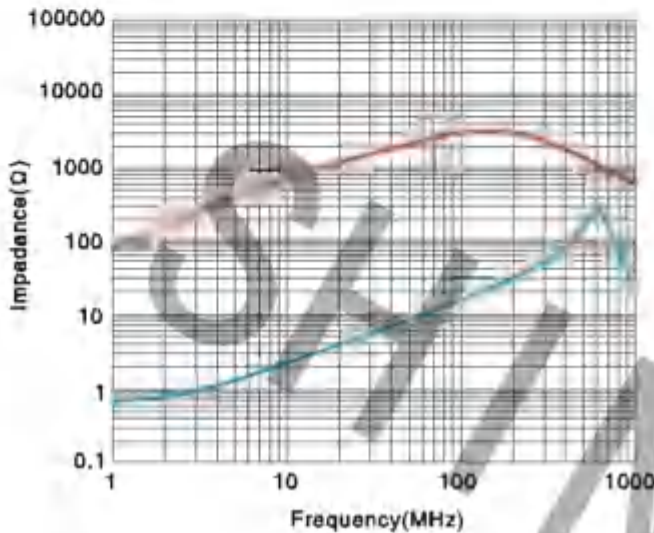


# AUTOMOTIVE SIGNAL COMMON MODE CHOKES SF4526F SERIES

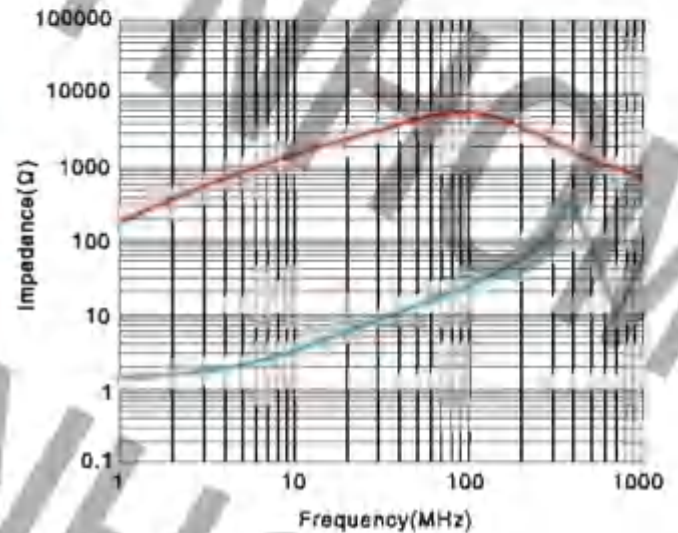


## FREQUENCY VS IMPEDANCE

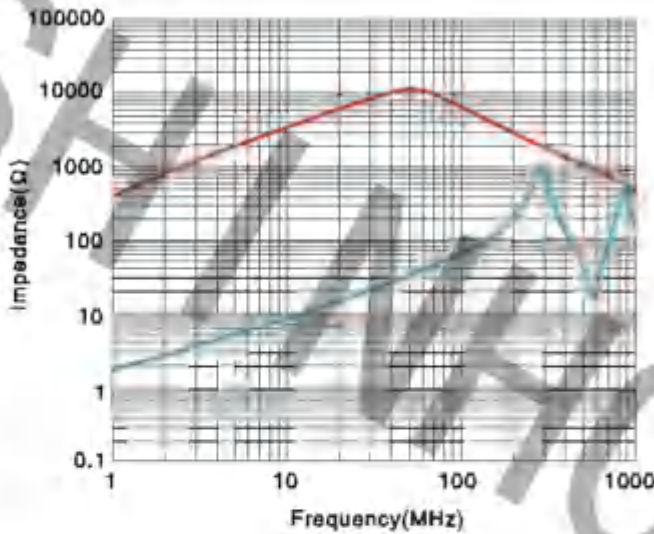
SF4526F-110Y



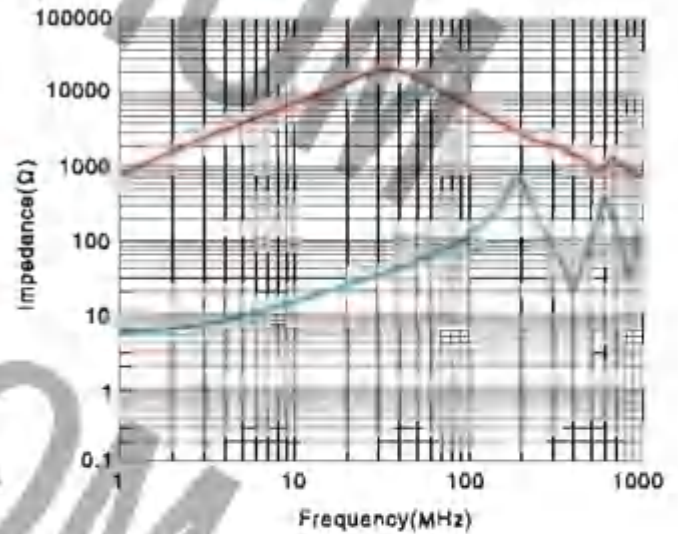
SF4526F-220Y



SF4526F-510Y



SF4526F-101Y



— Com

— Dif

# AUTOMOTIVE SIGNAL COMMON MODE CHOKES

## SF4528F SERIES

### FEATURES:

- AEC-Q200 compliant
- PPAP ready and supported
- Manufactured in T6/IATF 16949 production lines
- Excellent impedance characteristics

### COMMON APPLICATIONS:

- Differential signal line common mode noise suppression.
- Multimedia devices
- Automotive applications such as ADAS, Infotainment, Sensing, TCU
- Automotive Ethernet

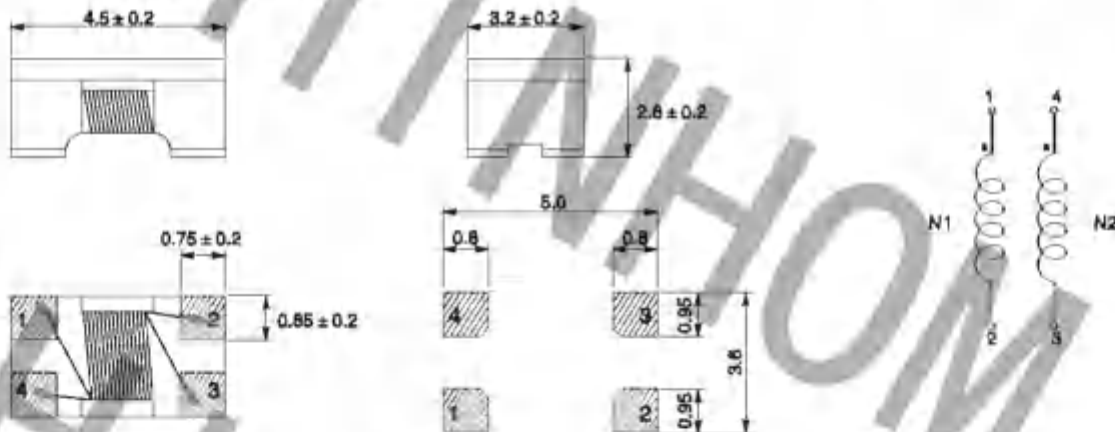


### ELECTRICAL CHARACTERISTICS:@25°C

| Part Number  | Inductance (uH)±50%/±30% 100KHz | Impedance Z(Ω)@10MHz |      | Rated current (A) | DCR (mΩ) | Rated voltage (Vdc) |
|--------------|---------------------------------|----------------------|------|-------------------|----------|---------------------|
|              |                                 | Min                  | Typ  |                   |          |                     |
| SF4528F-110Y | 11                              | 300                  | 600  | 0.36              | 600      | 50                  |
| SF4528F-220Y | 22                              | 500                  | 1200 | 0.31              | 1000     | 50                  |
| SF4528F-510Y | 51                              | 1000                 | 2800 | 0.23              | 1000     | 50                  |
| SF4528F-101Y | 100                             | 2000                 | 5800 | 0.20              | 2000     | 50                  |

### PHYSICAL CHARACTERISTICS:

### WINDING:



### GENERAL SPECIFICATIONS:

- Rated Current is based on an rms temperature rise of 40 °C
- Inductance Test Conditions: 0.1V, 100KHz
- SF4528F Series is AEC-Q200 Automotive certified
- SF4528F Series is RoHS Compliant and Pb free
- Operating Temperature: -55 °C to +150 °C (Temperature rise Included)
- Storage Temperature(on PCB): -55 °C to +150 °C
- Storage (in original packaging): <40 °C , <60% RH
- Packaging: Tape & Reel is standard (Qty: 500PCS)

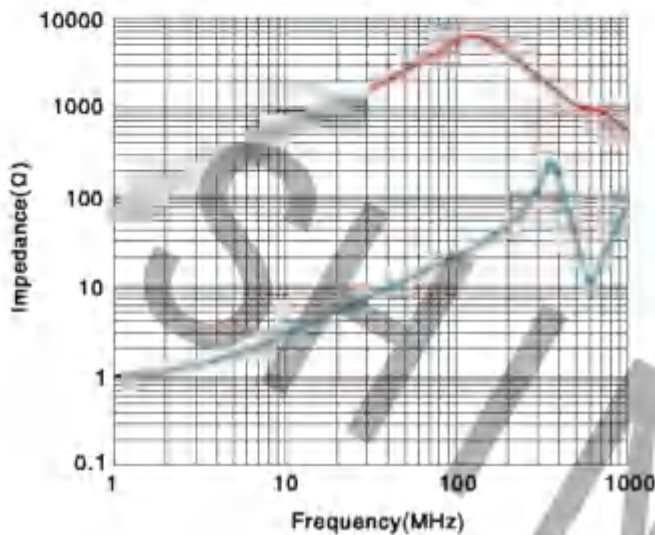
Note:All specifications subject to change without notice.

# AUTOMOTIVE SIGNAL COMMON MODE CHOKES SF4528F SERIES

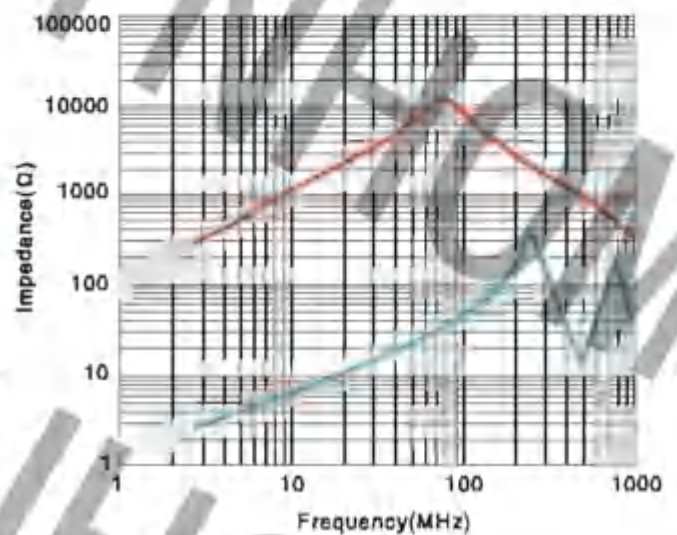


## FREQUENCY VS IMPEDANCE

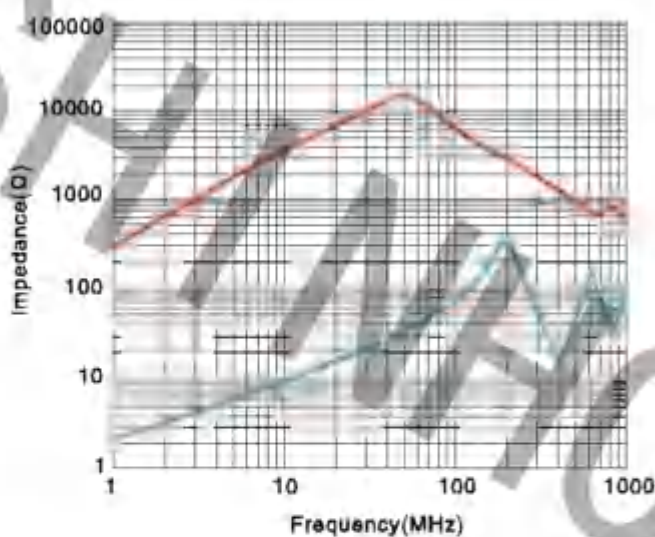
SF4528F-110Y



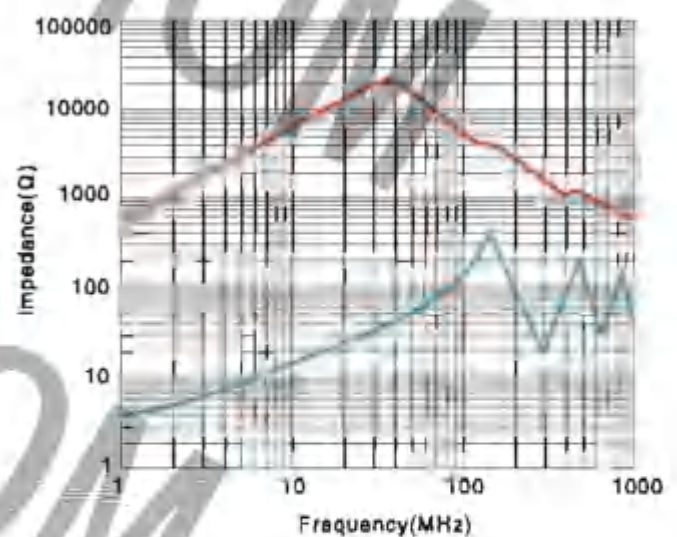
SF4528F-220Y



SF4528F-510Y



SF4528F-101Y



— Com

— Dif





## SMD WIRE WOUND COMMON MODE FILTER SF5045 SERIES

### FEATURES:

- High common mode impedance at high frequency effects excellent noise suppression performance.

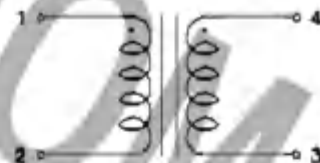
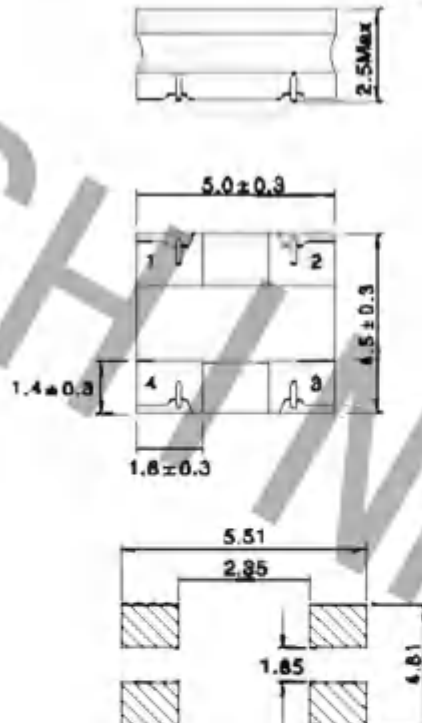
### APPLICATIONS:

- Common mode noise suppression of signal lines in high speed and high density digital equipment such as personal computers and peripherals.

### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance ( $\Omega$ ) typ. | Test frequency (MHz) | DCR (m $\Omega$ ) Max | Rated Current (A) Max | Rated Voltage (V) | Insulation resistance (Min) |
|-------------|-----------------------------|----------------------|-----------------------|-----------------------|-------------------|-----------------------------|
| SF5045-101  | 100                         | 100                  | 9                     | 8                     | 50                | 10M $\Omega$                |
| SF5045-251  | 250                         | 100                  | 14                    | 5                     | 50                | 10M $\Omega$                |
| SF5045-501  | 500                         | 100                  | 19                    | 4                     | 50                | 10M $\Omega$                |
| SF5045-102  | 1000                        | 100                  | 24                    | 3                     | 50                | 10M $\Omega$                |
| SF5045-142  | 1400                        | 100                  | 40                    | 1.5                   | 50                | 10M $\Omega$                |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



- Inductance Tailing: 100MHz E4001A
- RDC: QuadTech 1860 Milliohm meter
- Operating temperature:  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$
- Storage Temperature:  $40^{\circ}\text{C}$  Max 70%RH Max
- Resistance to soldering heat:  $260^{\circ}\text{C}$  for 10 seconds
- Marking: Part number

Note: All specifications subject to change without notice.

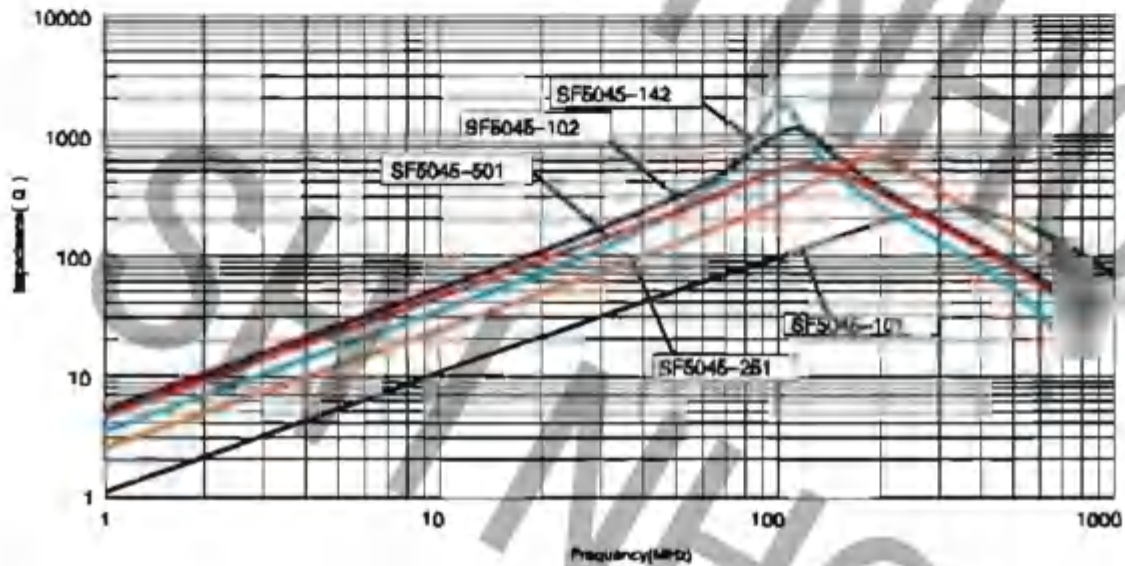




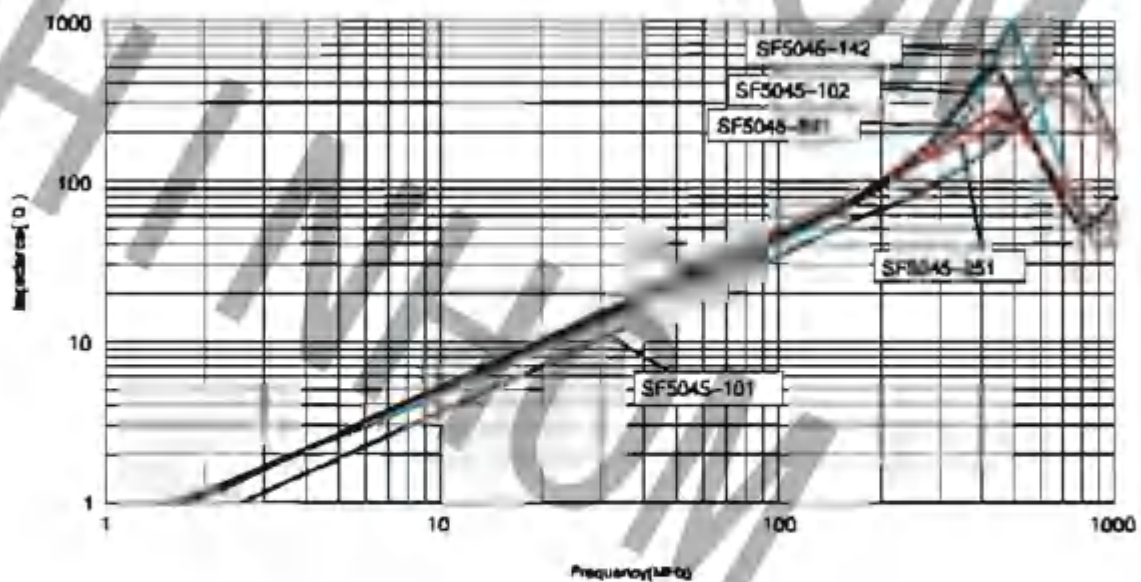
## SMD WIRE WOUND COMMON MODE FILTER SF5045 SERIES

### IMPEDANCE FREQUENCY:

Common Mode



Differential Mode



# AUTOMOTIVE SIGNAL COMMON MODE CHOKES

## SF6527F SERIES

### FEATURES:

- AEC-Q200 compliant, Grade 1
- PPAP ready and supported
- Manufactured in TS/IAF 16949 production lines
- Excellent impedance characteristics

### COMMON APPLICATIONS:

- Differential signal line common mode noise suppression.
- Multimedia devices
- Automotive applications such as ADAS, Infotainment, Sensing, TCU
- Automotive Ethernet

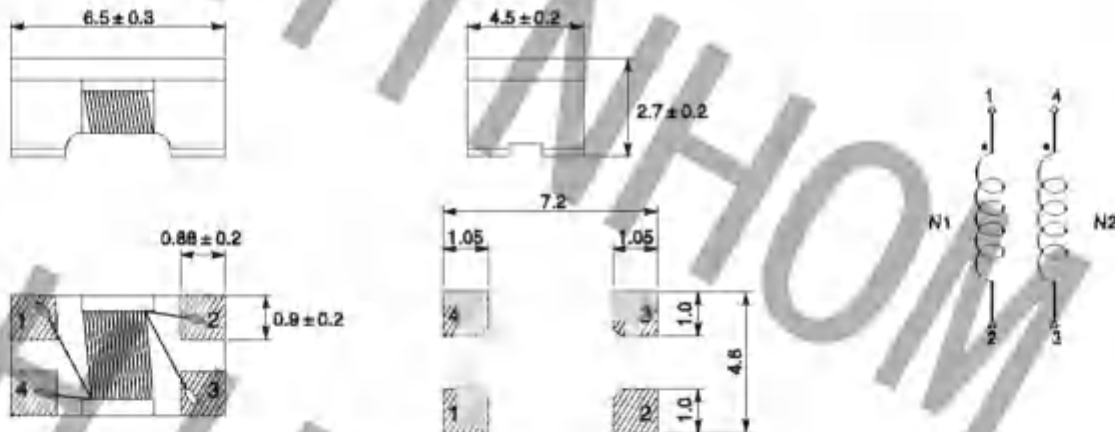


### ELECTRICAL CHARACTERISTICS:@25°C

| Part Number            | Inductance (uH)±50%/-30% 100KHz | Rated current (A)             | DCR (mΩ) | Return loss(dB) Min |             |                                                |        |         |
|------------------------|---------------------------------|-------------------------------|----------|---------------------|-------------|------------------------------------------------|--------|---------|
|                        |                                 |                               |          | 1-10MHz             | 30MHz       | 80MHz                                          |        |         |
| SF5527F-101Y           | 100                             | 0.35                          | 2000     | -28                 | -23         | -18                                            |        |         |
| Insertion loss(dB) Max |                                 | Common mode Rejection(dB) Min |          |                     |             | Differential to common mode Rejection (dB) Min |        |         |
| 1-60MHz                | 100MHz                          | 1MHz                          | 10MHz    | 60-100MHz           | 200-1000MHz | 1-10MHz                                        | 100MHz | 1000MHz |
| -1.0                   | -3.0                            | -18                           | -35      | -43                 | -30         | -70                                            | -50    | -25     |

### PHYSICAL CHARACTERISTICS:

### WINDING:



### GENERAL SPECIFICATIONS:

- Rated Current is based on an I rms temperature rise of 40 °C
- Inductance Test Conditions: 0.1V, 100KHz
- SF6527F Series is AEC-Q200 Automotive certified
- SF6527F Series is RoHS Compliant and Pb free
- Operating Temperature: -40 °C to +125 °C (Temperature rise included)
- Storage Temperature(on PCB): -40 °C to +125 °C
- Storage (in original packaging): <40 °C , <60% RH

Note:All specifications subject to change without notice.

# WIRE WOUND TYPE COMMON MODE FILTER

## SF1008F-3W-801Y

### FEATURES:

- High common mode impedance at high frequency effects excellent noise suppression performance.
- small size and low profile.
- 100% Lead(Pb) & Halogen-Free and RoHS compliant.
- Operating temperature-40°C ~ +125°C(Including self - temperature rise)

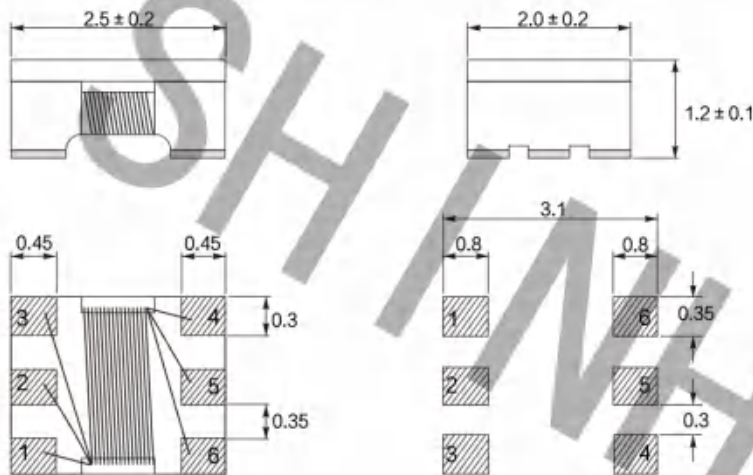


### ELECTRICAL CHARACTERISTICS:@25°C

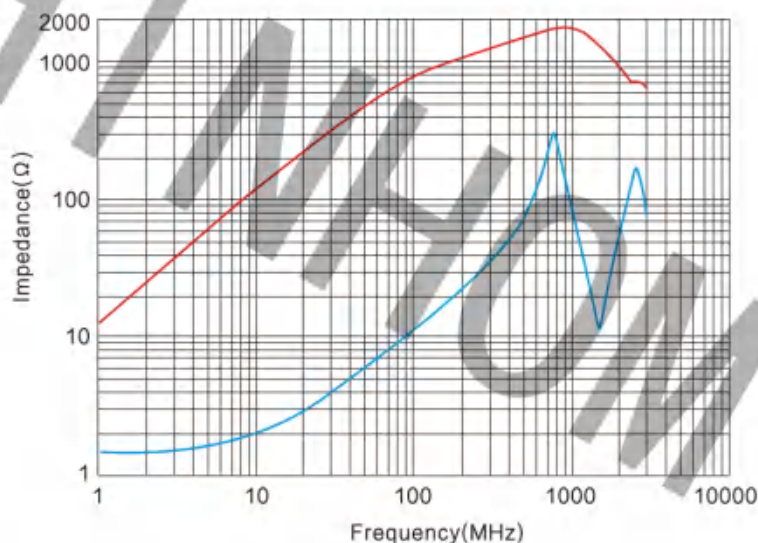
| Part Number     | Impedance<br>Z(Ω)@100MHz | Rated voltage<br>(V)Max | Rated current<br>(A)Max | DCR<br>(Ω) Max | Insulation<br>Resistance<br>(MΩ)Min |
|-----------------|--------------------------|-------------------------|-------------------------|----------------|-------------------------------------|
| SF1008F-3W-801Y | 800 ± 25%                | 20                      | 0.15                    | 1.6            | 10                                  |

### PHYSICAL CHARACTERISTICS:

### WINDING:



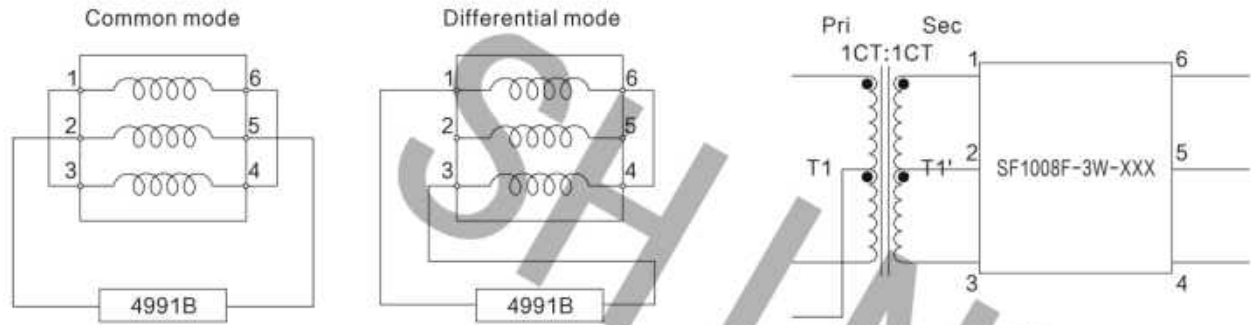
### PERFORMANCE CURVES:



Common mode: —  
Differential mode: —

Note:All specifications subject to change without notice.

# SCHEMATIC DIAGRAM:





# WIRE WOUND TYPE COMMON MODE FILTER

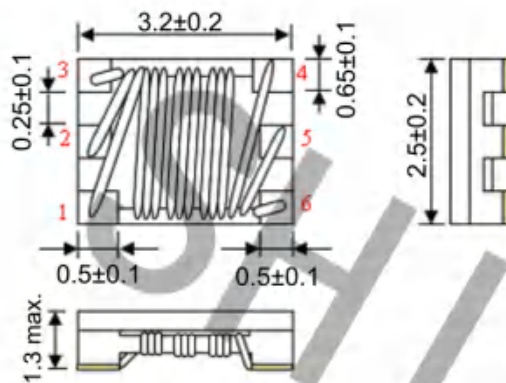
## SF1210F-3W Series



### 1. Features

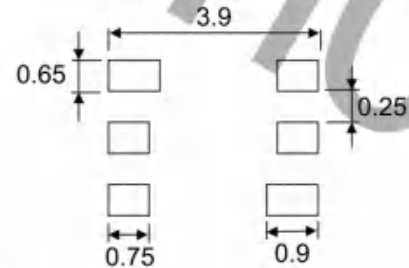
1. High common mode impedance at high frequency effects excellent noise suppression performance.
2. SF1210F-3W series realizes small size and low profile.
3. 100% Lead(Pb) & Halogen-Free and RoHS compliant.
4. Operating temperature-40~+125°C (Including self - temperature rise)

### PHYSICAL CHARACTERISTICS:

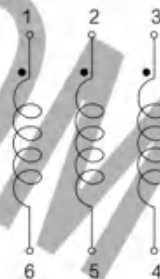
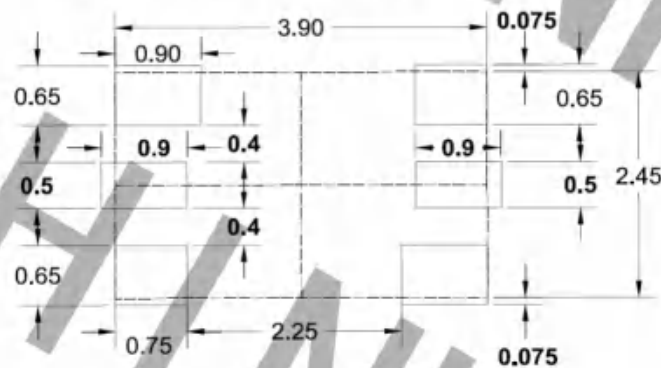


### WINDING:

#### Recommended PC Board Pattern



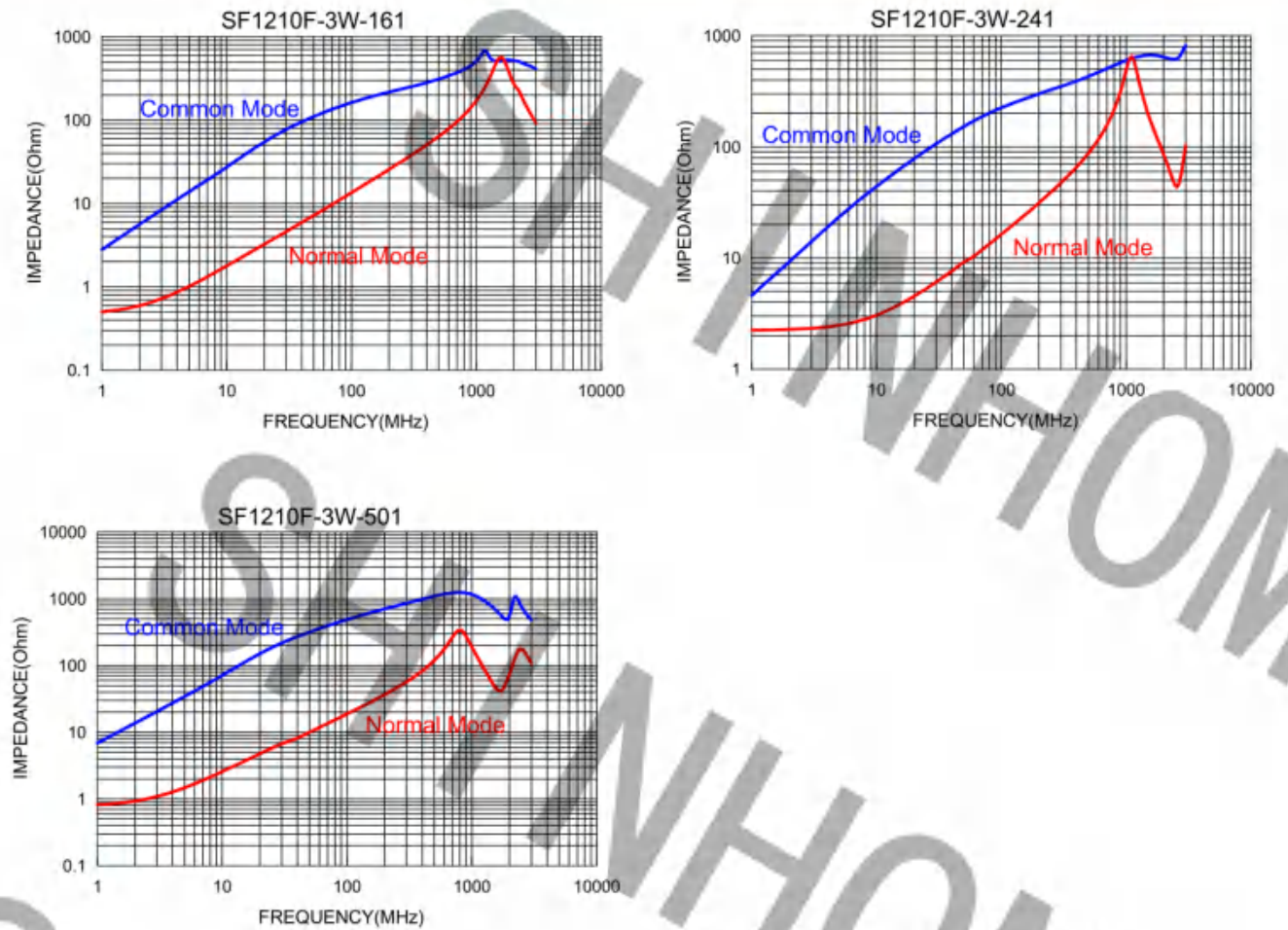
#### Solder paste stencil aperture recommendation



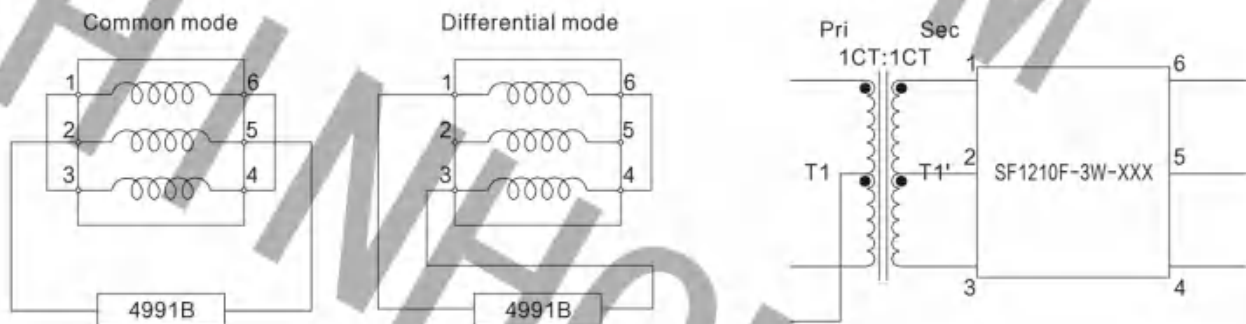
### ELECTRICAL CHARACTERISTICS:@25°C

| TAI-TECH<br>Part Number | Common mode<br>Impedance ( $\Omega$ ) | Test<br>Frequency<br>(MHz) | DC<br>Resistance<br>( $\Omega$ ) max. | Rated Current<br>(mA) max | Rated Volt.<br>(Vdc) max | Withstand<br>Volt. (Vdc)<br>max | IR<br>( $\Omega$ ) min. |
|-------------------------|---------------------------------------|----------------------------|---------------------------------------|---------------------------|--------------------------|---------------------------------|-------------------------|
| SF1210F-3W-161          | 160 $\pm$ 25%                         | 100                        | 0.21                                  | 200                       | 50                       | 125                             | 10M                     |
| SF1210F-3W-241          | 240 $\pm$ 25%                         | 100                        | 0.33                                  | 300                       | 50                       | 125                             | 10M                     |
| SF1210F-3W-501          | 500 $\pm$ 25%                         | 100                        | 0.43                                  | 500                       | 50                       | 125                             | 10M                     |

## PERFORMANCE CURVES:

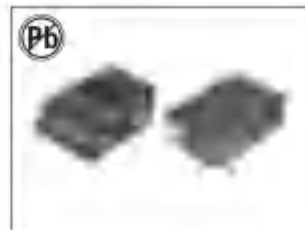


## SCHEMATIC DIAGRAM:



# SURFACE-MOUNT COMMON MODE CHOKES

## SQD 32T,45T SERIES



### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### OPTIONS:

- Packaging: Tape & Reel is standard (Qty:2000pcs)
- Bulk packaging available for smaller quantities
- Tolerance:20% is standard, tighter tolerances available

### COMMON APPLICATIONS:

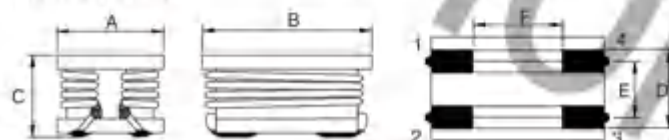
- DC/DCAC/DC converter
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems
- Computer Peripheral Equipment

### ELECTRICAL CHARACTERISTICS:

### PHYSICAL CHARACTERISTICS:

| Part Number  | Common Mode Impedance@100MHz (Ω) Typical | IDC (A) Max | DCR (mΩ) Max |
|--------------|------------------------------------------|-------------|--------------|
| SQD32T01-800 | 80                                       | 0.6         | 0.08         |
| SQD32T01-121 | 120                                      | 0.6         | 0.1          |
| SQD32T01-221 | 220                                      | 0.5         | 0.12         |
| SQD32T02-800 | 80                                       | 0.6         | 0.08         |
| SQD32T02-121 | 120                                      | 0.6         | 0.1          |
| SQD32T02-221 | 220                                      | 0.5         | 0.12         |
| SQD45T01-121 | 120                                      | 1.0         | 0.05         |
| SQD45T01-331 | 330                                      | 1.0         | 0.08         |
| SQD45T01-701 | 700                                      | 0.8         | 0.1          |
| SQD45T02-121 | 120                                      | 1.0         | 0.05         |
| SQD45T02-331 | 330                                      | 1.0         | 0.08         |
| SQD45T02-701 | 700                                      | 0.8         | 0.1          |

01 Seires shape



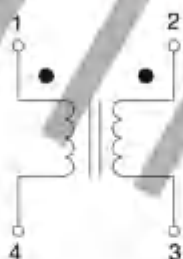
02 Seires shape



| Type   | A       | B       | C       | D   | E   | F   |
|--------|---------|---------|---------|-----|-----|-----|
| SQD32T | 3.2±0.3 | 2.5±0.3 | 2.2±0.3 | 1.6 | 0.6 | 1.2 |
| SQD45T | 4.5±0.3 | 3.2±0.3 | 3.2±0.3 | 2.5 | 1.2 | 1.5 |

Note: L: K=±10%, M=±20%, N=±30%

### WINDING:



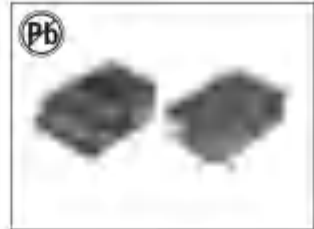
- Z test with HP4191A or HP4395A
- RDC:QuadTech 1880 Milliohm meter
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C
- Resistance to soldering heat:260°C for 10 seconds
- Marking: Part number and date code

Note:All specifications subject to change without notice.



# SURFACE-MOUNT COMMON MODE CHOKES

## SQD 55T,60T,80T,85T,100T SERIES



### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### OPTIONS:

- Packaging: Tape & Reel is standard (Qty:2000pcs)
- Bulk packaging available for smaller quantities
- Tolerance:20% is standard, tighter tolerances available

### COMMON APPLICATIONS:

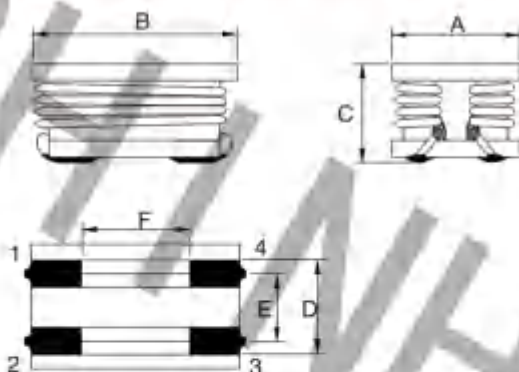
- DC/DCAC/DC converter
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems
- Computer Peripheral Equipment

### ELECTRICAL CHARACTERISTICS:

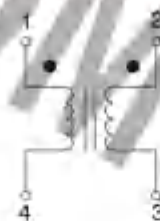
| Part Number | Common Mode Impedance (Ω)Typical |        |        | IDC (A)Max | DCR (mΩ)Max |
|-------------|----------------------------------|--------|--------|------------|-------------|
|             | 1MHz                             | 50MHz  | 100MHz |            |             |
| SQD55T-151  | 15.0                             | 100.0  | 150.0  | 2.0        | 60.0        |
| SQD55T-351  | 50.0                             | 350.0  | 350.0  | 2.0        | 70.0        |
| SQD60T-601  | 70.0                             | 500.0  | 600.0  | 2.0        | 45.0        |
| SQD60T-701  | 75.0                             | 600.0  | 700.0  | 2.0        | 60.0        |
| SQD80T-701  | 20.0                             | 400.0  | 700.0  | 4.0        | 40.0        |
| SQD80T-901  | 40.0                             | 600.0  | 900.0  | 4.0        | 45.0        |
| SQD85T-203  | 50.0                             | 2200.0 | 2000.0 | 2.5        | 75.0        |
| SQD100T-801 | 80.0                             | 850.0  | 800.0  | 5.0        | 25.0        |
| SQD100T-102 | 90.0                             | 900.0  | 1000.0 | 5.0        | 35.0        |
| SQD100T-122 | 150.0                            | 1100.0 | 1200.0 | 5.0        | 45.0        |

Note:1. K=±10%,M=±20%,N=±30%

### PHYSICAL CHARACTERISTICS:



### WINDING:



| Type    | A        | B        | C       | D    | E   | F   |
|---------|----------|----------|---------|------|-----|-----|
| SQD55T  | 5.5±0.3  | 4.6±0.3  | 1.6±0.3 | 4.8  | 2.7 | 2.2 |
| SQD60T  | 6.0±0.3  | 7.5±0.3  | 3.2±0.3 | 7.5  | 2.0 | 1.8 |
| SQD80T  | 8.0±0.3  | 10.0±0.3 | 5.0±0.3 | 10.0 | 4.0 | 2.5 |
| SQD85T  | 8.5±0.3  | 5.0±0.3  | 5.0±0.3 | 5.0  | 1.8 | 4.0 |
| SQD100T | 10.0±0.3 | 12.0±0.3 | 6.0±0.3 | 12.0 | 4.8 | 3.5 |

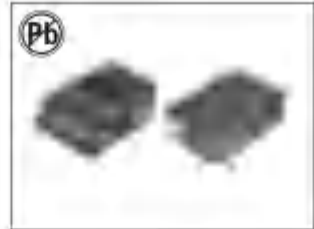
- Z test with HP4191A or HP4395A
- RDC:QuadTech 1880 Milliohm meter
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C
- Resistance to soldering heat:260°C for 10 seconds
- Marking: Part number and date code

Note:All specifications subject to change without notice.



# SURFACE-MOUNT COMMON MODE CHOKES

## SQD 75T,83T,105T,125T SERIES



### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### OPTIONS:

- Packaging: Tape & Reel is standard (Qty:2000pcs)
- Bulk packaging available for smaller quantities
- Tolerance:20% is standard, tighter tolerances available

### COMMON APPLICATIONS:

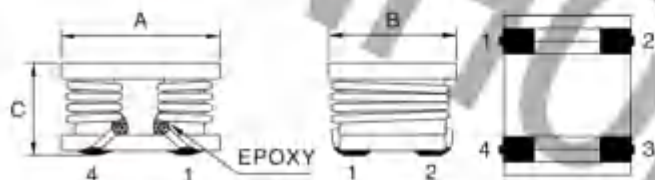
- DC/DCAC/DC converter
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems
- Computer Peripheral Equipment

### ELECTRICAL CHARACTERISTICS:

| Part Number | Common Mode Impedance@100MHz (Ω) Typical | IDC (A)Max | DGR (mΩ)Max |
|-------------|------------------------------------------|------------|-------------|
| SQD75T-601  | 600                                      | 4.0        | 15          |
| SQD75T-102  | 1000                                     | 3.0        | 17          |
| SQD75T-122  | 1200                                     | 3.0        | 25          |
| SQD75T-152  | 1500                                     | 2.0        | 40          |
| SQD83T-501  | 500                                      | 3.0        | 18          |
| SQD83T-801  | 800                                      | 2.0        | 29          |
| SQD83T-102  | 1000                                     | 1.5        | 58          |
| SQD105T-401 | 400                                      | 7.0        | 5           |
| SQD105T-751 | 750                                      | 5.0        | 10          |
| SQD105T-102 | 1000                                     | 4.0        | 13          |
| SQD125T-901 | 900                                      | 10.0       | 10          |
| SQD125T-102 | 1000                                     | 7.0        | 15          |
| SQD125T-122 | 1200                                     | 5.0        | 25          |

Note: L, K=± 10%, M=± 20%, N=± 30%

### TECHNICAL INFORMATION:

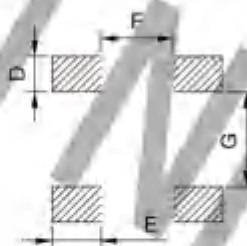


- Inductance Testing: 1KHz 1V HP4284A
- Z test with HP4191A or HP4395A
- RDC: QuadTech 1880 Milliohmmefer
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C
- Resistance to soldering heat:260°C for 10 seconds
- Marking: Part number and date code

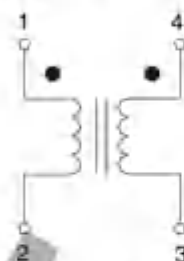
Note: All specifications subject to change without notice.

### PHYSICAL CHARACTERISTICS:

#### LAND PATTERNS



#### DIMENSIONS IN:mm



| Type    | A          | B          | C         | D   | E   | F   | G   |
|---------|------------|------------|-----------|-----|-----|-----|-----|
| SQD75T  | 7.5 ± 0.3  | 8.8 ± 0.3  | 5.0 ± 0.3 | 2.0 | 2.8 | 2.6 | 1.4 |
| SQD83T  | 8.0 Max    | 6.5 Max    | 3.5 Max   | 2.0 | 2.0 | 2.0 | 2.6 |
| SQD105T | 10.5 Max   | 8.5 Max    | 5.5 Max   | 2.1 | 2.4 | 2.9 | 3.9 |
| SQD125T | 12.0 ± 0.3 | 10.0 ± 0.3 | 4.5 ± 0.3 | 2.6 | 3.0 | 3.0 | 4.4 |

## SURFACE-MOUNT COMMON MODE CHOKES

### SQD 1211 SERIES

#### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

#### APPLICATIONS:

- DC/DCAC/DC converter
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems



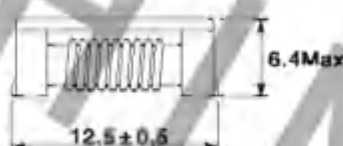
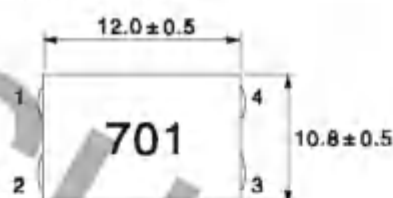
#### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance@100MHz |        | DCR (mΩ)Max | IDC (A)Max |
|-------------|------------------|--------|-------------|------------|
|             | (Ω)Min           | (Ω)Typ |             |            |
| SQD1211-800 | 80               | 230    | 2.0         | 10.0       |
| SQD1211-701 | 500              | 700    | 6.0         | 8.0        |
| SQD1211-801 | 600              | 800    | 8.0         | 8.0        |
| SQD1211-102 | 750              | 1000   | 14.0        | 6.0        |
| SQD1211-222 | 2200             | 2500   | 35.0        | 1.8        |
| SQD1211-272 | 2300             | 2700   | 50.0        | 1.5        |

#### PHYSICAL CHARACTERISTICS:

#### WINDING:

DIMENSIONS IN:mm



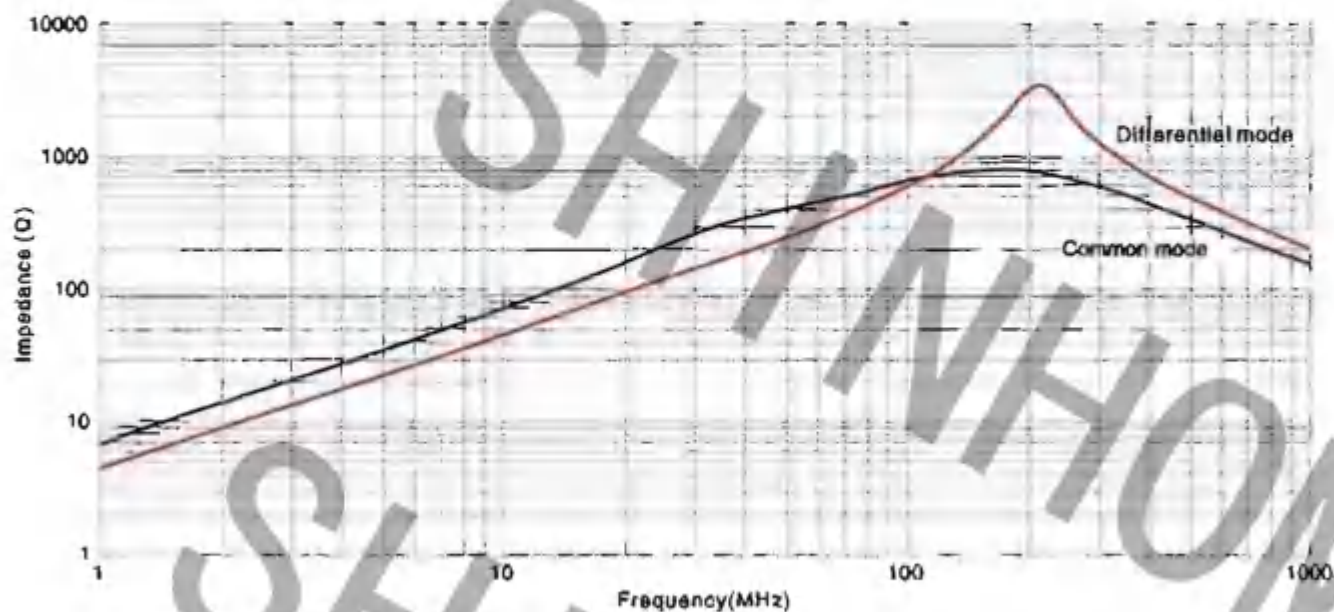
LAND PATTERNS



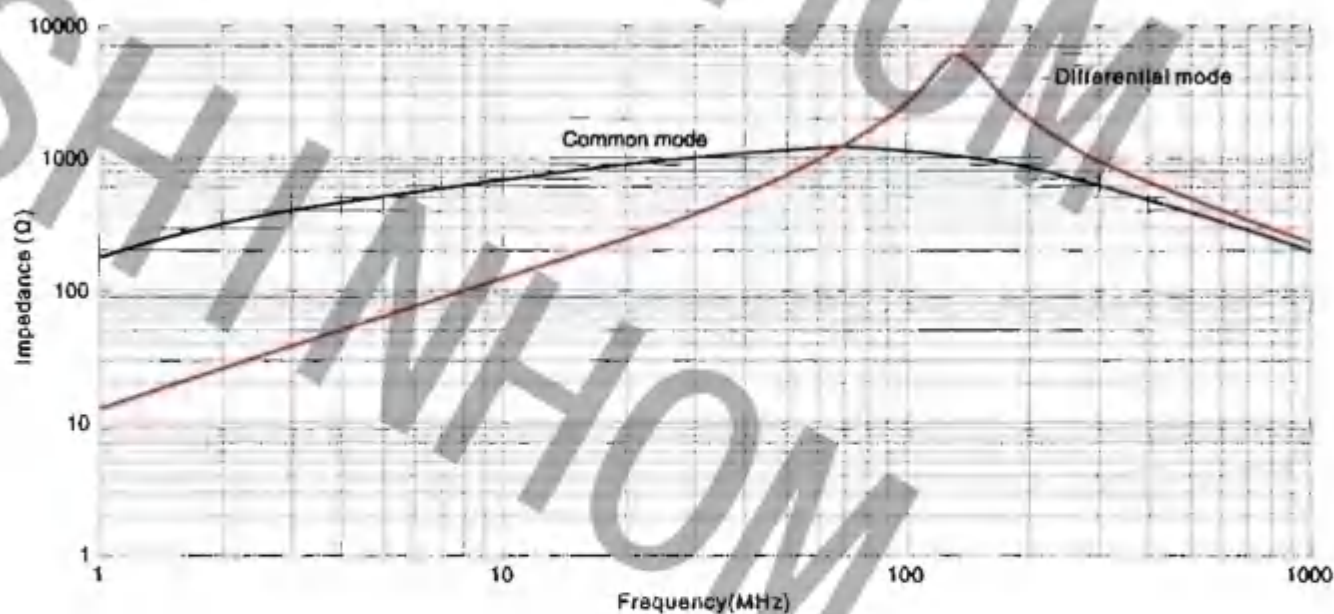
- Impedance test with HP4191A or HP4395A
- RDC:QuadTech 1880 Milliohm meter
- Rated voltage: 125V Max
- Insulation resistance: 10MΩ Min
- Operating temperature: -40°C to +125°C
- Storage Temperature: -40°C to +125°C
- Packing: 500Pcs/Reel/Bag  
1000Pcs/Box  
5000Pcs/Carton

## SURFACE-MOUNT COMMON MODE CHOKES

SQD1211-701



SQD1211-102



## SURFACE-MOUNT COMMON MODE CHOKES

### SQD 1513 SERIES

#### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

#### APPLICATIONS:

- DC/DCAC/DC converter
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems



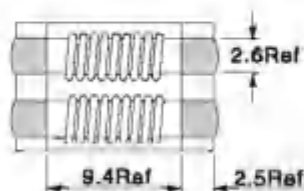
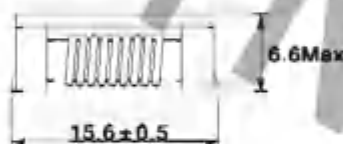
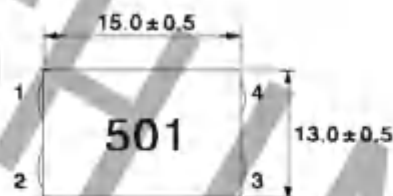
#### ELECTRICAL CHARACTERISTICS:

| Part Number  | Impedance@100MHz |        | DCR (mΩ)Max | IDC (A)Max |
|--------------|------------------|--------|-------------|------------|
|              | (Ω)Min           | (Ω)Typ |             |            |
| SQD1513-301H | 225              | 300    | 4.0         | 15.0       |
| SQD1513-301  | 225              | 300    | 5.0         | 13.0       |
| SQD1513-551H | 400              | 550    | 5.0         | 12.0       |
| SQD1513-551  | 400              | 550    | 6.0         | 10.0       |
| SQD1513-501  | 400              | 500    | 6.0         | 10.0       |
| SQD1513-601  | 500              | 600    | 7.0         | 10.0       |
| SQD1513-701  | 500              | 700    | 7.0         | 10.0       |
| SQD1513-102  | 800              | 1000   | 10.0        | 9.0        |
| SQD1513-152  | 1200             | 1500   | 23.0        | 5.0        |

#### PHYSICAL CHARACTERISTICS:

#### WINDING:

DIMENSIONS IN:mm



LAND PATTERNS

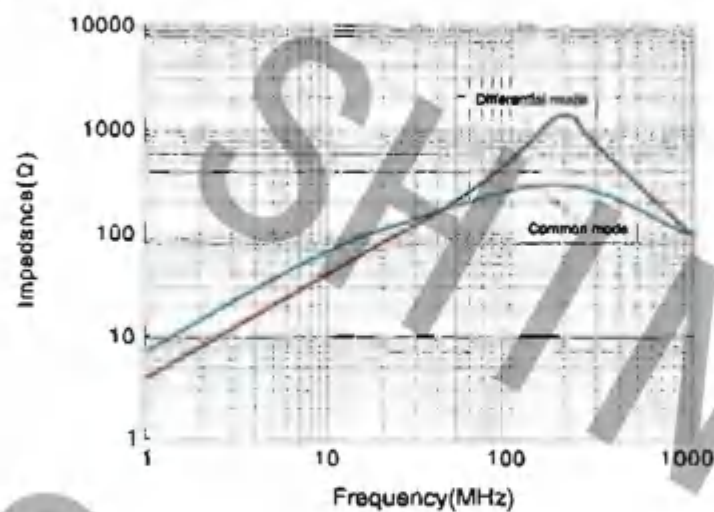


- Impedance test with HP4191A or HP4395A
- RDC:QuadTech 1880 Milliohm meter
- Rated voltage: 80V Max
- Insulation resistance: 10MΩ Min
- Operating temperature: -40℃ to +125℃
- Storage Temperature: -40℃ to +125℃
- Packing: 350Pcs/Reel  
700Pcs/Bag/Box  
3500Pcs/Cartron

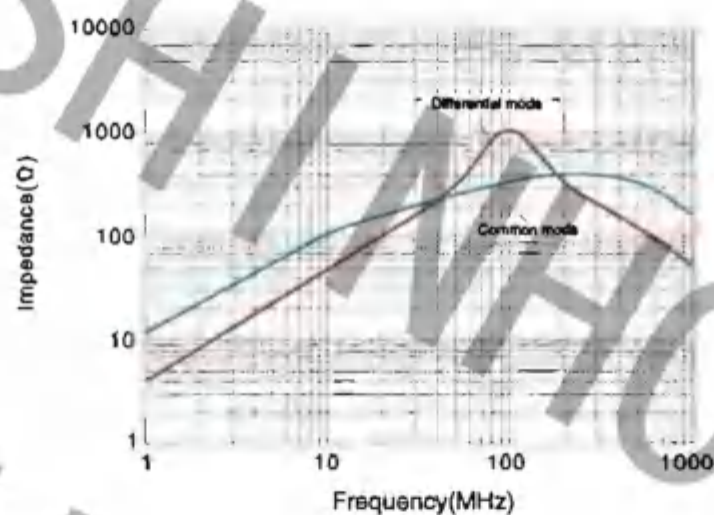


## SURFACE-MOUNT COMMON MODE CHOKES

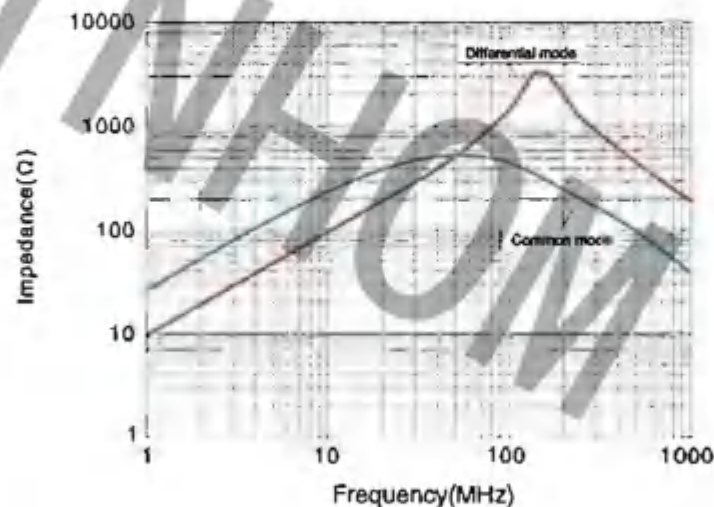
SQD1513-301H



SQD1513-301

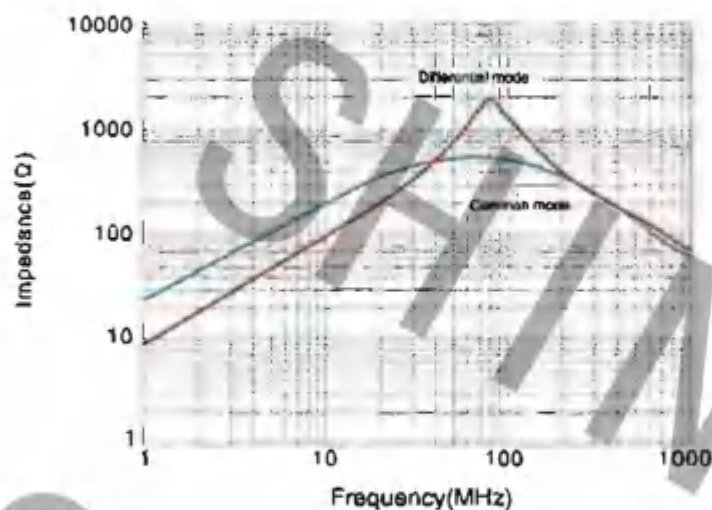


SQD1513-551H

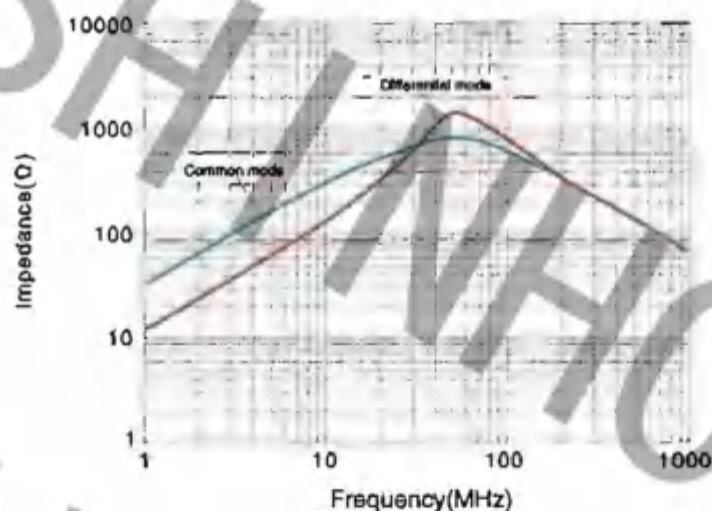


## SURFACE-MOUNT COMMON MODE CHOKES

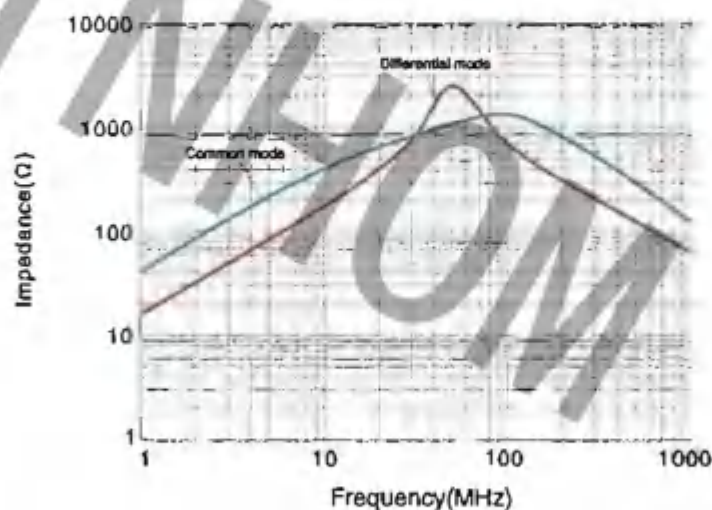
SQD1513-551



SQD1513-701

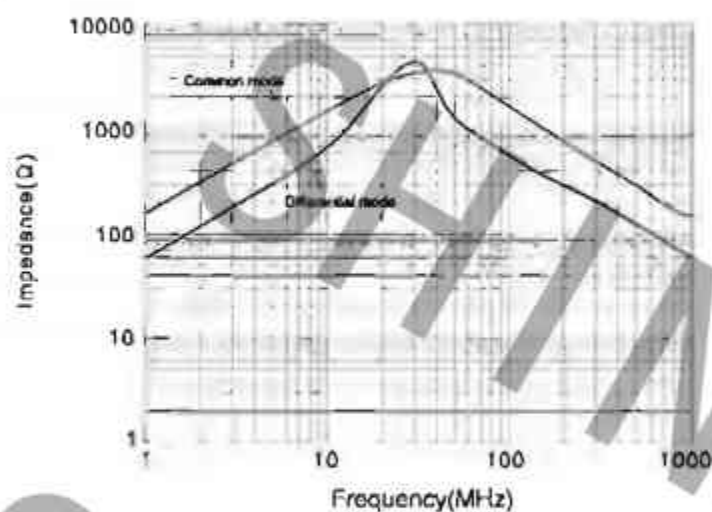


SQD1513-102



## SURFACE-MOUNT COMMON MODE CHOKES

SQD1513-152



## COMMON MODE CHOKE COILS FOR DC POWER LINE

### SQD 3225, 4532 SERIES

#### FEATURES:

- A chip-type common mode filter for large current applications. Common mode impedance surpasses 300 to 1000Ω at 100MHz. Noise is greatly suppressed.
- Capable of handling the highest current (up to 10A) of any chip-type common mode filter.
- Height and size have been considered, resulting in a compact and light-weight snub coil. Applicable for the miniaturization required to reduce the size and weight of portable equipment.
- The products contain no lead and also support lead-free soldering.
- This product does not contain regulated substances that are stated to be included in RoHS.

#### APPLICATIONS:

- Used for power line noise suppression for any electronic devices. Used to counter electromagnetic line noise for relatively large electronic devices such as notebook PCs, stand-alone word processors, etc.



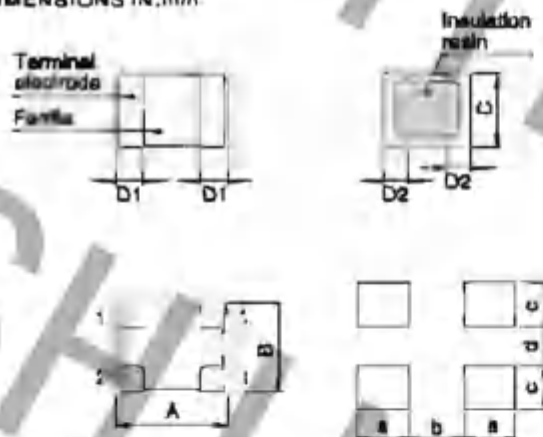
#### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance @ 100MHz<br>(Common mode test) |        | DCR<br>(mΩ)Max | Rated current<br>(A)Max | Rated voltage<br>(VDC)Max | Insulation resistance<br>(MΩ)Min |
|-------------|------------------------------------------|--------|----------------|-------------------------|---------------------------|----------------------------------|
|             | (Ω)Min                                   | (Ω)Typ |                |                         |                           |                                  |
| SQD3225-601 | 450                                      | 600    | 200            | 1.0                     | 50                        | 10                               |
| SQD4532-801 | 450                                      | 600    | 100            | 1.5                     | 50                        | 10                               |
| SQD4532-801 | 600                                      | 800    | 100            | 1.0                     | 50                        | 10                               |

#### PHYSICAL CHARACTERISTICS:

#### WINDING:

DIMENSIONS IN:mm



LAND PATTERNS

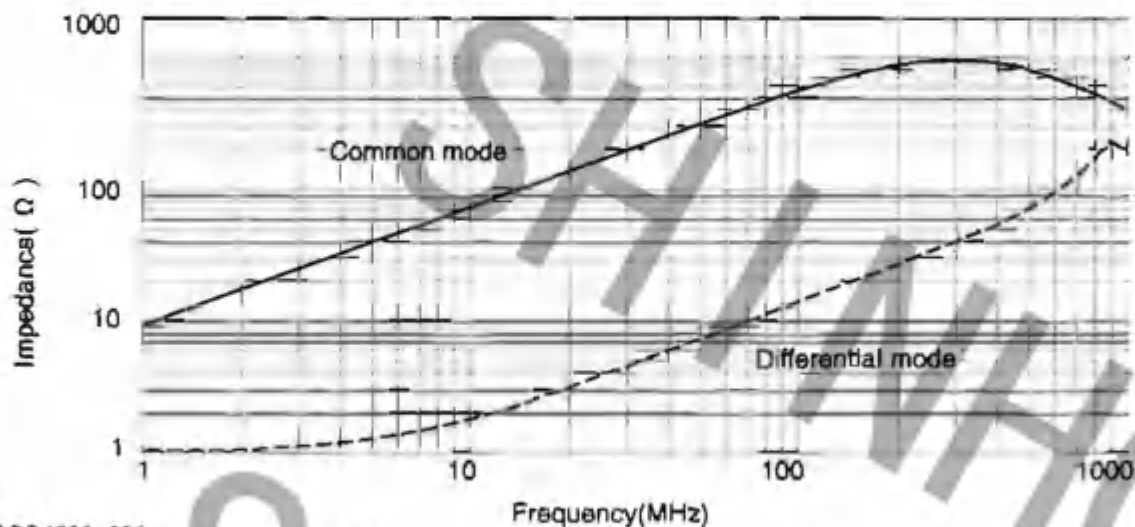
|         | A       | B       | C      | D1  | D2   | a   | b   | c    | d   |
|---------|---------|---------|--------|-----|------|-----|-----|------|-----|
| SQD3225 | 3.2±0.2 | 2.5±0.2 | 2.3Max | 0.7 | 0.85 | 1.5 | 1.6 | 1.4  | 1.1 |
| SQD4532 | 4.5±0.2 | 3.2±0.2 | 3.0Max | 1   | 1    | 1.8 | 2.3 | 1.75 | 1.1 |

- Impedance test with HP4191A or HP4395A
- DCR: QuedTech 1680 Milliohmmeter
- Insulation resistance: 10MΩ Min
- Operating temperature: -40°C to +125°C
- Storage Temperature: -40°C to +125°C
- Packing: SQD3225: φ 180mm, 1000Pcs/Reel  
φ 330mm, 5000Pcs/Reel  
SQD4532: φ 180mm, 500Pcs/Reel  
φ 330mm, 2000Pcs/Reel

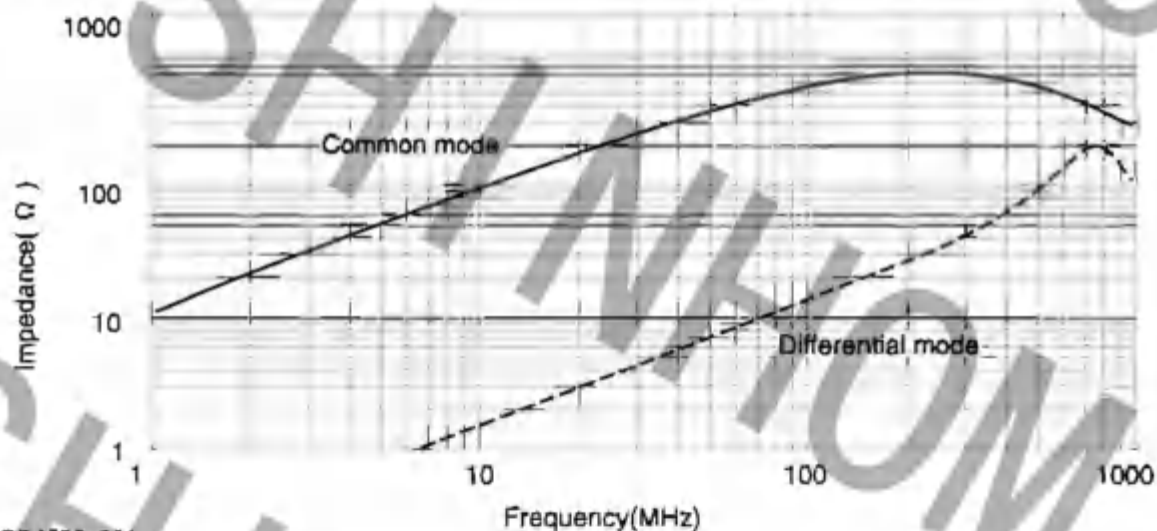


## COMMON MODE CHOKE COILS FOR DC POWER LINE

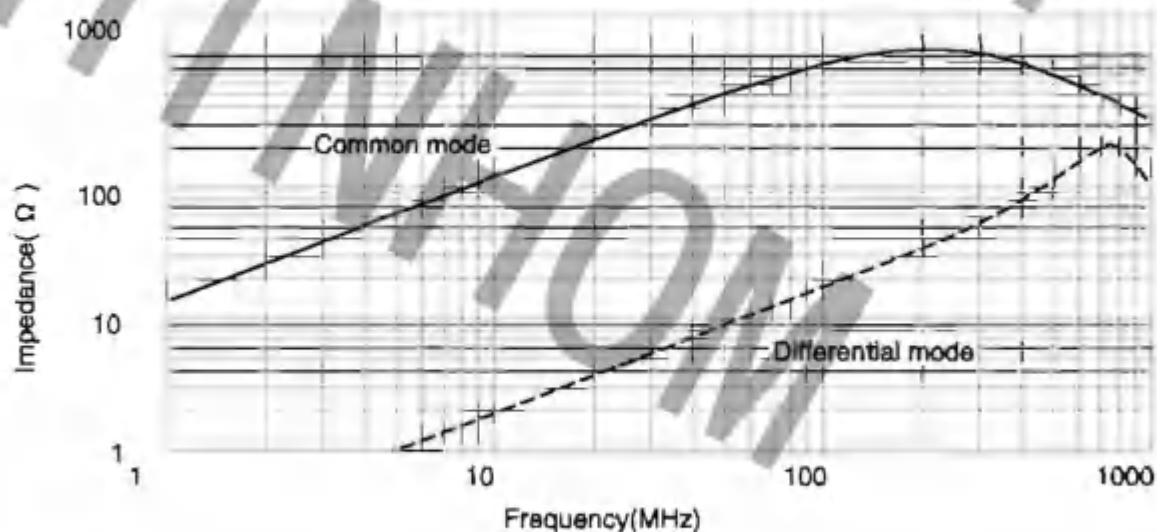
SQD3225-601



SQD4532-801



SQD4532-801



## SURFACE-MOUNT COMMON MODE CHOKES

### SQD 7060, 9070 SERIES

#### FEATURES:

- Chip common mode filter for large current applications. There is excellent common mode impedance and noise suppression in a compact case.
- Compatible with high-density portable devices, which are always being made smaller and lighter, because the height has been reduced.

#### APPLICATIONS:

- Power line noise countermeasure for various electronic equipment.
- Noise countermeasure for adapter lines and battery lines or larger electronic equipment such as note book PCs and word processors.



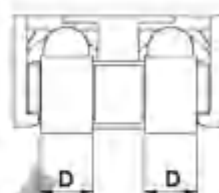
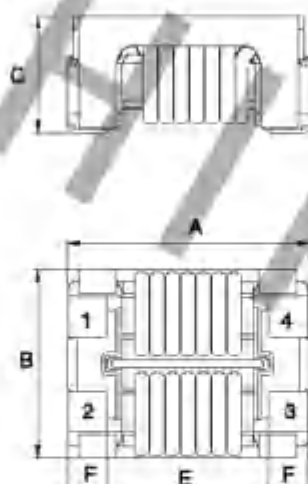
#### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance @ 100MHz<br>(Common mode test) |        | DCR<br>(1 line)<br>(mΩ)Max | Rated current<br>(A)Max | Rated voltage<br>(VDC)Max | Insulation resistance<br>(MΩ)Min |
|-------------|------------------------------------------|--------|----------------------------|-------------------------|---------------------------|----------------------------------|
|             | (Ω)Min                                   | (Ω)Typ |                            |                         |                           |                                  |
| SQD7060-400 | 40                                       | 70     | 5                          | 15                      | 125                       | 10                               |
| SQD7060-101 | 100                                      | 140    | 10                         | 9                       | 125                       | 10                               |
| SQD7060-301 | 225                                      | 300    | 10                         | 5                       | 125                       | 10                               |
| SQD7060-701 | 500                                      | 700    | 15                         | 4                       | 125                       | 10                               |
| SQD7060-102 | 800                                      | 1020   | 17                         | 3                       | 125                       | 10                               |
| SQD7060-132 | 910                                      | 1300   | 21                         | 2.5                     | 125                       | 10                               |
| SQD9070-301 | 225                                      | 300    | 6                          | 6                       | 80                        | 10                               |
| SQD9070-601 | 450                                      | 600    | 8                          | 6                       | 80                        | 10                               |
| SQD9070-701 | 500                                      | 700    | 10                         | 5                       | 80                        | 10                               |
| SQD9070-102 | 750                                      | 1000   | 13                         | 4                       | 80                        | 10                               |
| SQD9070-272 | 2000                                     | 2700   | 88                         | 2                       | 80                        | 10                               |

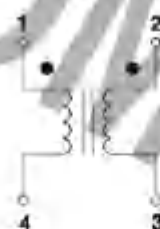
#### PHYSICAL CHARACTERISTICS:

#### WINDING:

DIMENSIONS IN:mm



LAND PATTERNS

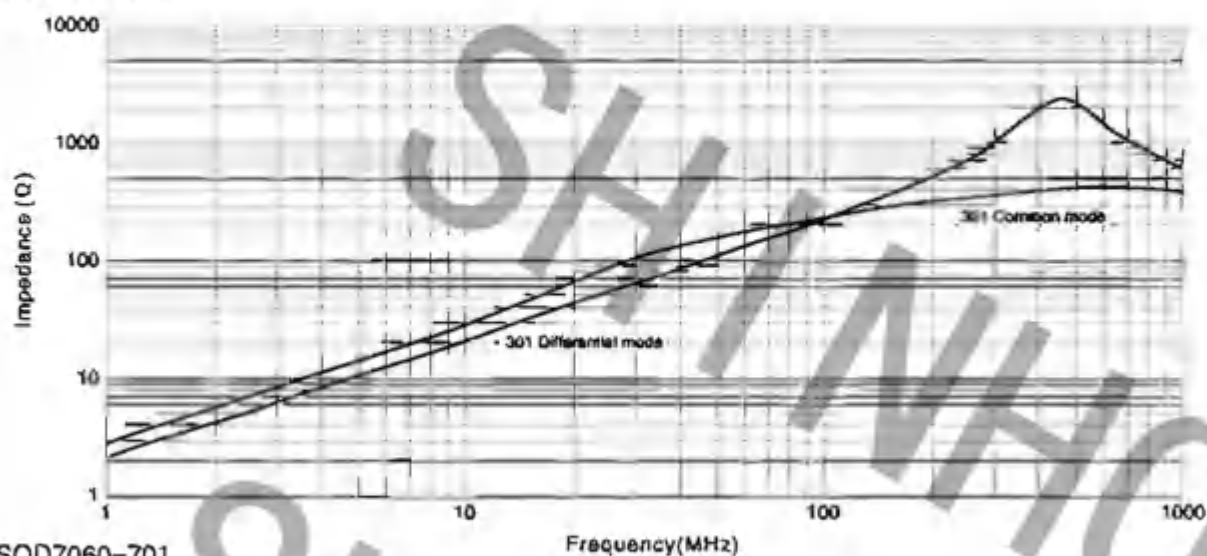


- Impedance test with HP4191A or HP4385A
- RDC:QuadTech 1880 Milliohm meter
- Insulation resistance: 10MΩ Min
- Operating temperature: -40°C to +125°C
- Storage Temperature: -40°C to +125°C
- Packing: 1500Pcs/Reel(SQD7060)  
800Pcs/Reel(SQD9070)

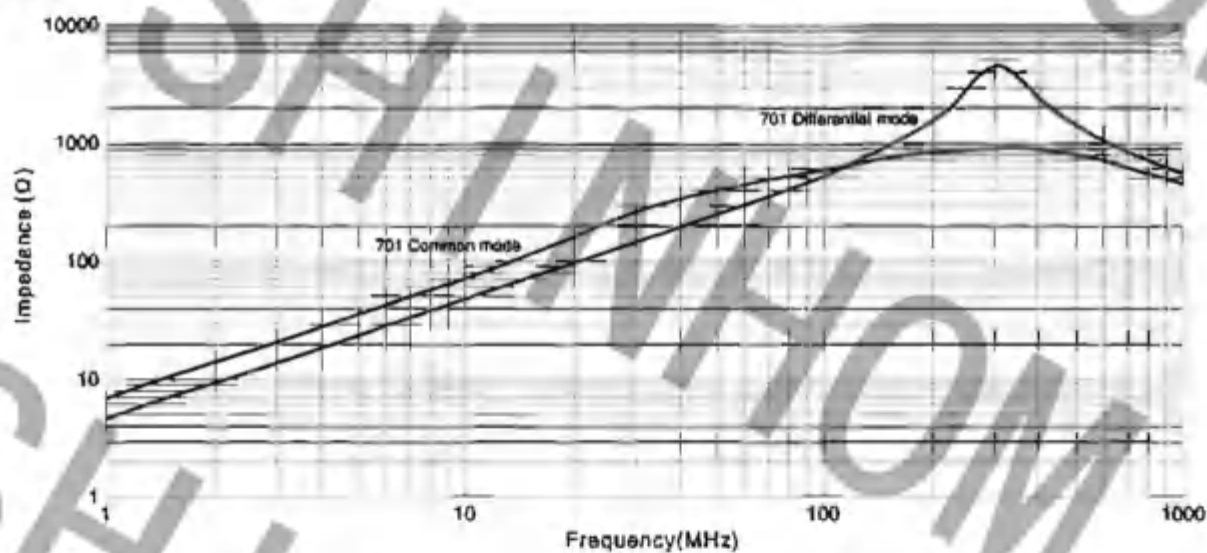
|         | A       | B       | C      | D       | E      | F       | G   | H   | J   | K   |
|---------|---------|---------|--------|---------|--------|---------|-----|-----|-----|-----|
| SQD7060 | 7.0±0.2 | 8.0±0.2 | 3.6Max | 1.5±0.5 | 4.0typ | 1.5±0.5 | 4.0 | 1.5 | 2.5 | 1.5 |
| SQD9070 | 9.0±0.2 | 7.0±0.2 | 4.8Max | 1.5±0.5 | 6.0typ | 1.5±0.5 | 6.0 | 1.5 | 2.5 | 2.0 |

# SURFACE-MOUNT COMMON MODE CHOKES

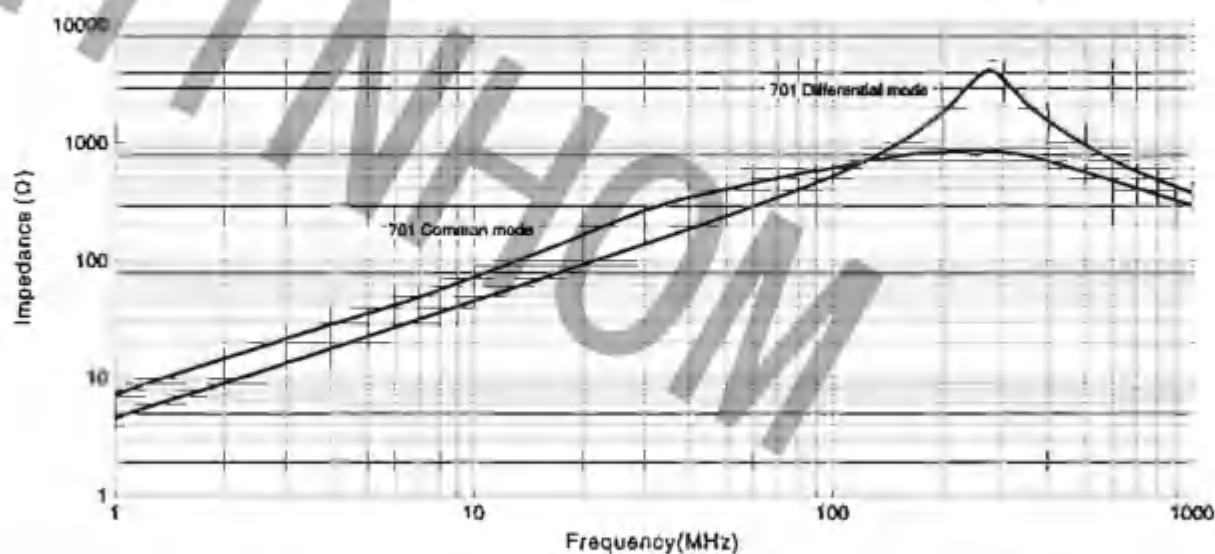
SQD7060-301



SQD7060-701



SQD9070-701



## SURFACE-MOUNT COMMON MODE CHOKES SQD 4520 SERIES

### FEATURES:

- Ferrite Core bobbin construction
- High frequency and Large current
- Excellent Mechanical Strength
- Excellent Solderability
- Excellent Frequency performance
- Low Profile and Low cost

### APPLICATIONS:

- DC/DCAC/DC convertor
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems



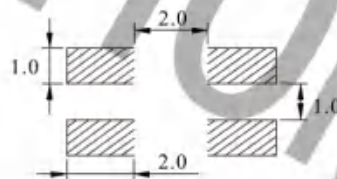
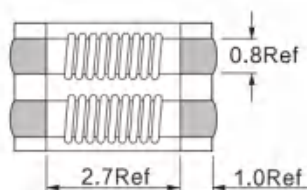
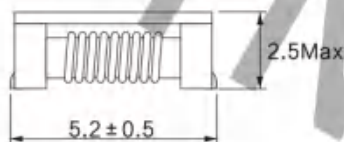
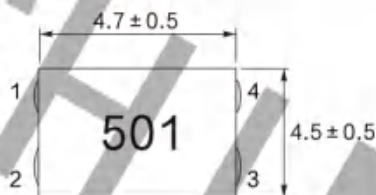
### ELECTRICAL CHARACTERISTICS:

| Part Number | Impedance@100MHz |        | DCR (mΩ)Max | Rated current (A)Max | Rated voltage (V)Max |
|-------------|------------------|--------|-------------|----------------------|----------------------|
|             | (Ω)Min           | (Ω)Typ |             |                      |                      |
| SQD4520-900 | 60               | 90     | 35          | 3.2                  | 50                   |
| SQD4520-151 | 90               | 150    | 40          | 3.2                  | 50                   |
| SQD4520-231 | 180              | 230    | 45          | 3.0                  | 50                   |
| SQD4520-301 | 200              | 300    | 45          | 3.0                  | 50                   |
| SQD4520-381 | 250              | 380    | 50          | 2.5                  | 50                   |
| SQD4520-421 | 300              | 420    | 50          | 2.5                  | 50                   |
| SQD4520-501 | 350              | 500    | 55          | 2.4                  | 50                   |
| SQD4520-701 | 500              | 700    | 58          | 2.2                  | 50                   |
| SQD4520-901 | 650              | 900    | 60          | 2.1                  | 50                   |
| SQD4520-102 | 800              | 1000   | 60          | 2.1                  | 50                   |
| SQD4520-122 | 1000             | 1200   | 70          | 2.0                  | 50                   |
| SQD4520-142 | 1200             | 1400   | 80          | 1.9                  | 50                   |

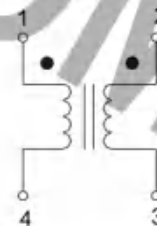
### PHYSICAL CHARACTERISTICS:

### WINDING:

DIMENSIONS IN:mm



LAND PATTERNS



- Impedance test with HP4191A or HP4395A
- RDC:QuadTech 1880 Milliohm meter
- Insulation resistance: 10MΩ Min
- Operating temperature: -40°C to +125°C
- Storage Temperature: -40°C to +125°C





## SMD Flat Common Mode Chokes

### SQS1010A SERIES

#### FEATURES:

- Compact size, low DCR, low leakage due to square core
- High permeability material, High impedance at low frequency
- High attenuation to noise, due to low stray capacitance
- Flammability tested to UL94V-0
- High insulation resistance
- Low cost, high consistency with automated production
- RoHS, REACH compliance

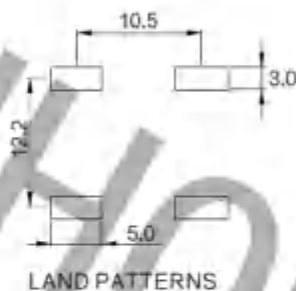
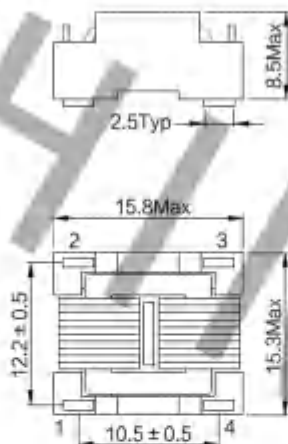
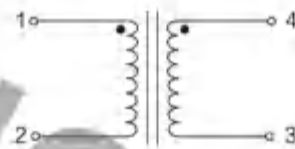
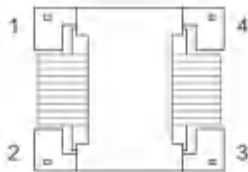
#### APPLICATION:

- Solutions for use in a wide array of power supply circuits
- High density switching mode power supply devices
- Ideal for use in consumer electronics and industrial applications:  
LCD TV, Battery chargers, Power Adapter, Home appliances
- Space saving for existing Common Mode Chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number  | Inductance Min. (mH) | DCR Max. (mΩ) | Rated current (A) | Wire    | Turns Ref. |
|--------------|----------------------|---------------|-------------------|---------|------------|
| SQS1010A-001 | 10                   | 200           | 0.8-1.2           | 0.1*0.7 | 37         |
| SQS1010A-002 | 10                   | 200           | 1.0-1.5           | 0.1*1.0 | 37         |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



#### Note:

- Test frequency .....1.0KHz, 0.25V
- Rated voltage .....80Vac~265Vac
- Test voltage .....1.0KVac, 2Sec
- Operating temperature .....-25°C to +125°C (Including coil temperature rise)
- Storage temperature .....-25°C to +100°C
- Insulation resistance .....100MΩ Min @ 500Vdc
- Power range .....40W

# SMD HIGH CURRENT FLAT WIRE COMMON MODE CHOKE

## SQS1212 SERIES



### FEATURES:

- Compact size, low DCR, low leakage due to square core.
- High permeability material, High Impedance at low frequency.
- High attenuation to noises, due to low stray capacitance.
- Flammability tested to UL 94 V-0.
- Low cost, high consistency with automated production.
- RoHS, REACH compliance, Halogen free available.

### APPLICATIONS:

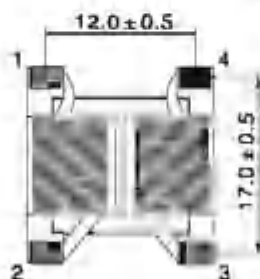
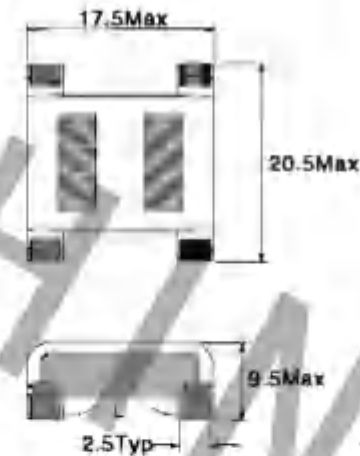
- Solutions for use in a wide array of power supply circuits.
- High duty switching mode power supply devices.
- Ideal for use in consumer electronics and industrial applications: LCD TV, Battery chargers, Power Adapter, Home appliances.
- Space saving for existing Common Mode Chokes.

### ELECTRICAL CHARACTERISTICS:

| Part Number  | Inductance (mH)Min | Common mode peak impedance (k $\Omega$ ) | Leakage Inductance (uH)Max | DCR (m $\Omega$ ) Max | Rated current (A)Max |
|--------------|--------------------|------------------------------------------|----------------------------|-----------------------|----------------------|
| SQS1212-801Y | 0.8                | 9.06 @ 3.73MHz                           | 80                         | 25                    | 3.6                  |
| SQS1212-102Y | 1.0                | 14.12 @ 2.9MHz                           | 100                        | 36                    | 3.0                  |
| SQS1212-152Y | 1.5                | 22.67 @ 2.15MHz                          | 115                        | 52                    | 2.5                  |
| SQS1212-252Y | 2.5                | 31.51 @ 2.48MHz                          | 130                        | 95                    | 1.8                  |
| SQS1212-302Y | 3.0                | 44.31 @ 2.31MHz                          | 130                        | 115                   | 1.5                  |
| SQS1212-382Y | 3.6                | 47.1 @ 1.96MHz                           | 140                        | 158                   | 1.2                  |
| SQS1212-502Y | 5.0                | 66.55 @ 1.84MHz                          | 150                        | 216                   | 1.0                  |
| SQS1212-882Y | 8.8                | 81.25 @ 1.32MHz                          | 180                        | 315                   | 0.8                  |
| SQS1212-852Y | 9.5                | 123.94 @ 0.95MHz                         | 210                        | 500                   | 0.8                  |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:

#### DIMENSIONS IN:mm

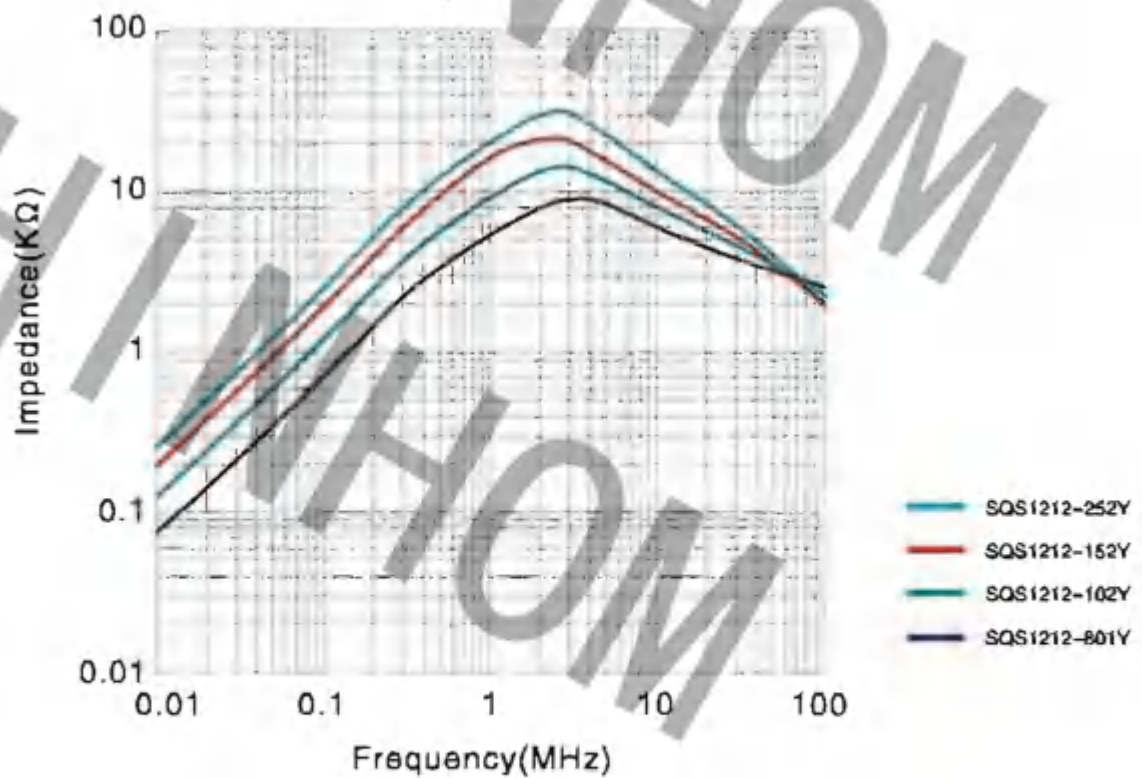
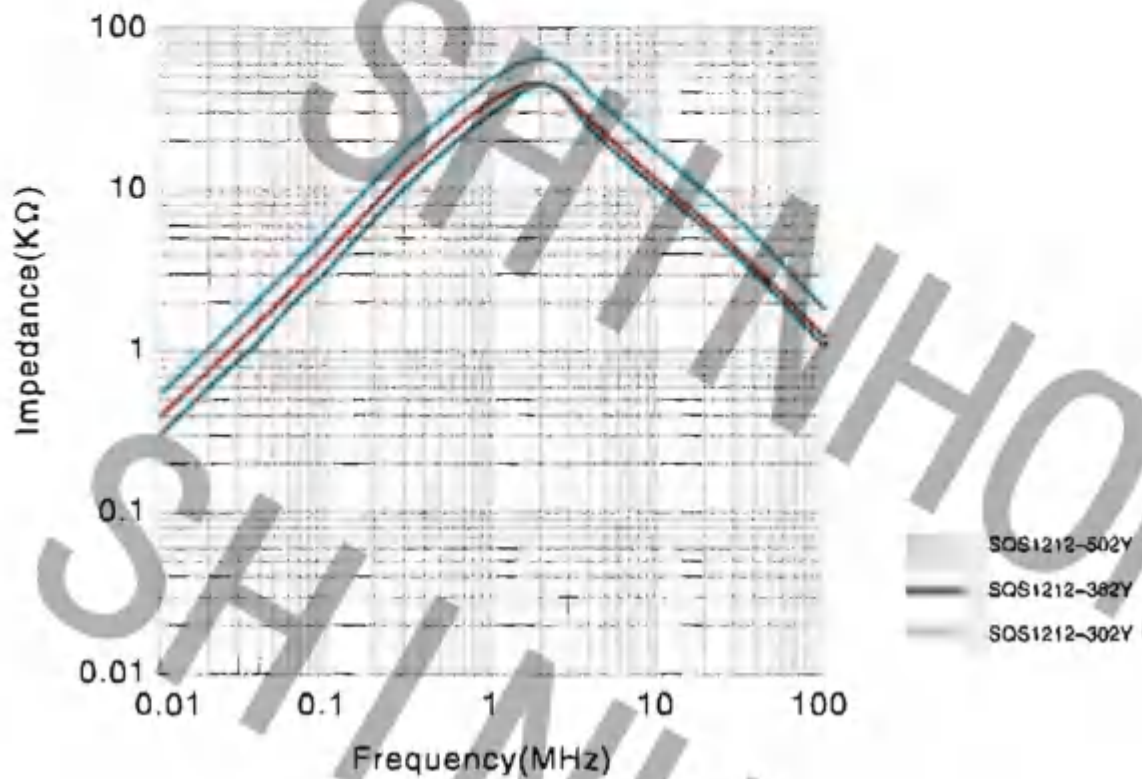


#### LAND PATTERNS



- Inductor Testing: HP4284A (Equivalent acceptable)
- DCR: QuadTech 1880 Milliohmmeter
- Rated voltage: 60VAC~250VAC
- High withstanding voltage between windings: 2400VAC /50 sec.
- High insulation resistance: 100M $\Omega$  Min @ 500VDC between windings.
- Operating temperature: -40 $^{\circ}$ C~+125 $^{\circ}$ C (Including coil temperature rise).
- Storage temperature: -40 $^{\circ}$ C~+85 $^{\circ}$ C.
- Solder methods: Vapor Phase, Infrared Reflow
- Resistance to soldering heat: 250 $^{\circ}$ C for 10 seconds
- Solvent resistance: Conforms to MIL-STD-202E

# IMPEDANCE VS FREQUENCY:







## SMD Flat Common Mode Chokes

### SQS1212A SERIES

#### FEATURES:

- Compact size, low DCR, low leakage due to square core
- High permeability material, High impedance at low frequency
- High attenuation to noise, due to low stray capacitance
- Flammability tested to UL94V-0
- High insulation resistance
- Low cost, high consistency with automated production
- RoHS, REACH compliance

#### APPLICATION:

- Solutions for use in a wide array of power supply circuits
- High density switching mode power supply devices
- Ideal for use in consumer electronics and industrial applications: LCD TV, Battery chargers, Power Adapter, Home appliances
- Space saving for existing Common Mode Chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number  | Inductance Min. (mH) | DCR Max. (mΩ) | Rated current (A) |
|--------------|----------------------|---------------|-------------------|
| SQS1212A-001 | 20                   | 220           | 1.0-1.5           |
| SQS1212A-002 | 15                   | 150           | 1.3-1.8           |
| SQS1212A-003 | 10                   | 120           | 1.5-2.0           |
| SQS1212A-004 | 8                    | 100           | 1.8-2.2           |
| SQS1212A-005 | 5                    | 80            | 3.0               |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



#### Note:

- Test frequency ..... 1.0KHz, 0.25V
- Rated voltage ..... 80Vac~265Vac
- Test voltage ..... 1.0KVac, 2Sec
- Operating temperature ..... -25°C to +125°C (Including coil temperature rise)
- Storage temperature ..... -25°C to +100°C
- Insulation resistance ..... 100MΩ Min@500Vdc
- Power range ..... 60W~150W



# SMD HIGH CURRENT FLAT WIRE COMMON MODE CHOKE

## SQS1212HP SERIES



### FEATURES:

- Compact size, low DCR, low leakage due to square core.
- High permeability material, High Impedance at low frequency.
- High attenuation to noises, due to low stray capacitance.
- Flammability tested to UL 94 V-0.
- Low cost, high consistency with automated production.
- RoHS, REACH compliance, Halogen free available.

### APPLICATIONS:

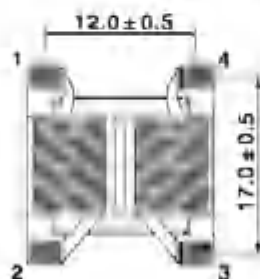
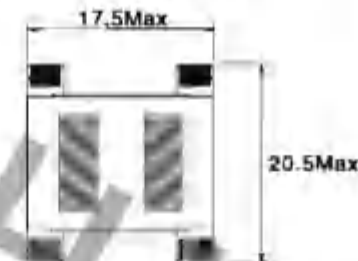
- Solutions for use in a wide array of power supply circuits.
- High duty switching mode power supply devices.
- Ideal for use in consumer electronics and industrial applications: LCD TV, Battery chargers, Power Adapter, Home appliances.
- Space saving for existing Common Mode Chokes.

### ELECTRICAL CHARACTERISTICS:

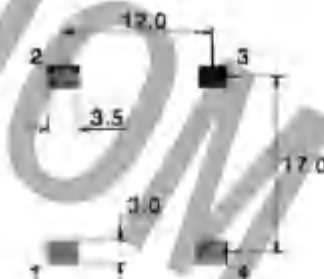
| Part Number    | Inductance (mH)Min | Common mode peak impedance (k $\Omega$ ) | Leakage Inductance (uH)Max | DCR (m $\Omega$ ) Max | Rated current (A)Max |
|----------------|--------------------|------------------------------------------|----------------------------|-----------------------|----------------------|
| SQS1212HP-182Y | 1.8                | 5.98 @ 2.65MHz                           | 120                        | 25                    | 3.6                  |
| SQS1212HP-252Y | 2.5                | 7.37 @ 2.56MHz                           | 130                        | 36                    | 3.0                  |
| SQS1212HP-362Y | 3.6                | 11.72 @ 2.34MHz                          | 140                        | 62                    | 2.5                  |
| SQS1212HP-582Y | 5.8                | 17.89 @ 2.23MHz                          | 160                        | 95                    | 1.8                  |
| SQS1212HP-702Y | 7.0                | 19.62 @ 2.15MHz                          | 200                        | 115                   | 1.5                  |
| SQS1212HP-852Y | 8.5                | 26.22 @ 2.01MHz                          | 200                        | 158                   | 1.2                  |
| SQS1212HP-123Y | 12.0               | 32.44 @ 1.55MHz                          | 230                        | 216                   | 1.0                  |
| SQS1212HP-153Y | 15.0               | 39.25 @ 1.15MHz                          | 280                        | 315                   | 0.8                  |
| SQS1212HP-223Y | 22.0               | 57.64 @ 0.85MHz                          | 360                        | 500                   | 0.6                  |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:

#### DIMENSIONS IN:mm

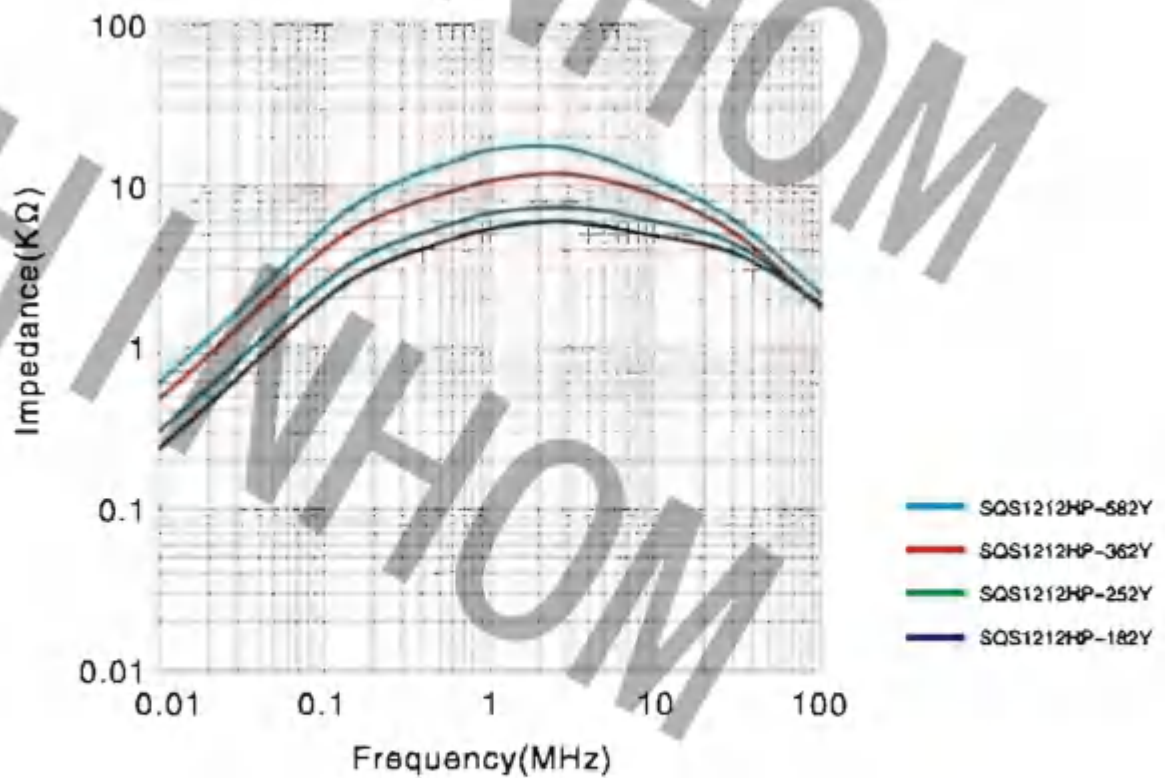
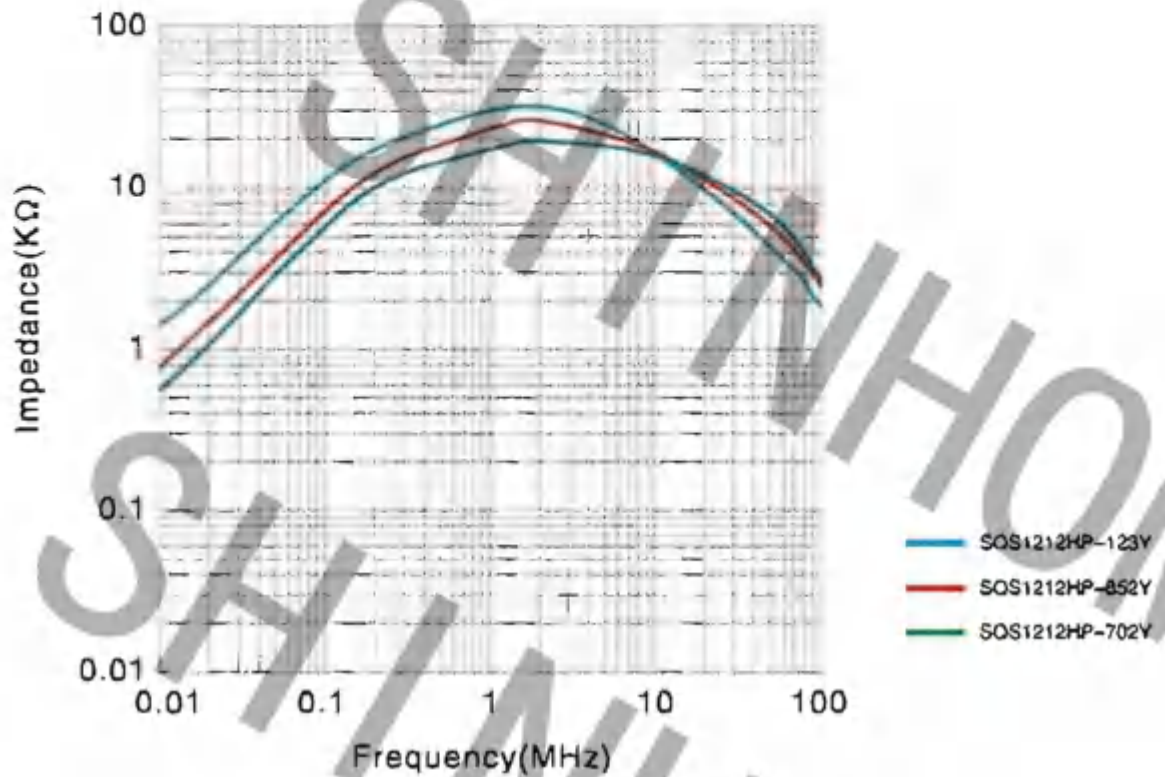


#### LAND PATTERNS



- Inductor Testing: HP4284A (Equivalent acceptable)
- DCR: QuidTech 1880 Milliohmmeter
- Rated voltage: 60VAC~250VAC
- High withstanding voltage between windings: 2400VAC /50 sec.
- High Insulation resistance: 100M $\Omega$  Min @ 500VDC between windings.
- Operating temperature: -40 $^{\circ}$ C~+125 $^{\circ}$ C (Including coil temperature rise).
- Storage temperature: -40 $^{\circ}$ C~+85 $^{\circ}$ C.
- Solder methods: Vapor Phase, Infrared Reflow
- Resistance to soldering heat: 250 $^{\circ}$ C for 10 seconds
- Solvent resistance: Conforms to MIL-STD-202E

## IMPEDANCE VS FREQUENCY:





## SMD Flat Common Mode Chokes

### SQS1515A SERIES

#### FEATURES:

- Compact size, low DCR, low leakage due to square core
- High permeability material, High impedance at low frequency
- High attenuation to noise, due to low stray capacitance
- Flammability tested to UL94V-0
- High withstanding voltage between winding
- High insulation resistance
- Low cost, high consistency with automated production
- RoHS, REACH compliance

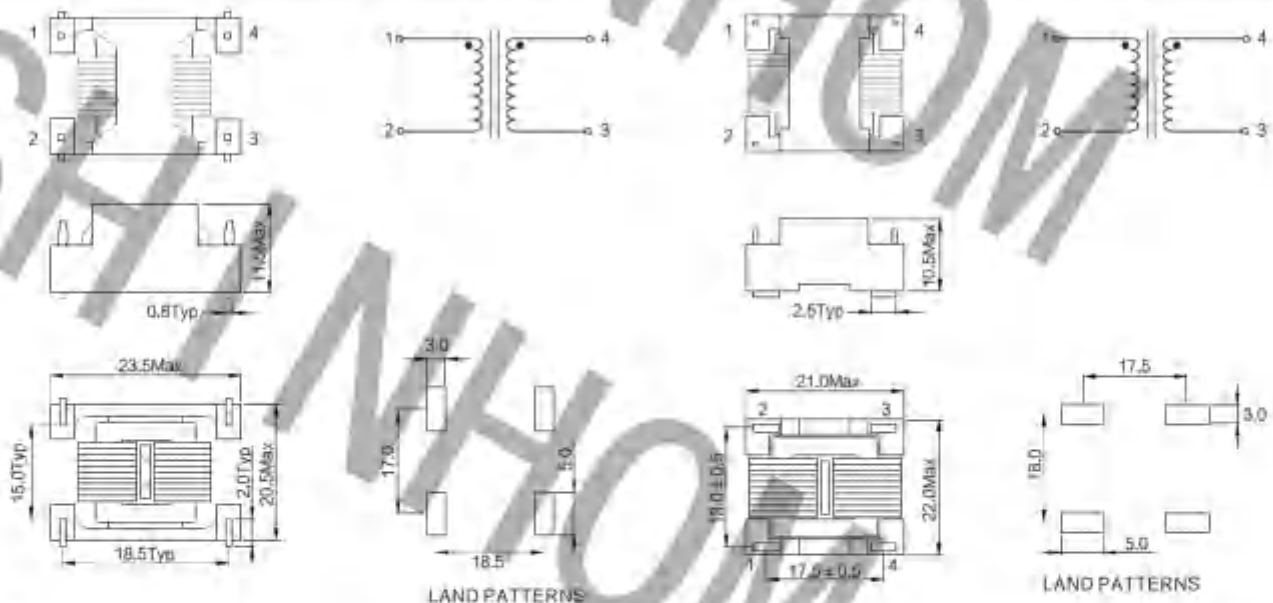
#### APPLICATION:

- Solutions for use in a wide array of power supply circuits
- High density switching mode power supply devices
- Ideal for use in consumer electronics and industrial applications: LCD TV, Battery chargers, Power Adapter, Home appliances
- Space saving for existing Common Mode Chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number  | Inductance Min. (mH) | DCR Max. (mΩ) | Rated current (A) |
|--------------|----------------------|---------------|-------------------|
| SQS1515A-001 | 20.0                 | 250           | 1.5-2.0           |
| SQS1515A-002 | 15.0                 | 200           | 1.8-2.2           |
| SQS1515A-003 | 15.0                 | 180           | 2.0-2.8           |
| SQS1515A-004 | 10.0                 | 150           | 2.0-2.5           |
| SQS1515A-005 | 10.0                 | 80            | 2.5-3.0           |
| SQS1515A-006 | 5.0                  | 80            | 2.5-3.5           |
| SQS1515A-007 | 3.0                  | 70            | 3.5-4.5           |
| SQS1515A-008 | 2.0                  | 60            | 5.0-5.0           |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



#### Note:

- Test frequency ..... 1.0KHz, 0.25V
- Rated voltage ..... 80Vac-265Vac
- Test voltage ..... 1.0KVac, 2Sec
- Operating temperature ..... -25°C to +125°C (Including coil temperature rise)
- Storage temperature ..... -25°C to +100°C
- Insulation resistance ..... 100MΩ Min @ 500Vdc
- Power range ..... 60W-200W



## SMD Flat Common Mode Chokes

### SQS1515B SERIES

#### FEATURES:

- Compact size, low DCR, low leakage due to square core
- High permeability material, High impedance at low frequency
- High attenuation to noise, due to low stray capacitance
- Flammability tested to UL94V-0
- High withstanding voltage between winding
- High insulation resistance
- Low cost, high consistency with automated production
- RoHS, REACH compliance

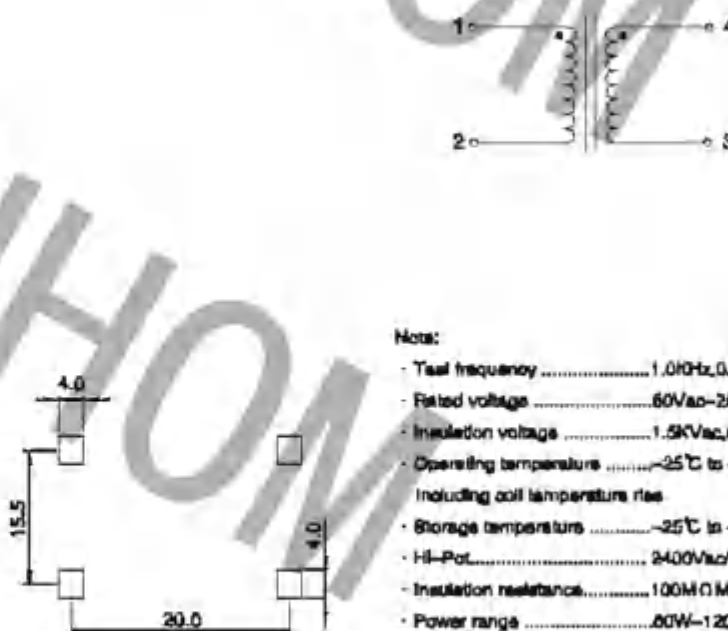
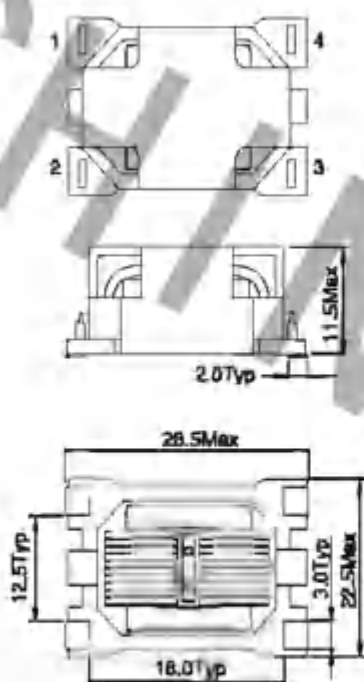
#### APPLICATION:

- Solutions for use in a wide array of power supply circuits
- High density switching mode power supply devices
- Ideal for use in consumer electronics and Industrial applications:  
LCD TV, Battery chargers, Power Adapter, Home appliances
- Space saving for existing Common Mode Chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number       | Inductance Min. (mH) | DCR Max. (mΩ) | Rated current (A) |
|-------------------|----------------------|---------------|-------------------|
| SQS1515B-203-1.5A | 20.0                 | 250           | 1.5-2.0           |
| SQS1515B-153-1.8A | 15.0                 | 200           | 1.8-2.2           |
| SQS1515B-153-2.0A | 15.0                 | 180           | 2.0-2.8           |
| SQS1515B-103-2.0A | 10.0                 | 150           | 2.0-2.5           |
| SQS1515B-103-2.5A | 10.0                 | 80            | 2.5-3.0           |
| SQS1515B-502-2.5A | 5.0                  | 80            | 2.5-3.5           |
| SQS1515B-302-3.5A | 3.0                  | 70            | 3.5-4.5           |
| SQS1515B-202-5.0A | 2.0                  | 60            | 5.0-5.0           |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



#### Notes:

- Test frequency ..... 1.0kHz, 0.25V
- Rated voltage ..... 60Vac~280Vac
- Insulation voltage ..... 1.5kVac, 60Sec
- Operating temperature ..... -25°C to +125°C  
Including coil temperature rise
- Storage temperature ..... -25°C to +100°C
- Hi-Pot ..... 2400Vac/60Sec
- Insulation resistance ..... 100MΩ Min @ 500Vdc
- Power range ..... 60W~120W

#### LAND PATTERNS





## SMD Flat Common Mode Chokes

### SQS1515C SERIES

#### FEATURES:

- Compact size, low DCR, low leakage due to square core
- High permeability material, High impedance at low frequency
- High attenuation to noise, due to low stray capacitance
- Flammability tested to UL94V-0
- High withstanding voltage between winding
- High insulation resistance
- Low cost, high consistency with automated production
- RoHS, REACH compliance

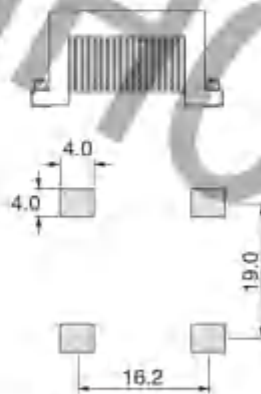
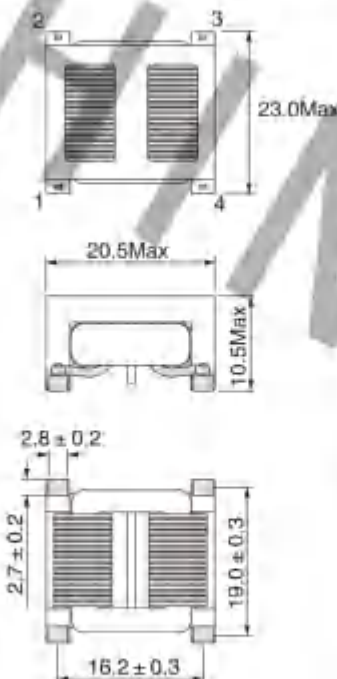
#### APPLICATION:

- Solutions for use in a wide array of power supply circuits
- High density switching mode power supply devices
- Ideal for use in consumer electronics and industrial applications: LCD TV, Battery chargers, Power Adapter, Home appliances
- Space saving for existing Common Mode Chokes

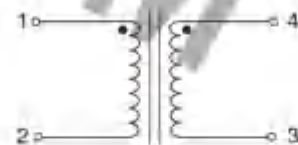
#### ELECTRICAL CHARACTERISTICS:

| Part Number  | Inductance Min. (mH) | DCR Max. (mΩ) | Rated current (A) | Wire (mm) | Turns | Power (W) |
|--------------|----------------------|---------------|-------------------|-----------|-------|-----------|
| SQS1515C-001 | 20-40                | 300           | 1.0-1.5           | 0.1*1.0   | 57    | 30-60     |
| SQS1515C-002 | 15-30                | 220           | 1.3-1.8           | 0.13*1.0  | 56    | 30-60     |
| SQS1515C-003 | 13-25                | 180           | 1.5-2.0           | 0.15*1.0  | 50    | 30-60     |
| SQS1515C-004 | 13-25                | 160           | 1.8-2.5           | 0.15*1.2  | 50    | 65-80     |
| SQS1515C-005 | 10-25                | 140           | 2.0-3.0           | 0.15*1.5  | 50    | 65-120    |
| SQS1515C-006 | 5-15                 | 140           | 2.0-2.5           | 0.2*1.0   | 40    | 60-80     |
| SQS1515C-007 | 5-15                 | 80            | 2.5-3.0           | 0.2*1.5   | 40    | 80-150    |
| SQS1515C-008 | 4-10                 | 100           | 2.0-2.5           | 0.25*1.0  | 33    | 80-150    |
| SQS1515C-009 | 4-10                 | 80            | 3.5-4.5           | 0.25*1.5  | 33    | 80-200    |
| SQS1515C-010 | 2-5                  | 60            | 3.0-3.8           | 0.3*1.2   | 27    | 80-200    |
| SQS1515C-011 | 2-5                  | 50            | 4.0-5.0           | 0.3*1.5   | 27    | 80-200    |
| SQS1515C-012 | 1-4                  | 40            | 5.0-6.0           | 0.35*1.5  | 24    | 80-200    |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



LAND PATTERNS



#### Note:

- Test frequency .....1.0KHz, 0.25V
- Rated voltage .....90Vac~250Vac
- Operating temperature .....-25°C to +125°C  
Including coil temperature rise
- Storage temperature .....-25°C to +100°C
- Hi-Pot .....1500Vac/60Sec
- Insulation resistance .....100MΩ Min @ 500Vdc
- Power range .....30W~200W



## SMD Flat Common Mode Chokes

### SQS1918 SERIES

#### FEATURES:

- Compact size, low DCR, low leakage due to square core
- High permeability material, High impedance at low frequency
- High attenuation to noise, due to low stray capacitance
- Flammability tested to UL94V-0
- High withstanding voltage between winding
- High insulation resistance
- Low cost, high consistency with automated production
- RoHS, REACH compliance

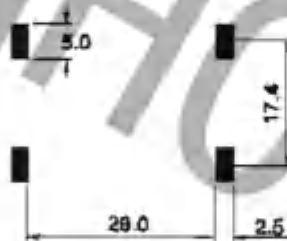
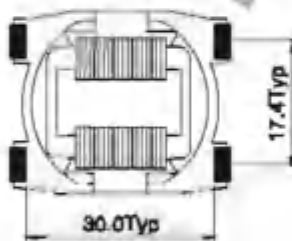
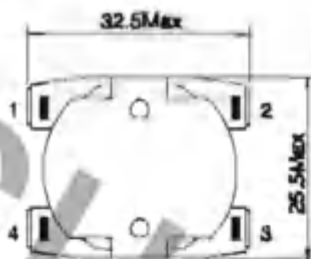
#### APPLICATION:

- Solutions for use in a wide array of power supply circuits
- High density switching mode power supply devices
- Ideal for use in consumer electronics and industrial applications: LCD TV, Battery chargers, Power Adapter, Home appliances
- Space saving for existing Common Mode Chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number      | Inductance Min. (mH) | DCR Max. (mΩ) | Rated current (A) |
|------------------|----------------------|---------------|-------------------|
| SQS1918-602-3.0A | 6.0                  | 100           | 3.0               |
| SQS1918-123-2.0A | 12.0                 | 115           | 2.0               |
| SQS1918-225-1.5A | 22.0                 | 150           | 1.5               |

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



LAND PATTERNB



#### Note:

- Test frequency .....1.0MHz, 0.25V
- Rated voltage .....80Vdc~280Vdc
- Insulation voltage .....1.5KVdc, 60Sec
- Operating temperature .....-25°C to +125°C  
Including coil temperature rise
- Storage temperature .....-25°C to +100°C
- HI-Pot .....2400Vdc/60Sec
- Insulation resistance .....100MΩ Min @ 500Vdc



## SMD Flat Common Mode Chokes

## SQS1918A SERIES

### FEATURES:

- Compact size, low DCR, low leakage due to square core
- High permeability material, High impedance at low frequency
- High attenuation to noise, due to low stray capacitance
- Flammability tested to UL94V-0
- High insulation resistance
- Low cost, high consistency with automated production
- RoHS, REACH compliance

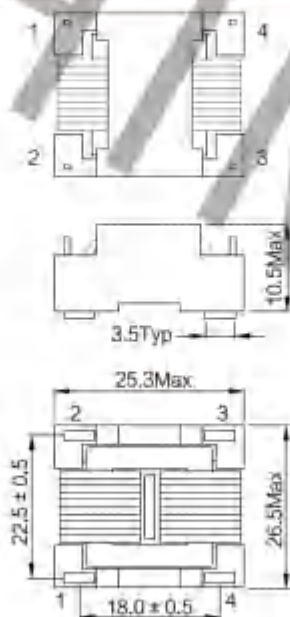
**APPLICATION:**

- Solutions for use in a wide array of power supply circuits
- High density switching mode power supply devices
- Ideal for use in consumer electronics and industrial applications: LCD TV, Battery chargers, Power Adapter, Home appliances
- Space saving for existing Common Mode Chokes

### ELECTRICAL CHARACTERISTICS:

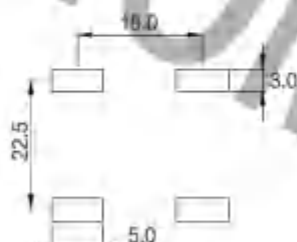
| Part Number  | Inductance Min. (mH). | DCR Max. (mΩ). | Rated current (A) | Wire     | Turns Ref. |
|--------------|-----------------------|----------------|-------------------|----------|------------|
| SQS1918A-001 | 20-30                 | 280            | 1.0-1.5           | 0.1*1.0  | 85         |
| SQS1918A-002 | 15-28                 | 280            | 1.5-1.8           | 0.13*1.0 | 73         |
| SQS1918A-003 | 15-25                 | 220            | 1.5-2.0           | 0.15*1.0 | 62         |
| SQS1918A-004 | 12-22                 | 160            | 2.0-2.8           | 0.15*1.5 | 62         |
| SQS1918A-005 | 10-15                 | 150            | 2.0-2.5           | 0.2*1.0  | 50         |
| SQS1918A-006 | 10-15                 | 130            | 2.0-3.0           | 0.2*1.2  | 50         |
| SQS1918A-007 | 10-15                 | 110            | 2.5-3.0           | 0.2*1.5  | 50         |
| SQS1918A-008 | 6-10                  | 110            | 2.5-3.0           | 0.25*1.0 | 42         |
| SQS1918A-009 | 6-10                  | 100            | 3.5-4.3           | 0.25*1.2 | 42         |
| SQS1918A-010 | 6-10                  | 80             | 3.5-4.5           | 0.25*1.5 | 42         |
| SQS1918A-011 | 3-6                   | 80             | 3.0-3.8           | 0.3*1.2  | 36         |
| SQS1918A-012 | 3-4                   | 60             | 3.1-4.0           | 0.3*1.5  | 36         |
| SQS1918A-013 | 2-3                   | 50             | 4.0-5.0           | 0.35*1.5 | 32         |
| SQS1918A-014 | 1-2                   | 40             | 5.0-6.0           | 0.4*1.5  | 25         |
| SQS1918A-015 | 0.5-1                 | 30             | 6.0-7.0           | 0.5*1.5  | 21         |
| SQS1918A-016 | 6-10                  | 30             | 7.0-8.0           | 0.55*1.5 | 18         |
| SQS1918A-017 | 6-10                  | 20             | 8.5-10            | 0.7*1.5  | 16         |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



**Note:**

- Test frequency .....1.0KHz, 0.25V
- Rated voltage .....80Vac-265Vac
- Test voltage .....1.0KVac, 2Sec
- Operating temperature .....-25°C to +125°C  
Including coil temperature rise
- Storage temperature .....-25°C to +100°C
- Insulation resistance.....100M  $\Omega$  Min@500Vdc
- Power range .....100W-500W



## LAND PATTERNS



# SURFACE-MOUNT TOROIDAL COILS AND COMMON MODE TOROIDAL CHORES

## STC SERIES

STC-01, 02, 03, 04



### FEATURES:

- Higher Frequency
- High Saturation Material
- Low EMI Radiation
- Pick and Place
- Low DC Resistance

### OPTIONS:

- Tape and Reel is Standard
- Custom Design Available
- OMC Design Available
- Tolerances: 20% is Standard
- Tighter Tolerances Available

### COMMON APPLICATIONS:

- Electronic Appliances
- DC - DC Conversion (Parallel Mode)
- Isolation/Coupling (Transformer)
- Input Filter (Parallel Mode)
- EMI/RFI Suppression

### STANDARD SPECIFICATION:

| Part Number<br>STC-XX- | Parallel Inductance<br>01        |               |                    | Parallel Inductance<br>02        |               |                    | Parallel Inductance<br>03        |               |                    | Parallel Inductance<br>04        |               |                    |
|------------------------|----------------------------------|---------------|--------------------|----------------------------------|---------------|--------------------|----------------------------------|---------------|--------------------|----------------------------------|---------------|--------------------|
|                        | DCI<br>nominal<br>+/-25%<br>(uH) | DCI<br>Atmos. | DCR<br>0<br>(mOhm) | DCI<br>nominal<br>+/-25%<br>(uH) | DCI<br>Atmos. | DCR<br>0<br>(mOhm) | DCI<br>nominal<br>+/-25%<br>(uH) | DCI<br>Atmos. | DCR<br>0<br>(mOhm) | DCI<br>nominal<br>+/-25%<br>(uH) | DCI<br>Atmos. | DCR<br>0<br>(mOhm) |
| 0.33                   | 0.402                            | 10.0          | 0.0032             | 0.384                            | 10.0          | 0.0028             | 0.368                            | 11.4          | 0.0027             | 0.313                            | 12.2          | 0.0028             |
| 0.88                   | 0.792                            | 10.0          | 0.0039             | 0.875                            | 6.4           | 0.0038             | 0.888                            | 8.3           | 0.0041             | 0.744                            | 10.8          | 0.0044             |
| 1.0                    | 1.16                             | 7.98          | 0.0060             | 1.26                             | 8.22          | 0.0080             | 1.08                             | 8.38          | 0.0081             | 1.99                             | 8.23          | 0.0048             |
| 2.0                    | 2.35                             | 5.99          | 0.010              | 1.85                             | 8.74          | 0.0077             | 3.11                             | 7.28          | 0.0028             | 3.18                             | 6.38          | 0.0054             |
| 5.0                    | 4.70                             | 4.27          | 0.017              | 5.08                             | 4.84          | 0.018              | 5.20                             | 5.24          | 0.019              | 4.28                             | 7.21          | 0.0070             |
| 8.0                    | 7.84                             | 3.37          | 0.028              | 7.65                             | 3.50          | 0.027              | 8.43                             | 4.33          | 0.020              | 8.70                             | 5.48          | 0.013              |
| 10.0                   | 10.58                            | 2.94          | 0.039              | 11.38                            | 2.88          | 0.040              | 8.88                             | 3.84          | 0.027              | 10.55                            | 4.87          | 0.017              |
| 15.0                   | 15.23                            | 2.07          | 0.075              | 15.48                            | 1.89          | 0.046              | 15.50                            | 3.95          | 0.033              | 18.70                            | 3.87          | 0.025              |
| 20.0                   | 20.73                            | 1.71          | 0.108              | 20.32                            | 2.34          | 0.057              | 20.81                            | 2.43          | 0.051              | 18.68                            | 3.83          | 0.035              |
| 25.0                   | 24.88                            | 1.46          | 0.145              | 25.60                            | 1.89          | 0.095              | 24.77                            | 2.34          | 0.065              | 25.74                            | 3.03          | 0.041              |
| 33.0                   | 34.28                            | 1.22          | 0.213              | 34.84                            | 1.58          | 0.138              | 33.71                            | 1.83          | 0.088              | 34.80                            | 2.48          | 0.081              |
| 50.0                   | 51.18                            | 0.88          | 0.327              | 48.38                            | 1.36          | 0.206              | 48.71                            | 1.50          | 0.147              | 50.11                            | 2.05          | 0.089              |
| 68.0                   | 67.67                            | 0.92          | 0.375              | 66.44                            | 1.07          | 0.283              | 68.60                            | 1.28          | 0.217              | 68.21                            | 1.70          | 0.181              |
| 100.0                  | 99.48                            | 0.74          | 0.588              | 102.98                           | 0.75          | 0.588              | 98.07                            | 1.06          | 0.328              | 100.87                           | 1.37          | 0.201              |
| 150.0                  | 147.4                            | 0.67          | 0.713              | 152.9                            | 0.66          | 0.723              | 149.7                            | 0.88          | 0.488              | 150.5                            | 1.10          | 0.218              |
| 200.0                  | 198.8                            | 0.62          | 0.825              | 197.5                            | 0.64          | 0.814              | 198.8                            | 0.71          | 0.711              | 200.1                            | 0.92          | 0.447              |
| 300.0                  | 300.8                            | 0.58          | 1.012              | 303.7                            | 0.58          | 1.008              | 296.2                            | 0.58          | 1.122              | 303.8                            | 0.75          | 0.875              |

### PHYSICAL CHARACTERISTICS

### DIMENSIONS-INCHES

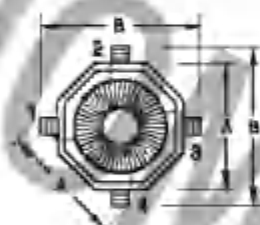
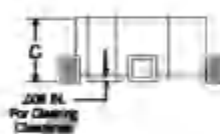
#### CONNECTION DIAGRAMS



| Case Size | A    | B    | C    | D    | E    | F    | G    |
|-----------|------|------|------|------|------|------|------|
| STC-01    | .350 | .450 | .185 | .277 | .422 | .262 | .148 |
| STC-02    | .390 | .450 | .235 | .277 | .422 | .262 | .148 |
| STC-03    | .450 | .550 | .180 | .348 | .482 | .482 | .180 |
| STC-04    | .480 | .550 | .260 | .348 | .482 | .482 | .180 |

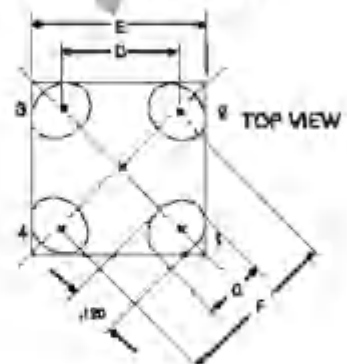
Dimensions in inches, optional

#### MECHANICAL DIAGRAM



BOTTOM VIEW

#### RECOMENDED LAYOUT



### TECHNICAL INFORMATION:

Inductance measured at 100KHz 0.1Vrms.  
Insulation Resistance: 100Vdc 10M Ohm min.  
Turns Ratio: 1:1 ± 0%  
RDC: Quad Tech 1850 Milliohm meter  
Soldering temperature: 260°C for 4 ± 1 seconds  
Operating temperature: -40°C to +125°C  
Storage Temperature: -55°C to +125°C  
Different package available per special request  
Max of 35% saturation on DC bias applied

Notes: All specifications subject to change without notice.







## COMMON MODE CHOKES STC01F SERIES

### FEATURES:

- Inductance range from 4.5uH to 200uH
- Current range up to 7.0 Amps
- Noise attenuation up to 44 dB
- Frequency range up to 100 MHz
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Supplied in tape and reel packaging

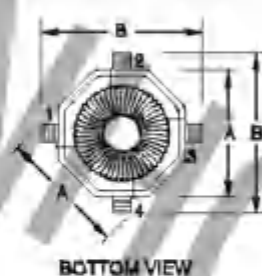
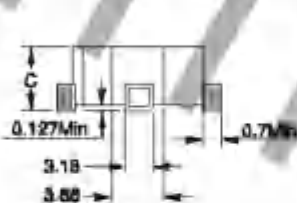
### COMMON APPLICATIONS:

- EMI filter
- DC-DC buck power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

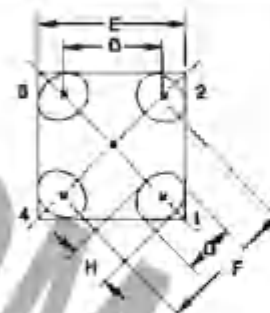
### ELECTRICAL CHARACTERISTICS:

| Part Number | L(GA)<br>(uH) Min<br>100KHz,0.1V | I <sub>rms</sub><br>(A)Max | DCR<br>(Ω)Typ<br>(1-2) | DCR<br>(Ω)Typ<br>(4-3) | Lk<br>(uH) Typ<br>100KHz,0.1V | Interwinding<br>Capacitance<br>(pF) |
|-------------|----------------------------------|----------------------------|------------------------|------------------------|-------------------------------|-------------------------------------|
| STC01F-4R5V | 4.5                              | 7.00                       | 0.0027                 | 0.0027                 | 0.05                          | 2.0                                 |
| STC01F-6R0V | 6                                | 5.70                       | 0.0040                 | 0.0040                 | 0.08                          | 2.1                                 |
| STC01F-120V | 12.8                             | 4.10                       | 0.0077                 | 0.0077                 | 0.14                          | 2.2                                 |
| STC01F-180V | 18                               | 3.80                       | 0.0088                 | 0.0088                 | 0.20                          | 2.3                                 |
| STC01F-250V | 25                               | 3.60                       | 0.0100                 | 0.0100                 | 0.28                          | 2.4                                 |
| STC01F-320V | 32.8                             | 3.10                       | 0.0138                 | 0.0138                 | 0.36                          | 2.5                                 |
| STC01F-410V | 41.5                             | 2.80                       | 0.019                  | 0.019                  | 0.45                          | 2.6                                 |
| STC01F-510V | 51.2                             | 2.50                       | 0.026                  | 0.026                  | 0.56                          | 2.7                                 |
| STC01F-620V | 62                               | 1.90                       | 0.035                  | 0.035                  | 0.68                          | 2.7                                 |
| STC01F-730V | 73.7                             | 1.65                       | 0.048                  | 0.048                  | 0.81                          | 2.8                                 |
| STC01F-101V | 100                              | 1.35                       | 0.070                  | 0.070                  | 1.10                          | 2.9                                 |
| STC01F-131V | 131                              | 1.15                       | 0.100                  | 0.100                  | 1.45                          | 3.0                                 |
| STC01F-181V | 188                              | 1.00                       | 0.138                  | 0.138                  | 1.83                          | 3.1                                 |
| STC01F-201V | 206                              | 0.85                       | 0.168                  | 0.168                  | 2.25                          | 3.2                                 |

### PHYSICAL CHARACTERISTICS



BOTTOM VIEW



Recommended layout



#### NOTES:

Inductance measure at 100KHz 0.1Vrms  
Insulation Resistance: 100Vdc 1KΩ min.  
Dielectric Strength: 500 Vrms between windings  
Turns Ratio: 1:1  
RDC: QuadTech 1885 MilliOhmmeter  
Soldering temperature: 260°C for 4 ± 1 seconds  
Operating temperature: -40°C to +125°C  
Storage Temperature: -40°C to +125°C  
Different package available per special request  
Max of 30% saturation on DC bias applied

| A    | B     | C      | D    | E     | F    | G    | H    |
|------|-------|--------|------|-------|------|------|------|
| 8.89 | 11.43 | 4.2Max | 7.04 | 10.72 | 6.08 | 3.68 | 3.05 |



## COMMON MODE CHOKES STC02F SERIES

### FEATURES:

- Inductance range from 25uH to 1340uH
- Current range up to 5.35 Amper
- Noise attenuation up to 44 dB
- Frequency range up to 100 MHz
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Supplied in tape and reel packaging

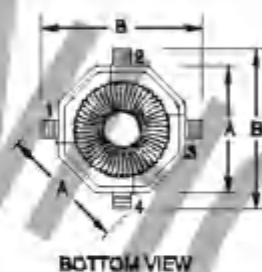
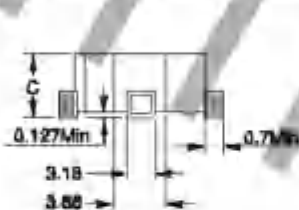
### COMMON APPLICATIONS:

- EMI filter
- DC-DC buck power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

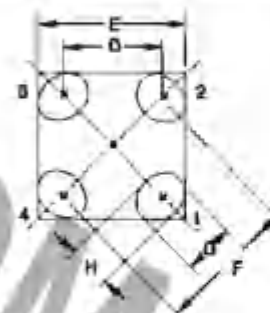
### ELECTRICAL CHARACTERISTICS:

| Part Number | L(GA)<br>(uH) Min<br>100KHz,0.1V | I <sub>ms</sub><br>(A)Max | DCR<br>(Ω)Typ<br>(1-2) | DCR<br>(Ω)Typ<br>(4-3) | Lk<br>(uH) Typ<br>100KHz,0.1V | Interwinding<br>Capacitance<br>(pF) |
|-------------|----------------------------------|---------------------------|------------------------|------------------------|-------------------------------|-------------------------------------|
| STC02F-250Y | 25                               | 5.35                      | 0.006                  | 0.006                  | 0.22                          | 2.0                                 |
| STC02F-400Y | 40                               | 4.40                      | 0.008                  | 0.008                  | 0.34                          | 2.3                                 |
| STC02F-570Y | 57                               | 3.80                      | 0.012                  | 0.012                  | 0.47                          | 2.5                                 |
| STC02F-101Y | 102                              | 2.80                      | 0.018                  | 0.018                  | 0.80                          | 2.8                                 |
| STC02F-161Y | 160                              | 2.30                      | 0.029                  | 0.029                  | 1.25                          | 3.1                                 |
| STC02F-231Y | 230                              | 1.85                      | 0.044                  | 0.044                  | 1.75                          | 3.4                                 |
| STC02F-271Y | 270                              | 1.80                      | 0.060                  | 0.060                  | 2.00                          | 3.6                                 |
| STC02F-361Y | 360                              | 1.35                      | 0.084                  | 0.084                  | 2.60                          | 3.8                                 |
| STC02F-461Y | 460                              | 1.10                      | 0.120                  | 0.120                  | 3.30                          | 4.1                                 |
| STC02F-571Y | 575                              | 0.94                      | 0.170                  | 0.170                  | 4.00                          | 4.3                                 |
| STC02F-701Y | 700                              | 0.80                      | 0.230                  | 0.230                  | 5.00                          | 4.6                                 |
| STC02F-911Y | 915                              | 0.67                      | 0.330                  | 0.330                  | 6.30                          | 4.9                                 |
| STC02F-102Y | 1070                             | 0.58                      | 0.440                  | 0.440                  | 7.30                          | 5.1                                 |
| STC02F-132Y | 1340                             | 0.50                      | 0.620                  | 0.620                  | 8.00                          | 5.4                                 |

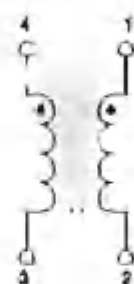
### PHYSICAL CHARACTERISTICS



BOTTOM VIEW



Recommended layout



#### NOTES:

Inductance measure at 100KHz 0.1Vrms  
Insulation Resistance: 100Vdc 1KΩ min.  
Dielectric Strength: 500 Vrms between windings  
Turns Ratio: 1:1  
RDC: QuadTech 1885 Milliohm meter  
Soldering temperature: 260°C for 4±1 seconds  
Operating temperature: -40°C to +125°C  
Storage Temperature: -40°C to +125°C  
Different package available per special request  
Max of 30% saturation on DC bias applied

| A    | B     | C      | D    | E     | F    | G    | H    |
|------|-------|--------|------|-------|------|------|------|
| 8.89 | 11.43 | 8.0Max | 7.04 | 10.72 | 6.08 | 3.68 | 3.05 |



## COMMON MODE CHOKES STC04F SERIES

### FEATURES:

- Inductance range from 28uH to 1310uH
- Current range up to 5.7 Ampe
- Noise attenuation up to 44 dB
- Frequency range up to 100 MHz
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Supplied in tape and reel packaging

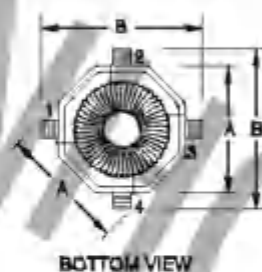
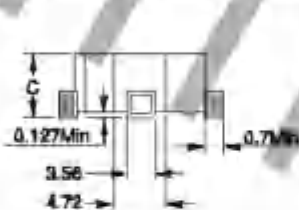
### COMMON APPLICATIONS:

- EMI filter
- DC-DC buck power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

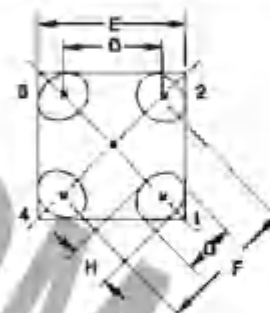
### ELECTRICAL CHARACTERISTICS:

| Part Number | L(GA)<br>(uH) Min<br>100KHz,0.1V | Imax<br>(A)Max | DCR<br>( $\Omega$ )Typ<br>(1-2) | DCR<br>( $\Omega$ )Typ<br>(4-3) | Lk<br>(uH) Typ<br>100KHz,0.1V | Interwinding<br>Capacitance<br>(pF) |
|-------------|----------------------------------|----------------|---------------------------------|---------------------------------|-------------------------------|-------------------------------------|
| STC04F-280Y | 28                               | 5.70           | 0.006                           | 0.006                           | 0.31                          | 2.80                                |
| STC04F-480Y | 48                               | 5.10           | 0.008                           | 0.008                           | 0.48                          | 3.05                                |
| STC04F-840Y | 84                               | 4.75           | 0.007                           | 0.007                           | 0.84                          | 3.30                                |
| STC04F-881Y | 88                               | 3.85           | 0.010                           | 0.010                           | 0.85                          | 3.50                                |
| STC04F-141Y | 140                              | 3.10           | 0.017                           | 0.017                           | 1.30                          | 3.70                                |
| STC04F-211Y | 217                              | 2.85           | 0.020                           | 0.020                           | 1.90                          | 3.90                                |
| STC04F-251Y | 258                              | 2.45           | 0.027                           | 0.027                           | 2.20                          | 4.15                                |
| STC04F-351Y | 350                              | 2.00           | 0.040                           | 0.040                           | 3.00                          | 4.40                                |
| STC04F-401Y | 400                              | 1.70           | 0.053                           | 0.053                           | 3.30                          | 4.65                                |
| STC04F-511Y | 518                              | 1.45           | 0.078                           | 0.078                           | 4.20                          | 4.85                                |
| STC04F-641Y | 648                              | 1.20           | 0.107                           | 0.107                           | 5.10                          | 5.10                                |
| STC04F-791Y | 790                              | 1.05           | 0.145                           | 0.145                           | 6.10                          | 5.35                                |
| STC04F-102Y | 1030                             | 0.88           | 0.210                           | 0.210                           | 7.90                          | 5.55                                |
| STC04F-132Y | 1310                             | 0.75           | 0.300                           | 0.300                           | 8.80                          | 5.80                                |

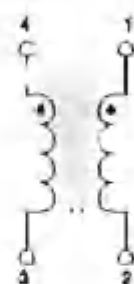
### PHYSICAL CHARACTERISTICS



BOTTOM VIEW



Recommended layout



#### NOTES:

Inductance measure at 100KHz 0.1Vrms  
Insulation Resistance: 100Vdc 1K $\Omega$  min.  
Dielectric Strength: 500 Vrms between windings  
Turns Ratio: 1:1  
RDC: QuadTech 1885 MilliOhmmeter  
Soldering temperature: 260°C for 4  $\pm$  1 seconds  
Operating temperature: -40°C to +125°C  
Storage Temperature: -40°C to +125°C  
Different package available per special request  
Max of 38% saturation on DC bias applied

| A     | B     | C       | D    | E    | F    | G    | H    |
|-------|-------|---------|------|------|------|------|------|
| 11.43 | 13.97 | 8.35Max | 8.84 | 12.5 | 12.5 | 4.08 | 3.05 |



## SURFACE-MOUNT TOROIDAL CHOKES STC-05,06P SERIES

### FEATURES:

- Higher Frequency
- High Saturation Material
- Low EMI Radiation
- Pick and Place
- Low DC Resistance

### OPTIONS:

- Packaging: Tape & Reel is standard (Qty:2000pcs)
- Bulk packaging available for smaller quantities
- Tolerance: 10% and 5% is standard, tighter tolerances available

### COMMON APPLICATIONS:

- Electronic Appliances
- DC - DC Conversion (Parallel Mode)
- Isolation/Coupling (Transformer)
- Input Filter (Serial Mode)
- EMI/RFI Suppression

### ELECTRICAL CHARACTERISTICS:

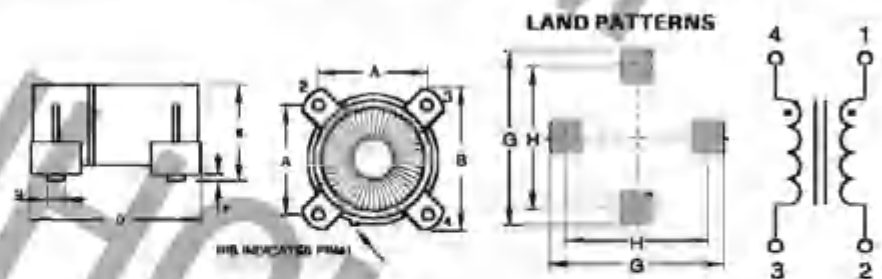
| POWDERED IRON CORE |        |             |             | MPP ALLOY CORE |        |             |             |
|--------------------|--------|-------------|-------------|----------------|--------|-------------|-------------|
| Part Number        | L (μH) | DCR (Ω) Max | IDC (A) Max | Part Number    | L (μH) | DCR (Ω) Max | IDC (A) Max |
| STC-05-R47M        | 0.47   | 0.005       | 7.90        | STC-06P-R47M   | 0.47   | 0.004       | 7.90        |
| STC-05-R68M        | 0.68   | 0.006       | 7.20        | STC-06P-R68M   | 0.68   | 0.005       | 7.00        |
| STC-05-1R0M        | 1.00   | 0.006       | 5.90        | STC-06P-1R0M   | 1.00   | 0.006       | 8.50        |
| STC-05-2R0M        | 2.00   | 0.014       | 4.60        | STC-06P-2R0M   | 2.00   | 0.007       | 5.90        |
| STC-05-5R0M        | 5.00   | 0.027       | 3.30        | STC-06P-5R0M   | 5.00   | 0.014       | 4.40        |
| STC-05-8R0M        | 8.00   | 0.033       | 3.00        | STC-06P-8R0M   | 8.00   | 0.016       | 3.50        |
| STC-05-100M        | 10.0   | 0.047       | 2.50        | STC-06P-100M   | 10.0   | 0.020       | 3.40        |
| STC-05-150M        | 15.0   | 0.057       | 2.30        | STC-06P-150M   | 15.0   | 0.024       | 3.00        |
| STC-05-200M        | 20.0   | 0.065       | 1.90        | STC-06P-200M   | 20.0   | 0.055       | 2.10        |
| STC-05-250M        | 25.0   | 0.115       | 1.90        | STC-06P-250M   | 25.0   | 0.064       | 2.00        |
| STC-05-330M        | 33.0   | 0.166       | 1.30        | STC-06P-330M   | 33.0   | 0.072       | 1.80        |
| STC-05-500M        | 50.0   | 0.202       | 1.20        | STC-06P-500M   | 50.0   | 0.111       | 1.30        |
| STC-05-680M        | 68.0   | 0.238       | 1.10        | STC-06P-680M   | 68.0   | 0.158       | 1.20        |
| STC-05-101M        | 100    | 0.585       | 0.72        | STC-06P-101M   | 100    | 0.303       | 0.92        |
| STC-05-151M        | 150    | 0.696       | 0.54        | STC-06P-151M   | 150    | 0.372       | 0.82        |
| STC-05-201M        | 200    | 1.415       | 0.53        | STC-06P-201M   | 200    | 0.345       | 0.84        |
| STC-05-301M        | 300    | 1.003       | 0.54        | STC-06P-301M   | 300    | 0.672       | 0.62        |

Note: 1. K= ± 10%, M= ± 20%, N= ± 30%

### TECHNICAL INFORMATION:

- Testing: (Equivalent acceptable)
- Inductance: Reduced by 10% to 20% @ IDC
- RDC: QuadTech 1680 Milliohm meter
- IDC Max: Lowers Inductance by 10-20%
- Temperature range: -55°C to +125°C

### PHYSICAL CHARACTERISTICS:



DIMENSIONS IN: mm

| Part number | A           | B           | C           | D           | E           | F       | G    | H     |
|-------------|-------------|-------------|-------------|-------------|-------------|---------|------|-------|
| STC05       | 7.00 ± 0.25 | 9.14 ± 0.25 | 1.52 ± 0.25 | 8.90 ± 0.25 | 5.08 ± 0.25 | 1.02Max | 12.7 | 10.3  |
| STC06P      | 10.2 ± 0.25 | 13.5 ± 0.25 | 3.20 ± 0.25 | 12.4 ± 0.25 | 7.67Max     | 1.02Max | 17.4 | 14.35 |

Note: All specifications subject to change without notice.



## COMMON MODE POWER LINE CHOKE

### STC05A SERIES

#### FEATURES:

- Common mode choke for telecom applications
- High impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

#### APPLICATIONS:

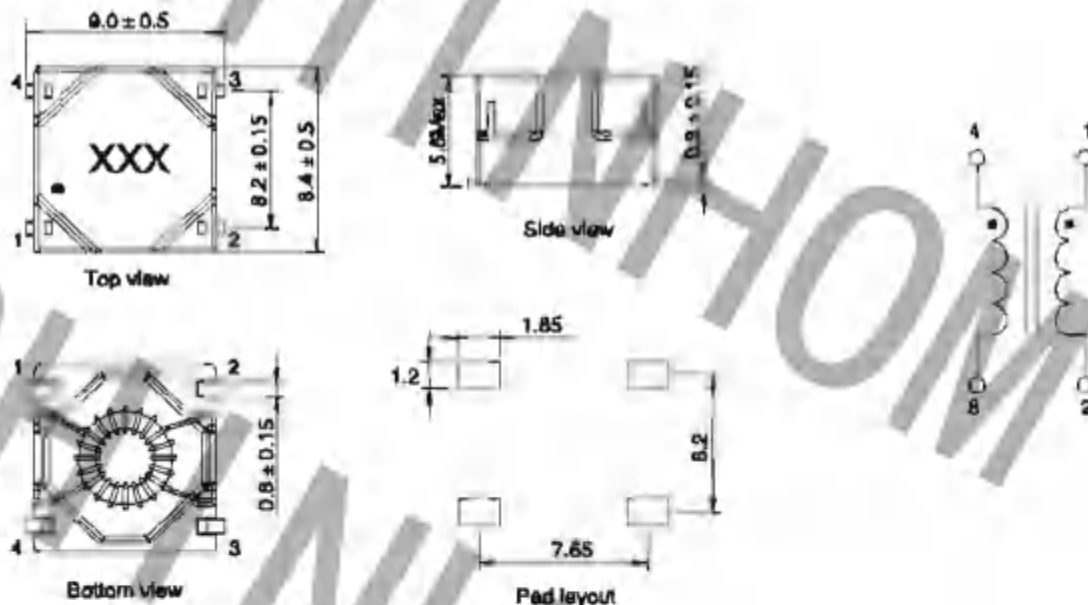
- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies



#### ELECTRICAL CHARACTERISTICS:

| Part Number | L(Δ)<br>(μH) +50%/-30%<br>10KHz,0.1V | DCR<br>(mΩ)Max | IDC<br>(A)Max | Hi-Pot<br>(Vdc)<br>50Hz,1mA,1S |
|-------------|--------------------------------------|----------------|---------------|--------------------------------|
| STC05A-102Y | 1000                                 | 180            | 0.95          | 500                            |
| STC05A-222Y | 2200                                 | 300            | 0.75          | 500                            |
| STC05A-332Y | 3300                                 | 360            | 0.52          | 500                            |
| STC05A-392Y | 3900                                 | 540            | 0.52          | 500                            |
| STC05A-472Y | 4700                                 | 600            | 0.35          | 500                            |

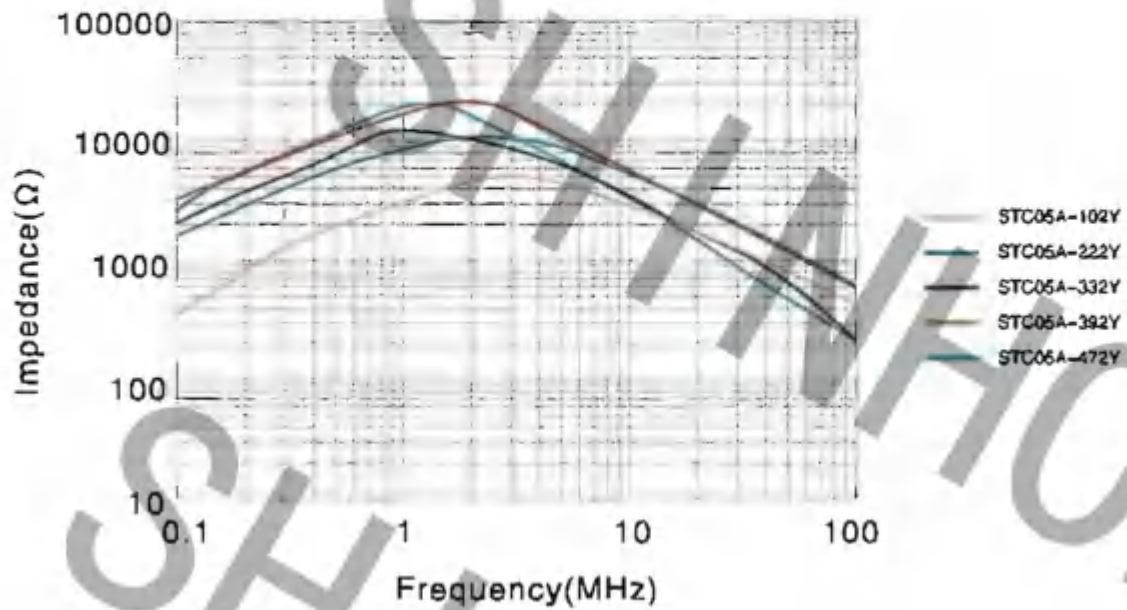
#### PHYSICAL CHARACTERISTICS



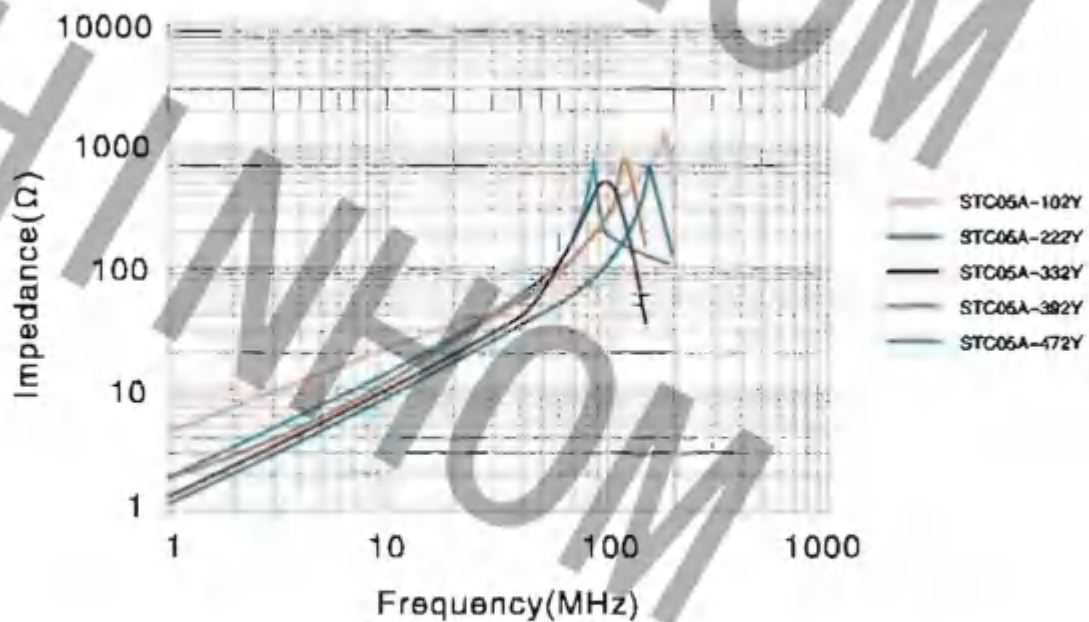
#### NOTES:

- Temperature Rise ..... 40°C typical at IDC
- Operating Temperature ..... -40°C to +125°C (including self temperature rise)
- Storage Temperature ..... -40°C to +125°C
- Soldering ..... 245°C, 3 seconds max
- Dielectric Strength ..... 500 Vrms between windings

## IMPEDANCE COMMON MODE



## IMPEDANCE DIFFERENTIAL MODE





## COMMON MODE CHOKES

### STC05F SERIES

#### FEATURES:

- Inductance range from 25uH to 1600uH
- Current range up to 5.35 Amps
- Noise attenuation up to 5.4 dB
- Meets UL94V-0 flammability standard
- Ferrite core material

#### OPTIONS:

- Supplied in tape and reel packaging

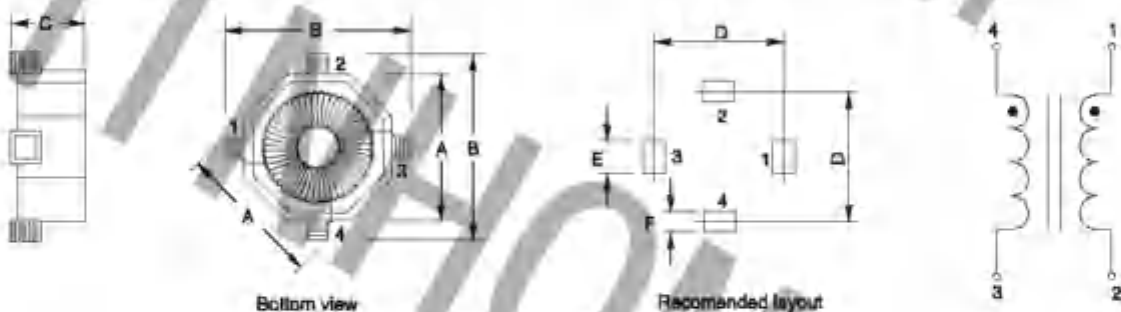
#### COMMON APPLICATIONS:

- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

#### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(uH) $\pm 30\%$<br>100KHz,0.1V | I <sub>rms</sub><br>(A)Max | DCR<br>(mΩ)Typ<br>(1-2) | DCR<br>(mΩ)Typ<br>(4-3) | L <sub>c</sub><br>(uH) Typ<br>100KHz,0.1V | Interwinding<br>Capacitance<br>(pF) |
|-------------|-----------------------------------------|----------------------------|-------------------------|-------------------------|-------------------------------------------|-------------------------------------|
| STC05F-250Y | 25.0                                    | 5.35                       | 3.10                    | 3.10                    | 0.22                                      | 2.00                                |
| STC05F-400Y | 40.0                                    | 4.40                       | 3.89                    | 3.89                    | 0.34                                      | 2.30                                |
| STC05F-700Y | 70.0                                    | 3.60                       | 5.35                    | 5.35                    | 0.47                                      | 2.50                                |
| STC05F-950Y | 95.0                                    | 2.80                       | 7.97                    | 7.97                    | 0.80                                      | 2.80                                |
| STC05F-151Y | 150.0                                   | 2.30                       | 16.85                   | 16.85                   | 1.25                                      | 3.10                                |
| STC05F-271Y | 275.0                                   | 1.85                       | 34.53                   | 34.53                   | 1.75                                      | 3.40                                |
| STC05F-321Y | 320.0                                   | 1.60                       | 39.72                   | 39.72                   | 2.00                                      | 3.60                                |
| STC05F-401Y | 400.0                                   | 1.35                       | 42.73                   | 42.73                   | 2.60                                      | 3.80                                |
| STC05F-501Y | 500.0                                   | 1.10                       | 57.43                   | 57.43                   | 3.30                                      | 4.10                                |
| STC05F-621Y | 620.0                                   | 0.94                       | 73.72                   | 73.72                   | 4.00                                      | 4.30                                |
| STC05F-751Y | 750.0                                   | 0.80                       | 96.34                   | 96.34                   | 5.00                                      | 4.60                                |
| STC05F-112Y | 1100.0                                  | 0.67                       | 161.2                   | 161.2                   | 6.30                                      | 4.90                                |
| STC05F-132Y | 1300.0                                  | 0.58                       | 245.5                   | 245.5                   | 7.30                                      | 5.10                                |
| STC05F-162Y | 1600.0                                  | 0.50                       | 350.5                   | 350.5                   | 8.00                                      | 5.40                                |

#### PHYSICAL CHARACTERISTICS



#### NOTES:

Inductance measure at 100KHz 0.1VRms  
 Insulation Resistance: 100Vdc 1KΩ min.  
 Dielectric Strength: 500 Vrms between windings  
 Turns Ratio: 1:1  
 RDC: QuadTach 1880 Milliohmimeter  
 Soldering temperature: 260°C for 4 ± 1 seconds  
 Operating temperature: -40°C to +125°C  
 Storage Temperature: -40°C to +125°C

| A   | B       | C      | D   | E   | F   |
|-----|---------|--------|-----|-----|-----|
| 8.8 | 11.8Max | 5.2Max | 9.9 | 3.5 | 3.0 |



## COMMON MODE CHOKES STC06 SERIES

### FEATURES:

- Inductance range from 0.075mH to 12mH
- Current range up to 8.8 Amps
- High resonant frequency
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Packaging: Tape & Reel is standard
- Bulk packaging available for smaller quantities

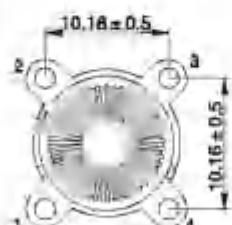
### COMMON APPLICATIONS:

- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

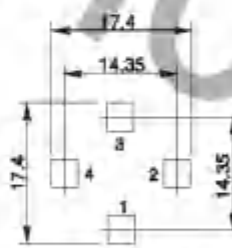
### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(mH) $\pm 25\%$<br>10KHz, 0.1V | Leakage<br>Inductance<br>(uH)Max | DCR<br>( $\Omega$ )Max | I <sub>rms</sub><br>(A)<br>$\Delta T=20^\circ\text{C}$ | I <sub>rms</sub><br>(A)<br>$\Delta T=40^\circ\text{C}$ |
|-------------|-----------------------------------------|----------------------------------|------------------------|--------------------------------------------------------|--------------------------------------------------------|
| STC06-101Y  | 0.1                                     | 0.8                              | 0.006                  | 6.85                                                   | 6.80                                                   |
| STC06-151Y  | 0.15                                    | 1.1                              | 0.010                  | 5.75                                                   | 5.20                                                   |
| STC06-221Y  | 0.22                                    | 1.5                              | 0.012                  | 4.50                                                   | 4.60                                                   |
| STC06-331Y  | 0.33                                    | 2.1                              | 0.017                  | 4.25                                                   | 4.40                                                   |
| STC06-501Y  | 0.5                                     | 2.6                              | 0.024                  | 3.70                                                   | 5.30                                                   |
| STC06-751Y  | 0.75                                    | 3.8                              | 0.035                  | 3.00                                                   | 4.40                                                   |
| STC06-102Y  | 1.0                                     | 4.6                              | 0.048                  | 2.70                                                   | 4.05                                                   |
| STC06-122Y  | 1.2                                     | 5.5                              | 0.068                  | 2.25                                                   | 3.45                                                   |
| STC06-182Y  | 1.8                                     | 8.0                              | 0.108                  | 1.70                                                   | 2.50                                                   |
| STC06-222Y  | 2.2                                     | 10.5                             | 0.150                  | 1.45                                                   | 2.25                                                   |
| STC06-332Y  | 3.3                                     | 17.0                             | 0.210                  | 1.10                                                   | 2.00                                                   |
| STC06-502Y  | 5.0                                     | 27.0                             | 0.320                  | 0.80                                                   | 1.35                                                   |
| STC06-752Y  | 7.5                                     | 42.0                             | 0.640                  | 0.80                                                   | 1.10                                                   |
| STC06-103Y  | 10.0                                    | 55.0                             | 0.800                  | 0.70                                                   | 0.85                                                   |
| STC06-123Y  | 12.0                                    | 70.0                             | 1.700                  | 0.50                                                   | 0.65                                                   |

### PHYSICAL CHARACTERISTICS



Bottom view



Recommended layout



### NOTES:

- Inductance tested at 10KHz, 0.1V
- DCR Measured at 25°C
- Rated voltage: 1500V for 2Seconds between windings
- I<sub>rms</sub> current: Current applied to one winding resulting in a Temperature rise of 20°C or 40°C at an ambient temperature of 25°C
- Electrical specifications measured at 25°C
- Operating temperature: -40°C to +105°C
- Storage temperature: -55°C to +130°C



## COMMON MODE POWER LINE CHOKE

### STC06A SERIES

#### FEATURES:

- Common mode chokes for AC power lines
- High Impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

#### APPLICATIONS:

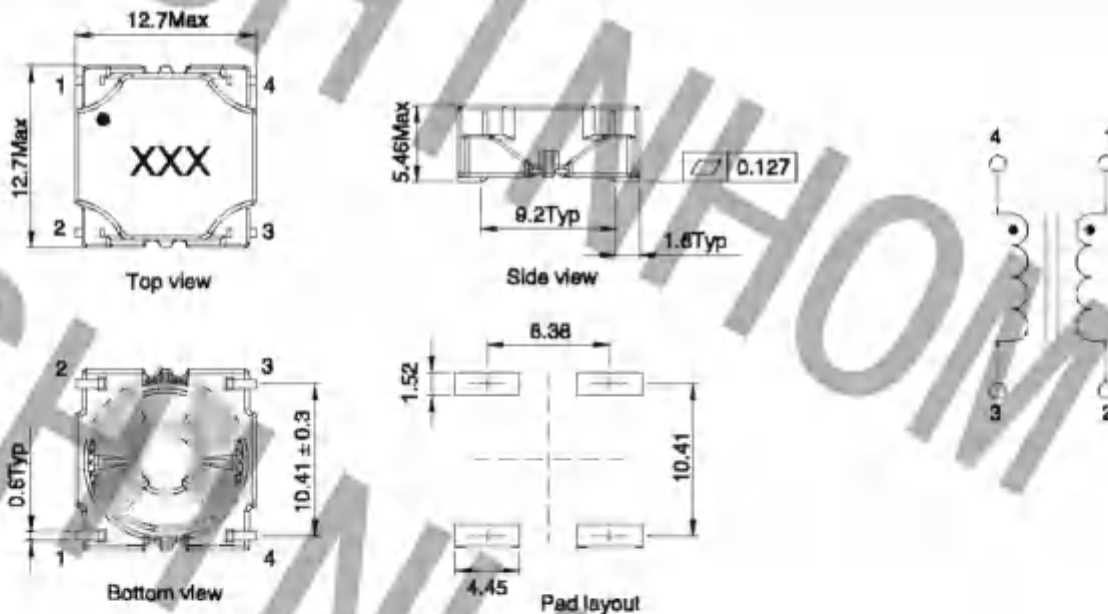
- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies



#### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(uH) $\pm 35\%$<br>100KHz,0.1V | DCR<br>(m $\Omega$ )Max | IDC<br>(A)Max | Hi-Pot<br>(Vdc)<br>50Hz,1mA,1S |
|-------------|-----------------------------------------|-------------------------|---------------|--------------------------------|
| STC06A-681Y | 680                                     | 110                     | 1.63          | 1000                           |
| STC06A-112Y | 1170                                    | 200                     | 1.22          | 1000                           |
| STC06A-302Y | 3000                                    | 280                     | 0.85          | 1000                           |
| STC06A-392Y | 3900                                    | 350                     | 0.85          | 1000                           |
| STC06A-682Y | 6800                                    | 700                     | 0.3           | 1000                           |

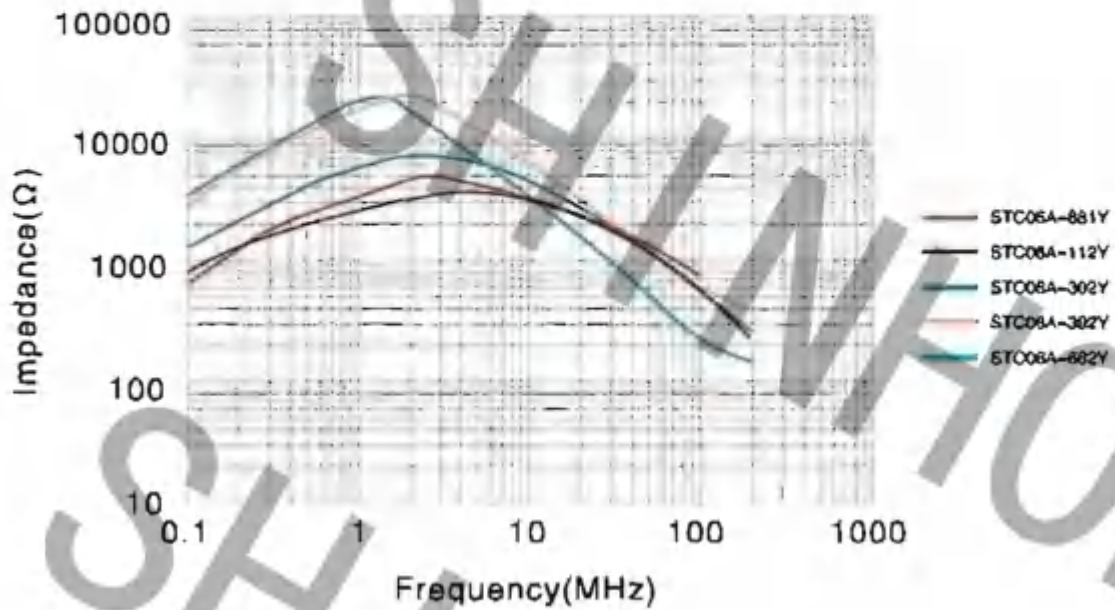
#### PHYSICAL CHARACTERISTICS



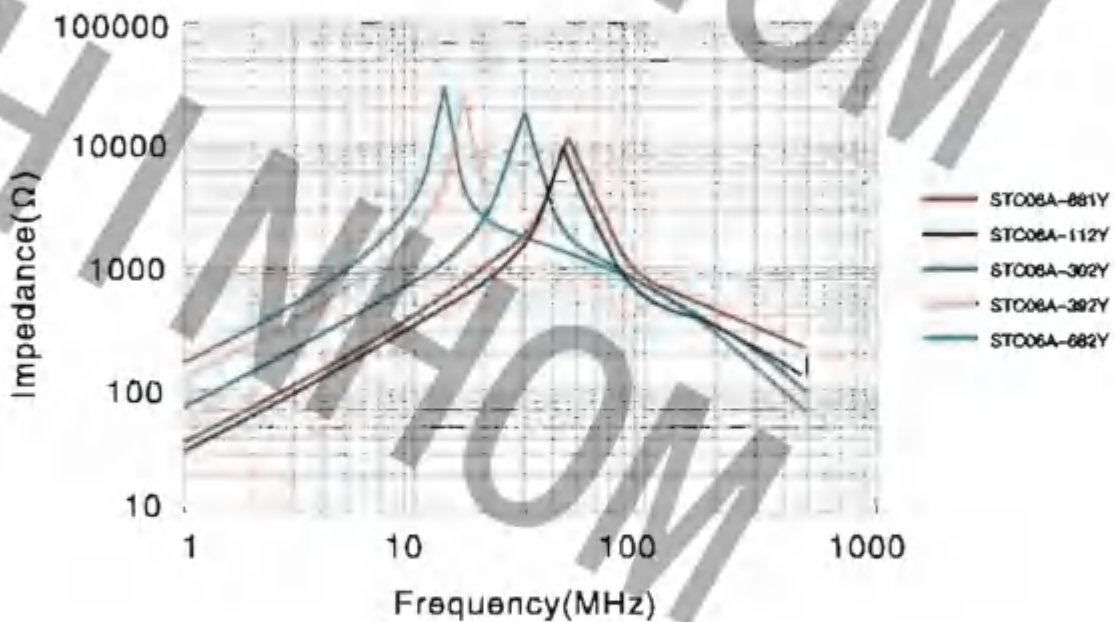
#### NOTES:

- Temperature Rise ..... 40°C typical at IDC
- Operating Temperature ..... -40°C to +125°C (including self temperature rise)
- Storage Temperature ..... -40°C to +125°C
- Soldering ..... 245°C, 5 seconds max
- Dielectric Strength ..... 1000 Vrms between windings

## IMPEDANCE COMMON MODE



## IMPEDANCE DIFFERENTIAL MODE





## COMMON MODE CHOKES STC06F SERIES

### FEATURES:

- Inductance range from 34.9uH to 1800uH
- Current range up to 5.7 Amps
- Noise attenuation up to 5.6 dB
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Supplied in tape and reel packaging

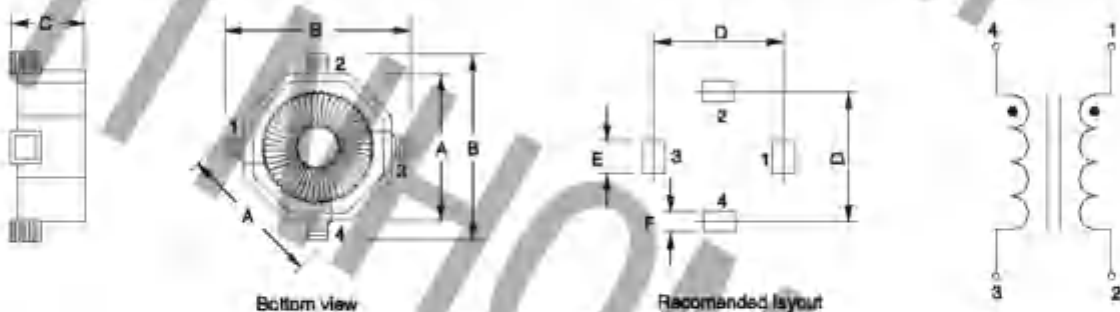
### COMMON APPLICATIONS:

- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(uH) $\pm 30\%$<br>100KHz,0.1V | Irms<br>(A)Max | DCR<br>(m $\Omega$ )Typ<br>(1-2) | DCR<br>(m $\Omega$ )Typ<br>(4-3) | Lc<br>(uH) Typ<br>100KHz,0.1V | Interwinding<br>Capacitance<br>(pF) |
|-------------|-----------------------------------------|----------------|----------------------------------|----------------------------------|-------------------------------|-------------------------------------|
| STC06F-340Y | 34.9                                    | 5.70           | 4.63                             | 4.63                             | 0.31                          | 2.80                                |
| STC06F-500Y | 50.0                                    | 5.10           | 5.12                             | 5.12                             | 0.46                          | 3.05                                |
| STC06F-750Y | 75.0                                    | 4.75           | 6.52                             | 6.52                             | 0.64                          | 3.30                                |
| STC06F-101Y | 105.0                                   | 3.95           | 7.92                             | 7.92                             | 0.85                          | 3.50                                |
| STC06F-171Y | 175.0                                   | 3.10           | 15.9                             | 15.9                             | 1.30                          | 3.70                                |
| STC06F-261Y | 260.0                                   | 2.85           | 19.5                             | 19.5                             | 1.90                          | 3.90                                |
| STC06F-311Y | 310.0                                   | 2.45           | 25.3                             | 25.3                             | 2.20                          | 4.15                                |
| STC06F-421Y | 420.0                                   | 2.00           | 36.8                             | 36.8                             | 3.00                          | 4.40                                |
| STC06F-481Y | 480.0                                   | 1.70           | 50.2                             | 50.2                             | 3.30                          | 4.65                                |
| STC06F-621Y | 620.0                                   | 1.45           | 62.1                             | 62.1                             | 4.20                          | 4.85                                |
| STC06F-781Y | 780.0                                   | 1.20           | 92.3                             | 92.3                             | 5.10                          | 5.10                                |
| STC06F-951Y | 950.0                                   | 1.05           | 132.1                            | 132.1                            | 6.10                          | 5.35                                |
| STC06F-122Y | 1250.0                                  | 0.88           | 192.2                            | 192.2                            | 7.80                          | 5.55                                |
| STC06F-162Y | 1800.0                                  | 0.75           | 286.5                            | 286.5                            | 9.60                          | 5.80                                |

### PHYSICAL CHARACTERISTICS



#### NOTES:

Inductance measure at 100KHz 0.1VRms  
Insulation Resistance: 100Vdc 1K $\Omega$  min.  
Dielectric Strength: 500 Vrms between windings  
Turns Ratio: 1:1  
RDC: QuadTach 1680 Milliohm meter  
Soldering temperature: 260°C for 4  $\pm$  1 seconds  
Operating temperature: -40°C to +125°C  
Storage Temperature: -40°C to +125°C

| A    | B       | C      | D     | E   | F   |
|------|---------|--------|-------|-----|-----|
| 11.4 | 14.3Max | 8.0Max | 12.44 | 3.5 | 3.0 |



## COMMON MODE CHOKES STC07 SERIES

### FEATURES:

- Inductance range from 1mH to 39mH
- Current range up to 3.0 Amps
- Frequency range up to 100 MHz
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Packaging: Tape & Reel is standard
- Bulk packaging available for smaller quantities

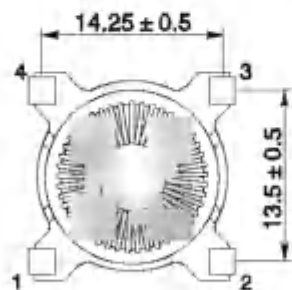
### COMMON APPLICATIONS:

- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(mH) Min<br>1.0KHz, 0.1V | IDC<br>(A) | DCR<br>(mΩ) Max |
|-------------|-----------------------------------|------------|-----------------|
| STC07-102Y  | 1                                 | 2.0        | 44.5            |
| STC07-402Y  | 4                                 | 1.5        | 140             |
| STC07-502Y  | 5                                 | 1.0        | 200             |
| STC07-103Y  | 10                                | 0.7        | 350             |
| STC07-203Y  | 20                                | 0.5        | 1000            |
| STC07-393Y  | 39                                | 0.3        | 3000            |

### PHYSICAL CHARACTERISTICS



Bottom view



Recommended layout



#### NOTES:

1. Temperature Rise ...35°C typical at Irms Operating Temperature .....-55°C to +125°C Storage Temperature
2. Storage Temperature .....-55°C to +125°C Soldering .....245°C, 5 seconds max. Dielectric Strength .....500 Vrms between windings
3. Core .....Ferrite
4. Wire .....Polyester-coated copper
5. Terminal Coating .....Sn-Ag-Cu alloy





## COMMON MODE CHOKES STC08 SERIES

### FEATURES:

- Inductance range from 0.2mH to 20mH
- Current range up to 7.0 Amps
- Noise attenuation up to 44 dB
- Frequency range up to 100 MHz
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Supplied in tape and reel packaging

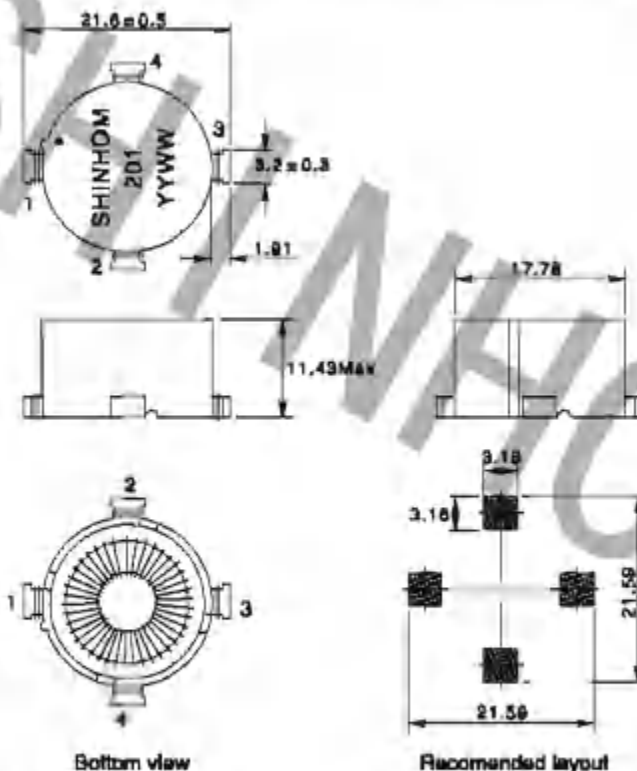
### COMMON APPLICATIONS:

- EMI filter
- DC-DC bridge power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>( $\mu$ H) Min<br>1.0KHz, 0.1V | Lk<br>( $\mu$ H) Typ<br>100KHz, 0.1V | DCR<br>( $\Omega$ ) Max | IDC<br>(A) Max | Typ Frequency<br>range with<br>20dB Attm |
|-------------|-----------------------------------------|--------------------------------------|-------------------------|----------------|------------------------------------------|
| STC08-201Y  | 300                                     | 1.8                                  | 0.008                   | 7.0            | 5-55MHz                                  |
| STC08-501Y  | 500                                     | 2.2                                  | 0.010                   | 8.0            | 4-40MHz                                  |
| STC08-751Y  | 750                                     | 2.9                                  | 0.012                   | 5.5            | 1-20MHz                                  |
| STC08-102Y  | 1000                                    | 3.8                                  | 0.020                   | 4.0            | 500KHz-10MHz                             |
| STC08-202Y  | 2000                                    | 0.3                                  | 0.030                   | 3.5            | 300KHz-20MHz                             |
| STC08-502Y  | 5000                                    | 0.4                                  | 0.070                   | 2.0            | 100KHz-10MHz                             |
| STC08-103Y  | 10000                                   | 0.6                                  | 0.150                   | 1.5            | 50KHz-5MHz                               |
| STC08-203Y  | 20000                                   | 0.7                                  | 0.250                   | 1.0            | 25KHz-4MHz                               |

### PHYSICAL CHARACTERISTICS



#### NOTES:

1. Temperature Rise ... 35°C typical at I<sub>rms</sub> Operating Temperature ... -55°C to +125°C Storage Temperature
2. Storage Temperature ... -65°C to +125°C Soldering ... 245°C, 5 seconds max. Dielectric Strength ... 500 Vrms between windings
3. Core ... Ferrite
4. Wire ... Polyester-coated copper
5. Terminal Coating ... Sn-Ag-Cu alloy



## COMMON MODE CHOKES STC09 SERIES

### FEATURES:

- Inductance range from 25uH to 2500uH
- Current range up to 10.0 Amps
- Noise attenuation up to 44 dB
- Frequency range up to 100 MHz
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Supplied in tape and reel packaging

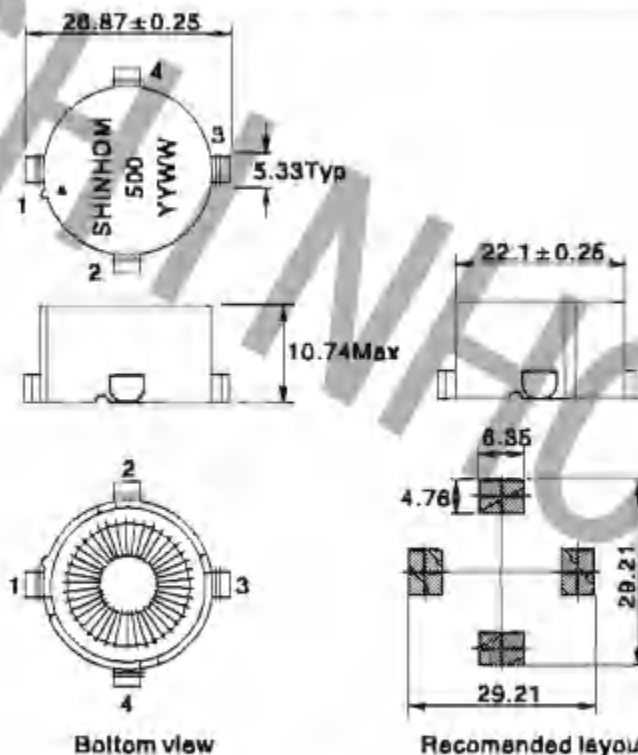
### COMMON APPLICATIONS:

- EMI filters
- DC-DC bridge power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(uH) $\pm 25\%$<br>1.0KHz, 0.1V | Lk<br>(uH) Typ<br>100KHz, 0.1V | DCR<br>( $\Omega$ ) Max | IDC<br>(A) Max |
|-------------|------------------------------------------|--------------------------------|-------------------------|----------------|
| STC09-250Y  | 25                                       | 0.7                            | 0.014                   | 10.0           |
| STC09-500Y  | 50                                       | 0.8                            | 0.014                   | 10.0           |
| STC09-101Y  | 100                                      | 1.4                            | 0.016                   | 9.5            |
| STC09-151Y  | 150                                      | 1.8                            | 0.016                   | 9.5            |
| STC09-201Y  | 200                                      | 2.2                            | 0.018                   | 8.5            |
| STC09-301Y  | 300                                      | 3.3                            | 0.020                   | 7.5            |
| STC09-451Y  | 450                                      | 4.8                            | 0.024                   | 6.5            |
| STC09-651Y  | 650                                      | 6.2                            | 0.030                   | 5.5            |
| STC09-102Y  | 1000                                     | 8.3                            | 0.050                   | 3.5            |
| STC09-152Y  | 1500                                     | 14.6                           | 0.080                   | 2.5            |
| STC09-252Y  | 2500                                     | 21.8                           | 0.152                   | 2.2            |

### PHYSICAL CHARACTERISTICS



#### NOTES:

1. Temperature Rise ... 35°C typical at 1rms Operating Temperature ... -55°C to +125°C Storage Temperature
2. Storage Temperature ... -55°C to +125°C Soldering ... 245°C, 5 seconds max. Dielectric Strength ... 500 Vrms between windings
3. Core ... Ferrite
4. Wires ... Polyester-coated copper
5. Terminal Coating ... Sn-Ag-Cu alloy



## SMD LINE FILTER STR0602 SERIES

### FEATURES:

- Compact design.
- Single layer winding for minimum capacitance.
- Meets UL 94V-0 flammability standard.
- Available on tape and reel for auto surface mounting.

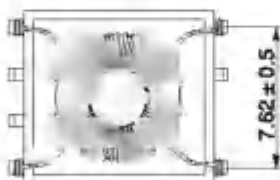
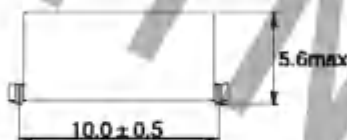
### APPLICATIONS:

- EMI filters.
- Personal computers.
- Communication equipment.

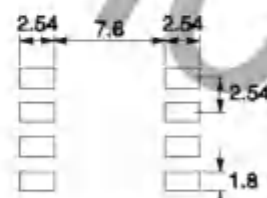
### ELECTRICAL CHARACTERISTICS:

| Part Number  | $L1=L2(\mu H)$<br>@ 10KHz, 0.1V<br>$\pm 30\%$ | DCR<br>(winding)<br>(mΩ) max. | Rated Current<br>(A) max. |
|--------------|-----------------------------------------------|-------------------------------|---------------------------|
| STR0602-100N | 10                                            | 25                            | 2.5                       |
| STR0602-150N | 15                                            | 40                            | 2.0                       |
| STR0602-200N | 20                                            | 70                            | 1.5                       |
| STR0602-121N | 120                                           | 25                            | 2.5                       |
| STR0602-201N | 200                                           | 40                            | 2.0                       |
| STR0602-301N | 300                                           | 70                            | 1.5                       |

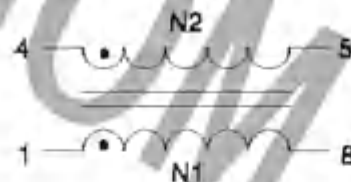
### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



Bottom view



Layout recommendation



- IDC Max: Determined when superimposed
  - Inductance test: HP4284A 10KHz 0.1V
  - RDC: QuadTech 1880 Milliohm meter
  - Operating temperature:  $-25^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$
  - Storage Temperature:  $-25^{\circ}\text{C}$  to  $+105^{\circ}\text{C}$
  - Solder methods: Vapor Phase, Infrared Reflow
  - Resistance to soldering heat:  $260^{\circ}\text{C}$  for 10 seconds
  - Solvent resistance: Conforms to MIL-STD-202E
  - Marking: Inductance & Date
- Note: All specifications subject to change without notice.

## SMD LINE FILTER STR0603 SERIES

### FEATURES:

- SMD Housing
- High Frequency Design
- Excellent Mechanical Strength
- Excellent Solderability
- High Reliability
- Low Profile

### COMMON APPLICATIONS:

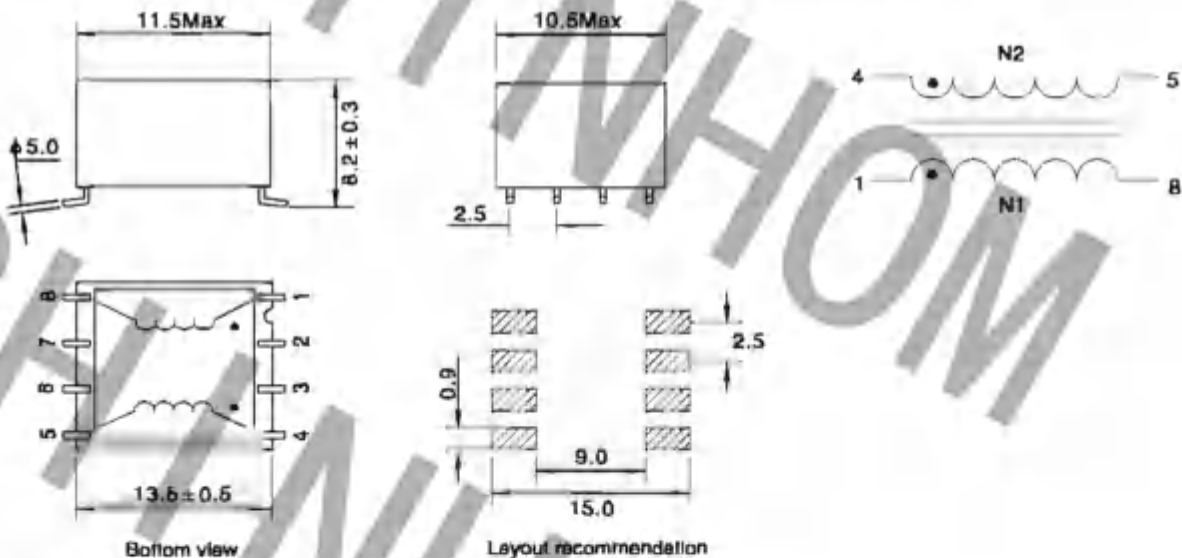
- VCRs
- Video Cameras
- Communication System
- Automotive Systems
- Liquid Crystal Televisions
- Hard Disk Drives
- Network Systems
- Computer Peripheral Equipment



### ELECTRICAL CHARACTERISTICS:

| Part Number  | L<br>mH | Test<br>Freq<br>KHz | DCR<br>Ω<br>Max | IDC<br>A<br>Max |
|--------------|---------|---------------------|-----------------|-----------------|
| STR0603-102Y | 1.0     | 1                   | 0.82            | 0.5             |
| STR0603-501Y | 0.5     | 1                   | 0.45            | 0.6             |
| STR0603-221Y | 0.22    | 1                   | 0.22            | 0.8             |
| STR0603-151Y | 0.15    | 1                   | 0.15            | 1.0             |

### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



- IDC Max: Determined when superimposed
- Testing: (Equivalent acceptable) Inductance: HP4284A  
RDC: QuadTech 1880 Milliohm meter
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C
- Solder method: Vapor Phase, Infrared Reflow
- Resistance to soldering heat: 260°C for 10 seconds
- Solvent resistance: Conforms to MIL-STD-202E
- Marking: Inductance & Tolerance

Note: All specifications subject to change without notice.





## SMD LINE FILTER STR0903 SERIES

### FEATURES:

- Approx. 0.8% stray inductance for differential-mode interference suppression
- Suitable for reflow soldering
- Design complies with EN 60958-2 (VDE 0585-2)
- RoHS-compatible

### OPTIONS:

- Tape & Reel is Standard (Qty: 350 pcs)
- Bulk packaging Available for smaller quantities

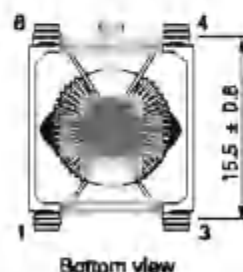
### COMMON APPLICATIONS:

- Suppression of common-mode interference
- Compact electronic ballasts in lamps
- Compact switch-mode power supplies

### ELECTRICAL CHARACTERISTICS:

| Part Number  | L(1-8)(mH)<br>@10KHz,0.1V<br>+50%-30% | LK(1-8)(uH)<br>@10KHz,0.1V<br>(4-5 short) max. | DCR<br>(winding)<br>(mΩ) max. | Rated Current<br>(A) max. | Hi-Pot<br>Vac,25 |
|--------------|---------------------------------------|------------------------------------------------|-------------------------------|---------------------------|------------------|
| STR0903-112Y | 1.1                                   | 6                                              | 65                            | 2.0                       | 1500             |
| STR0903-182Y | 1.8                                   | 10                                             | 110                           | 1.5                       | 1500             |
| STR0903-302Y | 3.0                                   | 20                                             | 220                           | 1.0                       | 1500             |
| STR0903-442Y | 4.4                                   | 30                                             | 400                           | 0.8                       | 1500             |
| STR0903-123Y | 12                                    | 80                                             | 1100                          | 0.3                       | 1500             |
| STR0903-223Y | 22                                    | 130                                            | 1600                          | 0.3                       | 1500             |

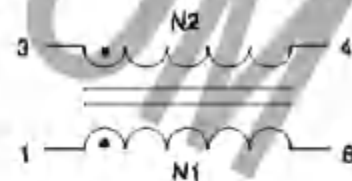
### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



Bottom view



Layout recommendation



- Operating voltage: 250Vac
  - IDC Max: Determined when superimposed
  - Inductance test: HP4284A 10KHz 0.1V
  - RDC: QuadTech 1880 Milliohm meter
  - Operating temperature: -40°C to +105°C
  - Storage Temperature: -40°C to +105°C
  - Temperature rise 40°C Max
  - Solder methods: Vapor Phase, Infrared Reflow
  - Resistance to soldering heat: 260°C for 10 seconds
  - Solvent resistance: Conforms to MIL-STD-202E
  - Marking: Inductance & Date
- Note: All specifications subject to change without notice.

# COMMON MODE POWER LINE CHOKE

## STR1206 SERIES

### FEATURES:

- Approx. 0.7% stray inductance for differential-mode interference suppression
- Suitable for reflow soldering
- Design complies with EN 60938-2 (VDE 0565-2) and UL 1283
- RoHS-compatible

### APPLICATIONS:

- Suppression of common-mode interferences
- Compact switch-mode power applications
- Compact electronic ballasts in lamps



### ELECTRICAL CHARACTERISTICS:

| Part Number  | L(mH)<br>+50%/-30% | Lk(μH)<br>Typ | Rated Current<br>(A) | RDC(mΩ)<br>Max |
|--------------|--------------------|---------------|----------------------|----------------|
| STR1206-112Y | 1.1                | 6             | 2.0                  | 65             |
| STR1206-162Y | 1.6                | 10            | 1.5                  | 110            |
| STR1206-302Y | 3.0                | 20            | 1.0                  | 220            |
| STR1206-442Y | 4.4                | 30            | 0.6                  | 400            |
| STR1206-123Y | 12                 | 80            | 0.3                  | 1100           |
| STR1206-223Y | 22                 | 130           | 0.3                  | 1500           |

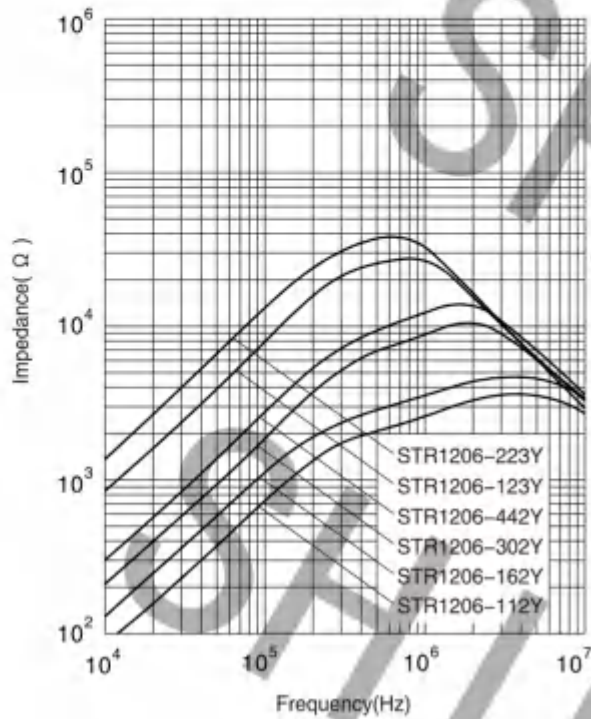
### PHYSICAL CHARACTERISTICS:



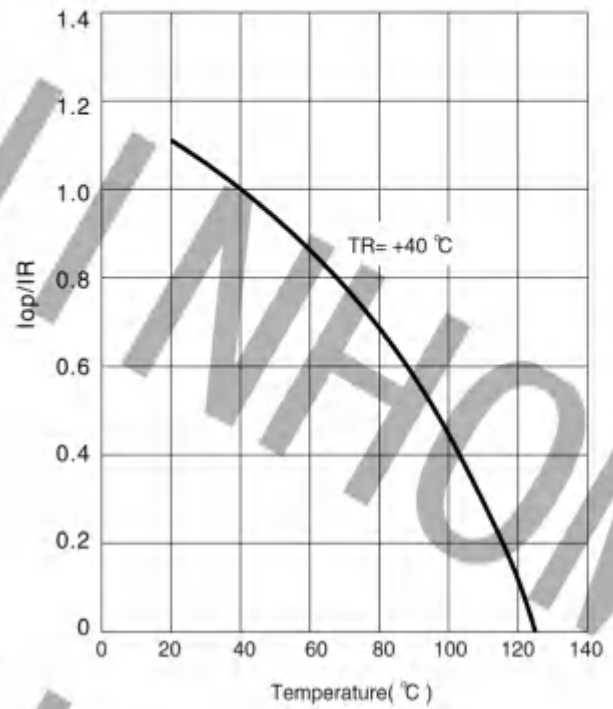
### Notes:

Rated voltage.....250Vac  
 Frequency.....50/60Hz  
 Insulation test voltage.....1500V  
 Operating temperature.....-25 °C to +125 °C  
 Housing.....UL94 V-0

Impedance  $|Z|$  versus frequency  $F$   
measured with windings in parallel at  $+20^{\circ}\text{C}$   
typical values

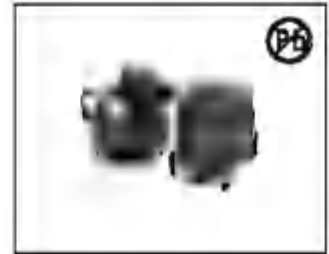


Current derating  $I_{op}/I_R$   
versus ambient temperature  $T_A$





# COMMON MODE CHOKE COIL STR804 SERIES



## FEATURES:

- Wire wound constructure common mode choke with best EMI suppression effect high impedance but very high rated current and low DCR.

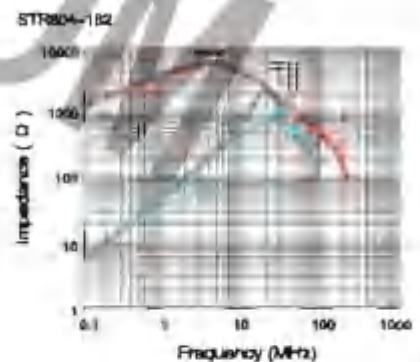
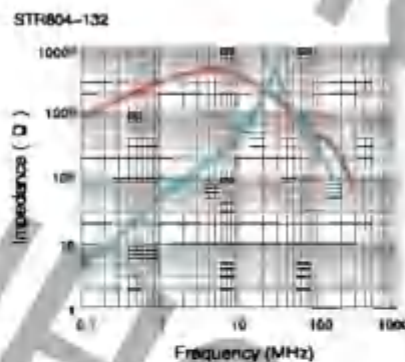
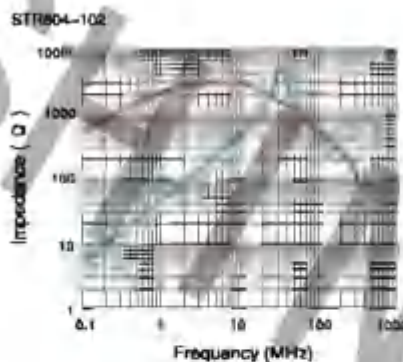
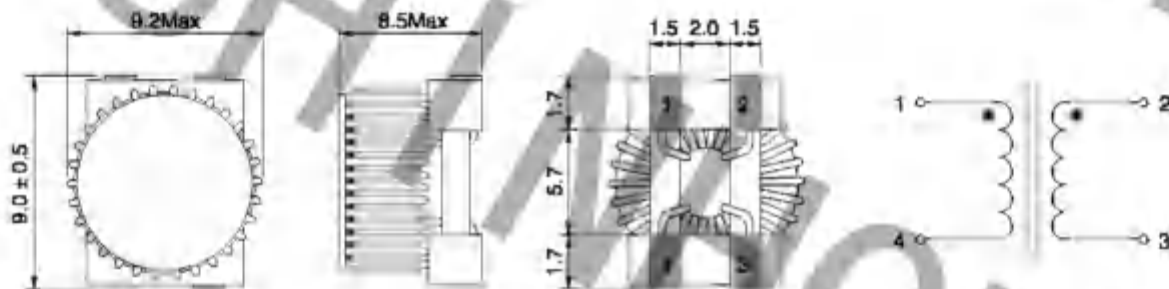
## APPLICATIONS :

- Preventive measures against common mode noise radiation emissions from power line or else.
- Best for high current circuit such as car, wireless charging and power device design.

## ELECTRICAL CHARACTERISTICS@25°C

| Part Number | Impedance (Ω)Ref<br>N1=N2 | Test frequency | DCR (mΩ)Max | IDC (A)Max |
|-------------|---------------------------|----------------|-------------|------------|
| STR804-102  | 1000                      | 100KHz/0.25V   | 100         | 2.5        |
| STR804-132  | 1300                      | 100KHz/0.25V   | 115         | 2.4        |
| STR804-162  | 1600                      | 100KHz/0.25V   | 130         | 2.3        |

## PHYSICAL CHARACTERISTICS & WINDING



— Common mode  
— Differential mode

## Note:

- Z test with HP4181A or HP4396A
- RDC:QuadTech 1880 Milliohmimeter
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C
- Resistance to soldering heat:260°C for 10 seconds

Note:All specifications subject to change without notice.



## SMT COMMON MODE CHOKES

### STRF01 SERIES

#### FEATURES:

- Common mode chokes for AC power lines
- High impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

#### APPLICATIONS:

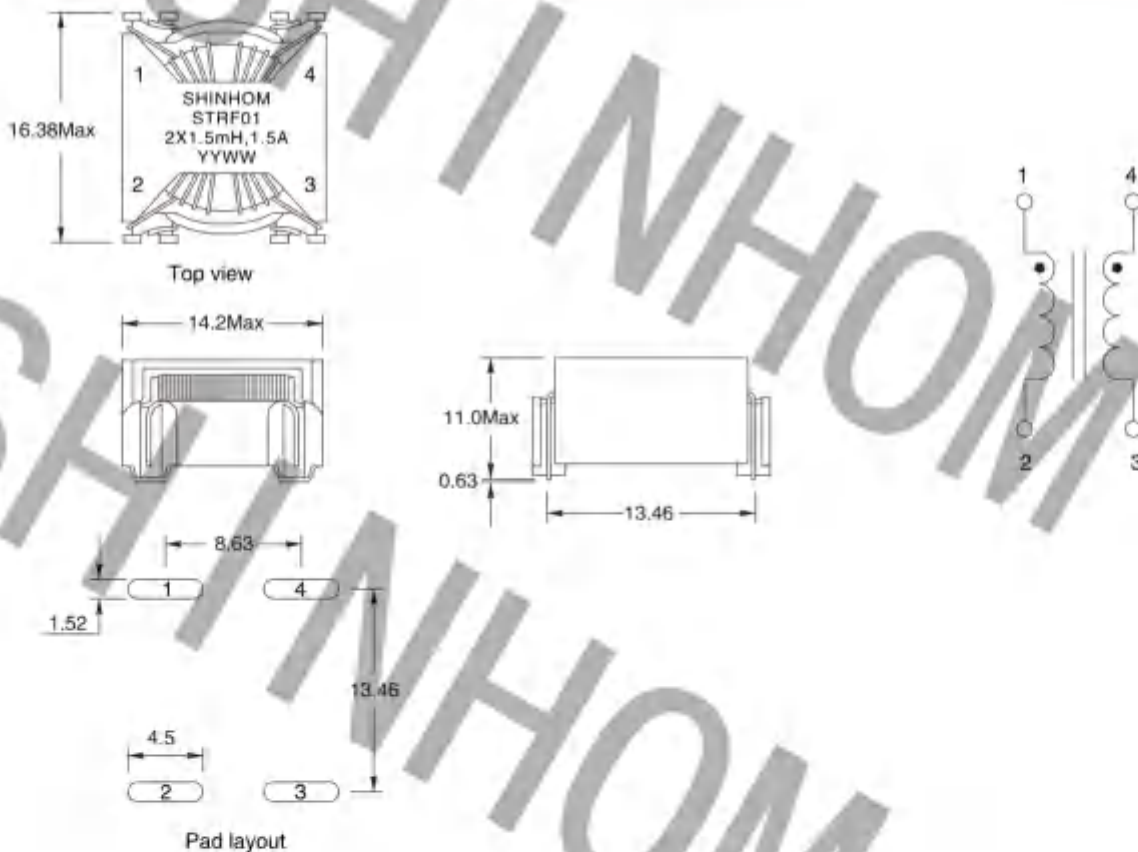
- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies



#### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(uH)Min<br>10KHz,0.1V | IDC<br>(A)Max | DCR<br>(mΩ)Max | Hi-Pot<br>1mA/2S/60Hz<br>(Vac) |
|-------------|--------------------------------|---------------|----------------|--------------------------------|
| STRF01-651Y | 650                            | 3.6           | 50             | 1000                           |
| STRF01-801Y | 800                            | 1.5           | 60             | 1000                           |
| STRF01-152Y | 1500                           | 1.5           | 60             | 1000                           |
| STRF01-602Y | 6000                           | 1.0           | 450            | 1000                           |
| STRF01-153Y | 15000                          | 1.0           | 600            | 1000                           |

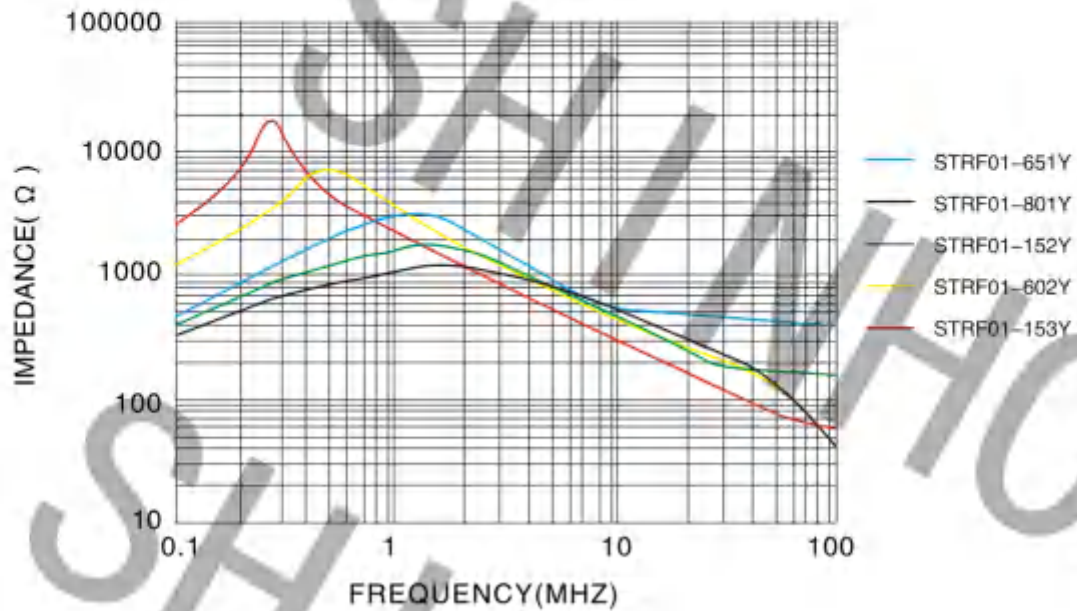
#### PHYSICAL CHARACTERISTICS & WINDING



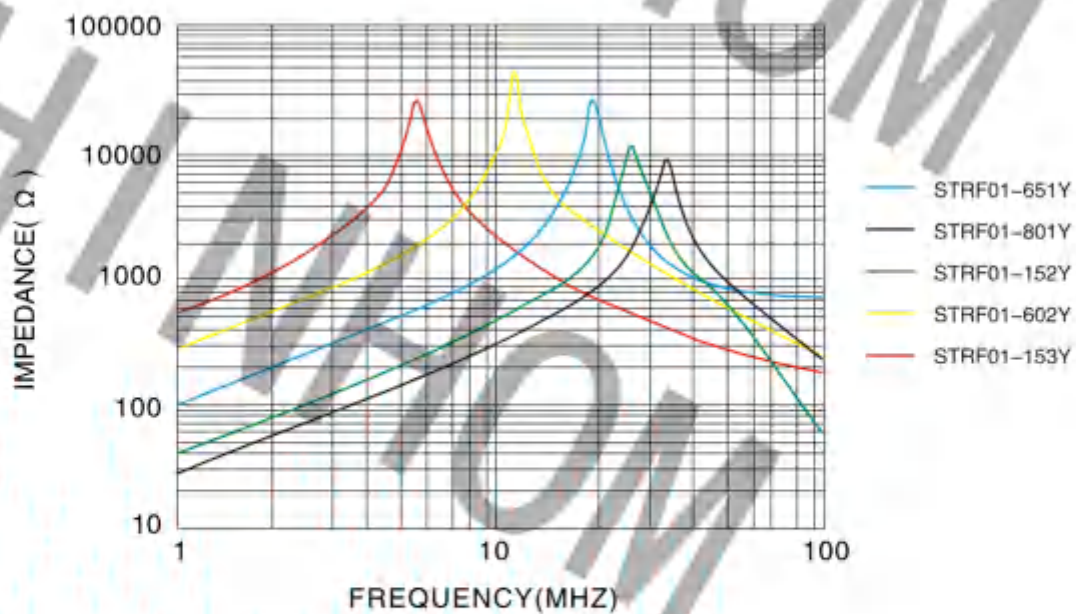
#### NOTES:

Temperature Rise ..... 40°C typical at IDC  
 Operating Temperature ..... -40°C to +125°C (including self temperature rise)  
 Storage Temperature ..... -40°C to +125°C  
 Soldering ..... 245°C, 5 seconds max  
 Dielectric Strength ..... 1000 Vrms between windings

## IMPEDANCE COMMON MODE



## IMPEDANCE DIFFERENTIAL MODE



## COMMON MODE POWER LINE CHOKE

### STRF012 SERIES

#### FEATURES:

- SMD Power line choke
- Compact size
- Toroidal core with sector winding
- High attenuation of common mode interferences in low and middle frequency range

#### APPLICATIONS:

- Power electronics
- SMPS
- Mains filter

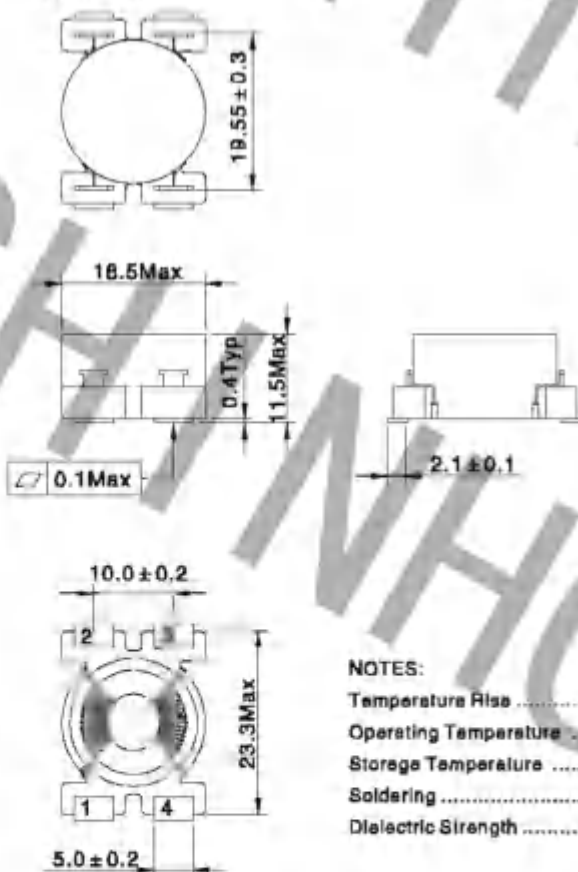


#### ELECTRICAL CHARACTERISTICS:

| Part Number  | L (mH) | Tolerance (%) | Rated Current (A) | RDC max. (Ω) |
|--------------|--------|---------------|-------------------|--------------|
| STRF012-701N | 0.7    | ±30           | 4.0               | 0.03         |
| STRF012-102N | 1.0    |               | 2.0               | 0.06         |
| STRF012-222N | 2.2    |               | 2.0               | 0.10         |
| STRF012-332N | 3.3    |               | 1.5               | 0.15         |
| STRF012-682N | 6.8    |               | 1.0               | 0.30         |
| STRF012-103N | 10     |               | 0.7               | 0.55         |
| STRF012-273N | 27     |               | 0.4               | 1.20         |
| STRF012-393N | 39     |               | 0.4               | 1.70         |
| STRF012-473N | 47     |               | 0.3               | 2.80         |

#### PHYSICAL CHARACTERISTICS:

Dimensions 1



Winding



Pad layout

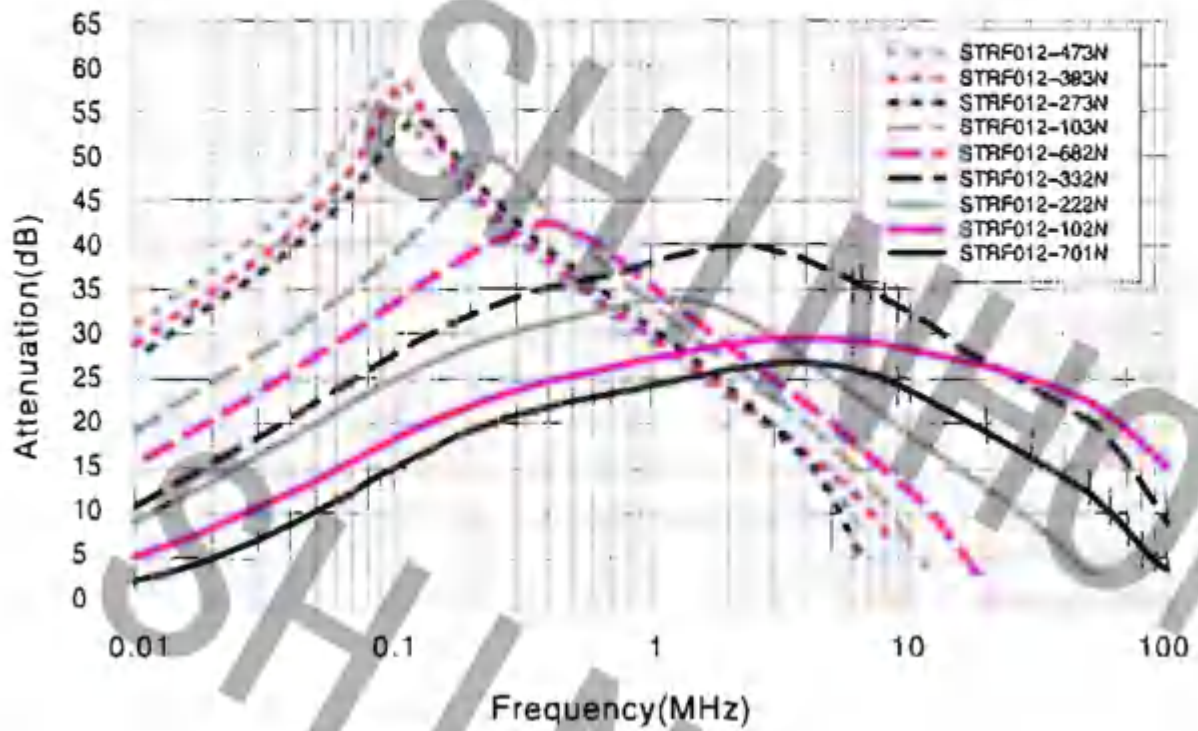


#### NOTES:

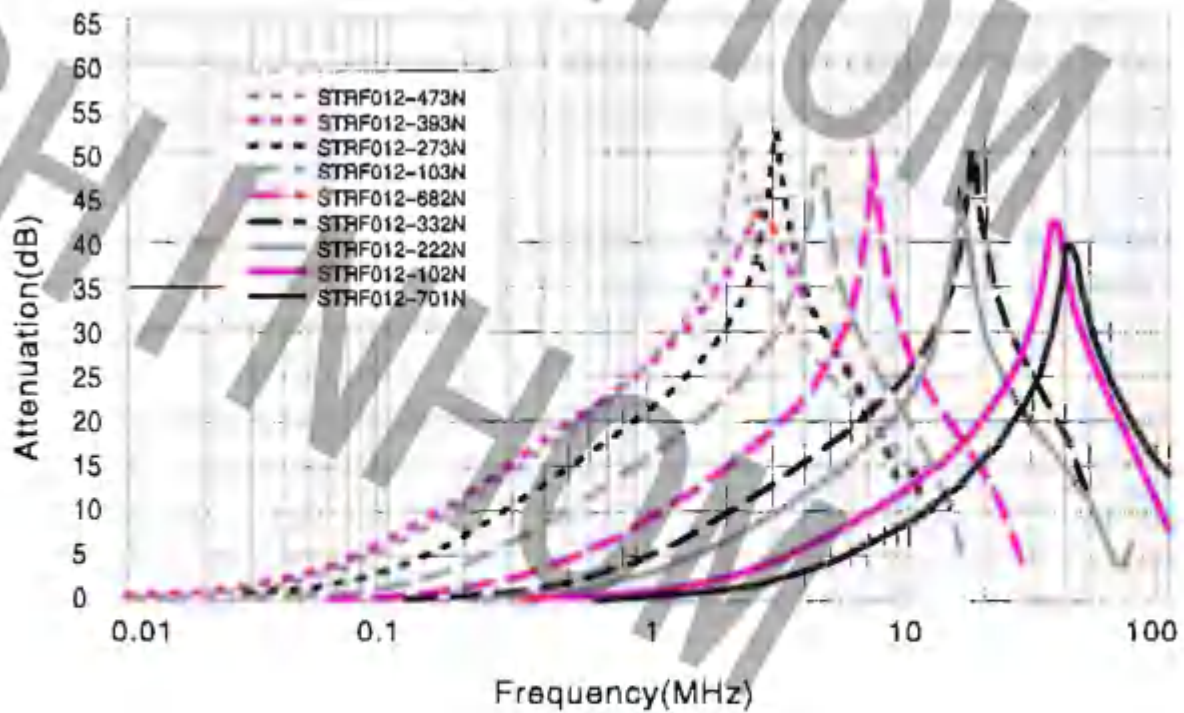
- Temperature Rise .....40°C typical at IDC
- Operating Temperature .....-40°C to +125°C(Including self temperature rise)
- Storage Temperature .....-40°C to +125°C
- Soldering .....245°C, 5 seconds max
- Dielectric Strength .....1000 Vrms between windings



## ATTENUATION COMMON MODE



## ATTENUATION DIFFERENTIAL MODE





## SMT COMMON MODE CHOKES

### STRF04 SERIES

#### FEATURES:

- Common mode chokes for AC power lines
- High impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

#### APPLICATIONS:

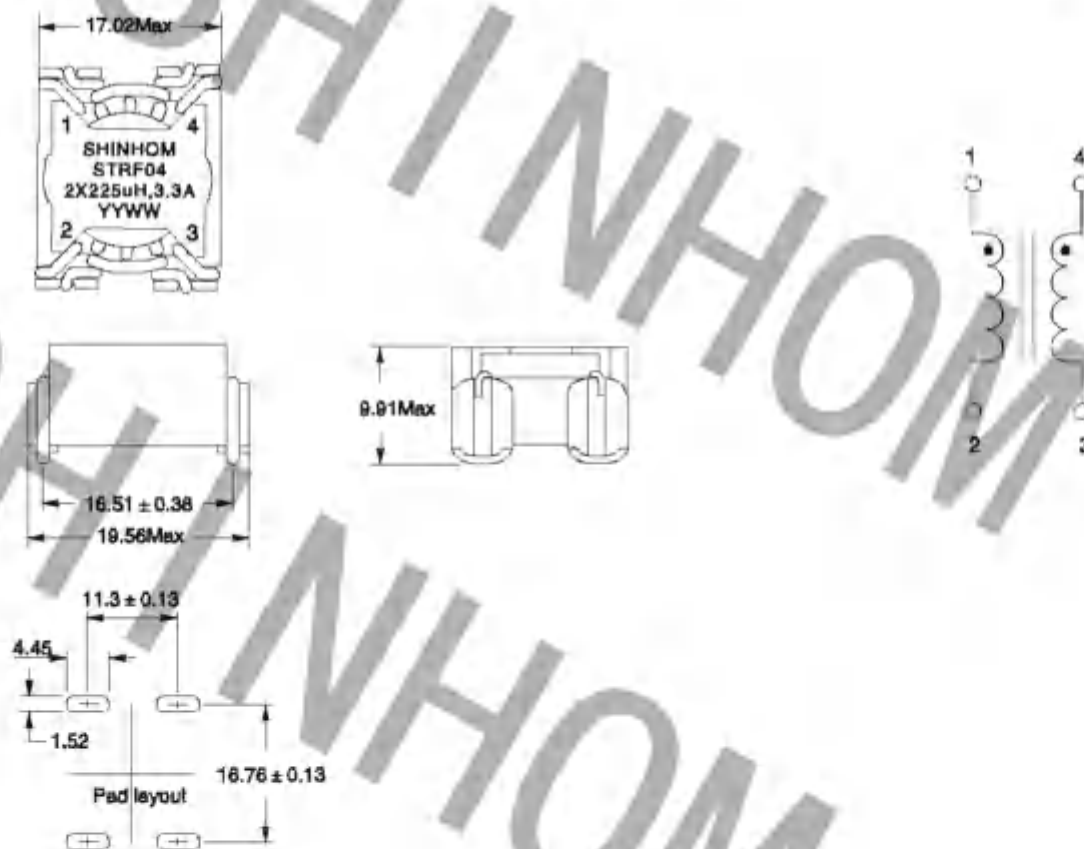
- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies



#### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>( $\mu$ H) $\pm$ 35%<br>10KHz, 0.1V | IDC<br>(A)Max | DCR<br>(m $\Omega$ )Max | Hi-Pot<br>1mA/2S/80Hz<br>(Vac) |
|-------------|----------------------------------------------|---------------|-------------------------|--------------------------------|
| STRF04-221Y | 225                                          | 3.3           | 60                      | 1000                           |
| STRF04-591Y | 590                                          | 5.6           | 21                      | 1000                           |
| STRF04-771Y | 770                                          | 4.7           | 40                      | 1000                           |
| STRF04-132Y | 1320                                         | 3.3           | 60                      | 1000                           |
| STRF04-152Y | 1470                                         | 2.8           | 80                      | 1000                           |

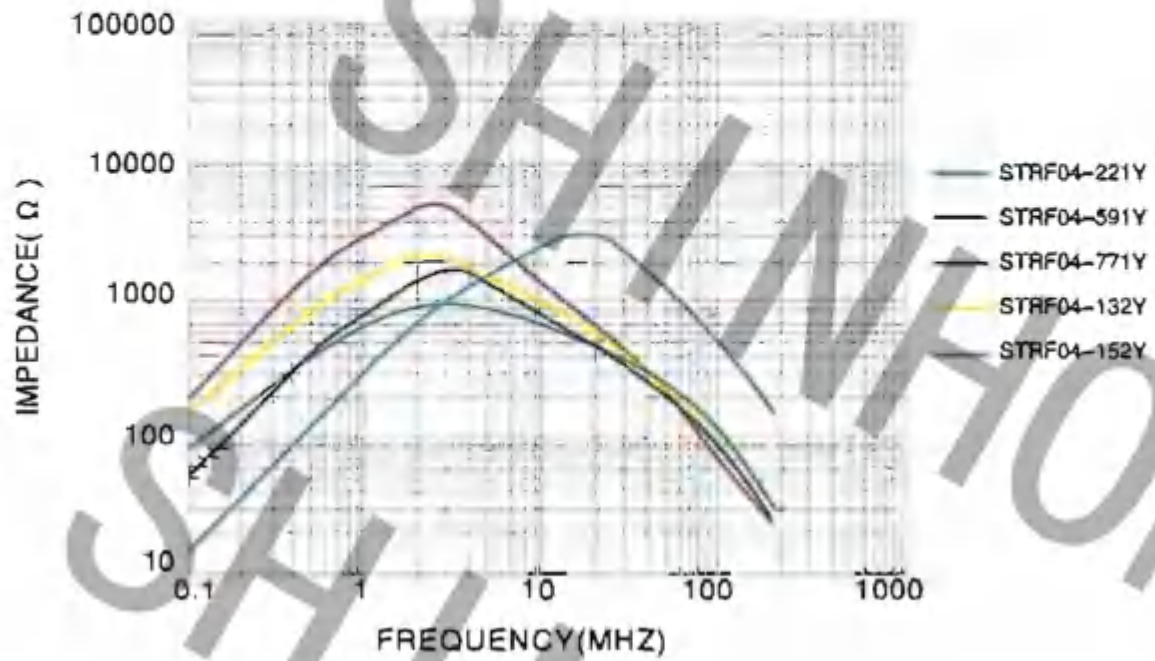
#### PHYSICAL CHARACTERISTICS & WINDING



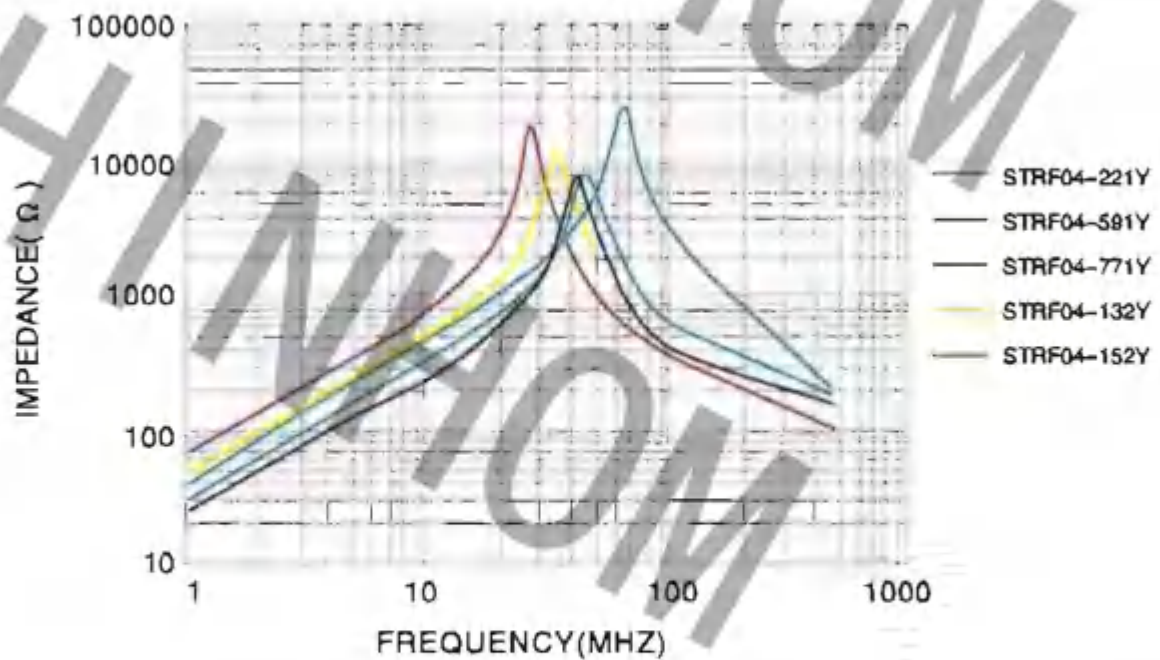
#### NOTES:

|                       |                                                   |
|-----------------------|---------------------------------------------------|
| Temperature Rise      | 40°C typical at IDC                               |
| Operating Temperature | -40°C to +125°C (including self temperature rise) |
| Storage Temperature   | -40°C to +125°C                                   |
| Soldering             | 245°C, 5 seconds max                              |
| Dielectric Strength   | 1000 Vrms between windings                        |

## IMPEDANCE COMMON MODE



## IMPEDANCE DIFFERENTIAL MODE



## SMT COMMON MODE CHOKES

### STRF06 SERIES

#### FEATURES:

- Common mode chokes for AC power lines
- High impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

#### APPLICATIONS:

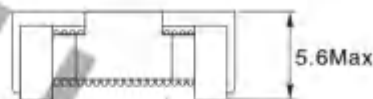
- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies



#### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>( $\mu$ H) $\pm$ 35%<br>100KHz, 0.1V | iDC<br>(A)Max | DCR<br>(m $\Omega$ )Max | Hi-Pot<br>1mA/2S/60Hz<br>(Vac) |
|-------------|-----------------------------------------------|---------------|-------------------------|--------------------------------|
| STRF06-881Y | 880                                           | 1.63          | 110                     | 1000                           |
| STRF06-112Y | 1170                                          | 1.22          | 200                     | 1000                           |
| STRF06-302Y | 3000                                          | 0.85          | 280                     | 1000                           |
| STRF06-392Y | 3900                                          | 0.85          | 350                     | 1000                           |
| STRF06-682Y | 6800                                          | 0.30          | 700                     | 1000                           |

#### PHYSICAL CHARACTERISTICS & WINDING



Pad layout

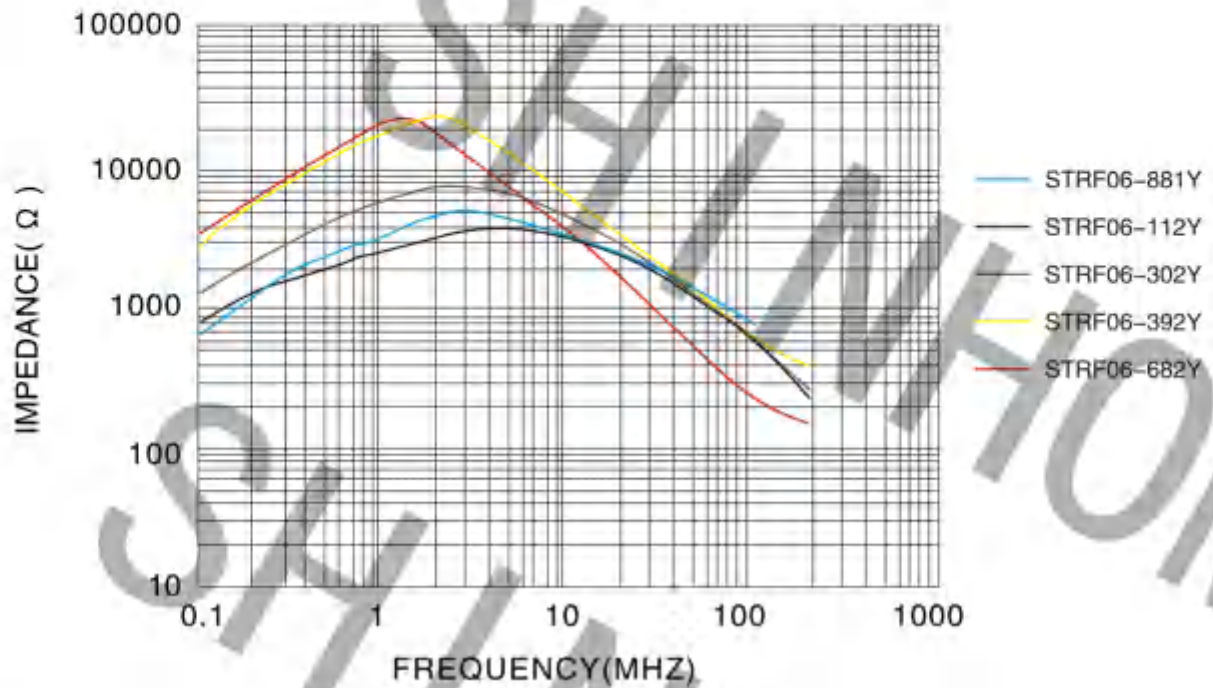


#### NOTES:

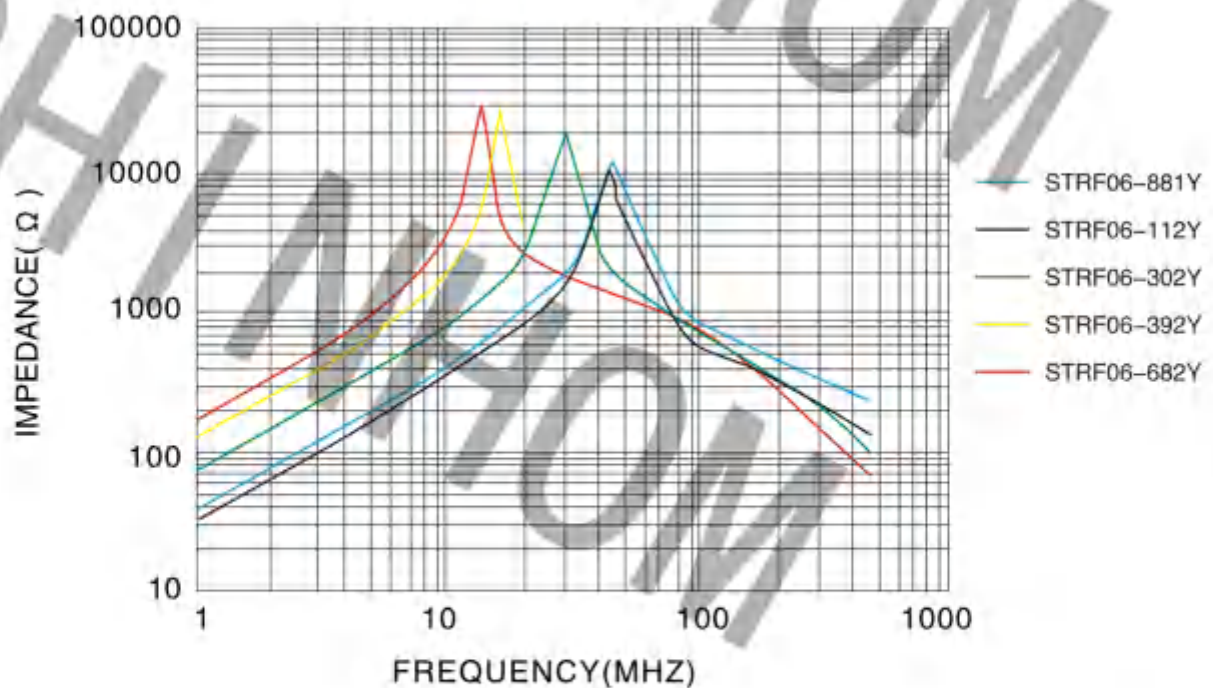
Temperature Rise .....40°C typical at IDC  
 Operating Temperature .....-40°C to +125°C(Including self temperature rise)  
 Storage Temperature .....-40°C to +125°C  
 Soldering .....245°C, 5 seconds max  
 Dielectric Strength .....1000 Vrms between windings



## IMPEDANCE COMMON MODE



## IMPEDANCE DIFFERENTIAL MODE





## COMMON MODE CHOKE STRF07 SERIES

### FEATURES:

- Common mode choke for AC power lines
- High impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

### APPLICATIONS:

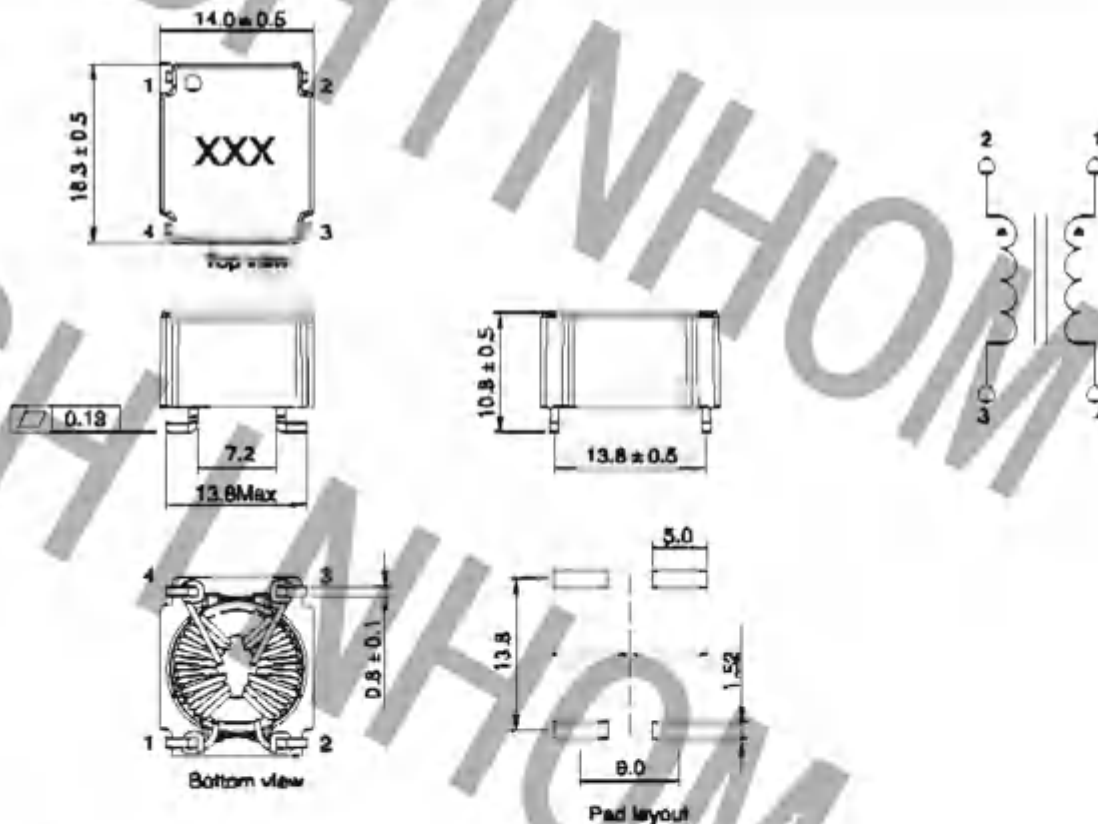
- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies



### ELECTRICAL CHARACTERISTICS:

| Part Number | L(ΔA)<br>(mH) Min<br>10KHz, 0.1V | DCR<br>(mΩ) Max | IDC<br>(A) Max | Hi-Pot<br>(Vdc)<br>50Hz, 1mA, 1s |
|-------------|----------------------------------|-----------------|----------------|----------------------------------|
| BTRF07-6S1Y | 0.66                             | 20              | 3              | 1000                             |
| BTRF07-601Y | 0.8                              | 33              | 2.4            | 1000                             |
| BTRF07-1S2Y | 1.5                              | 70              | 1.6            | 1000                             |
| BTRF07-602Y | 8.0                              | 200             | 0.8            | 1000                             |
| BTRF07-103Y | 10.0                             | 500             | 0.5            | 1000                             |

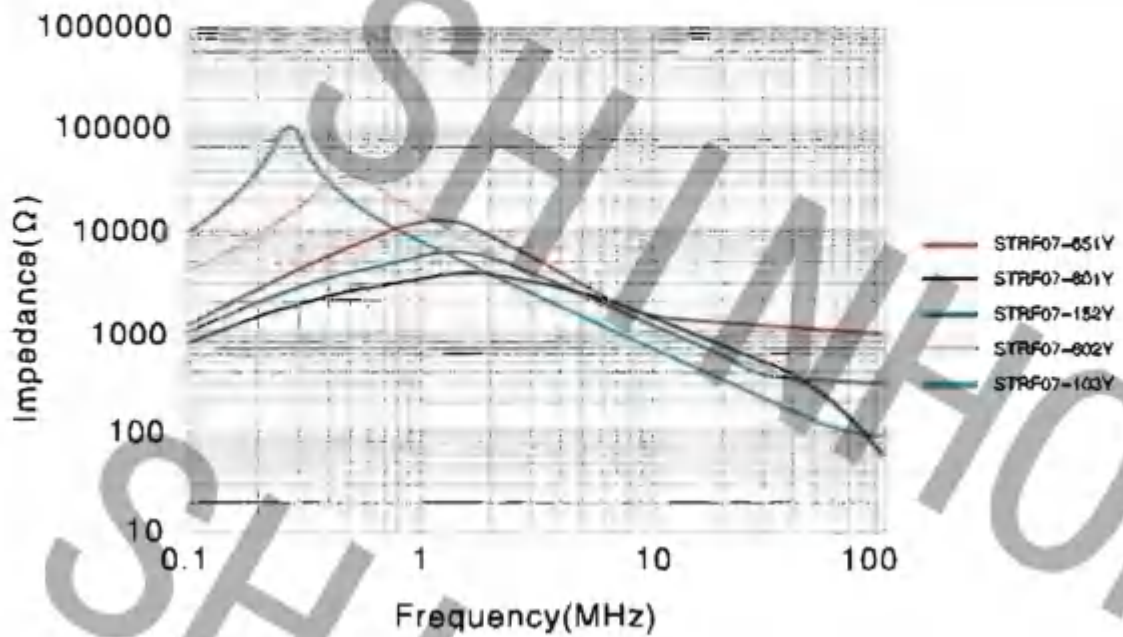
### PHYSICAL CHARACTERISTICS



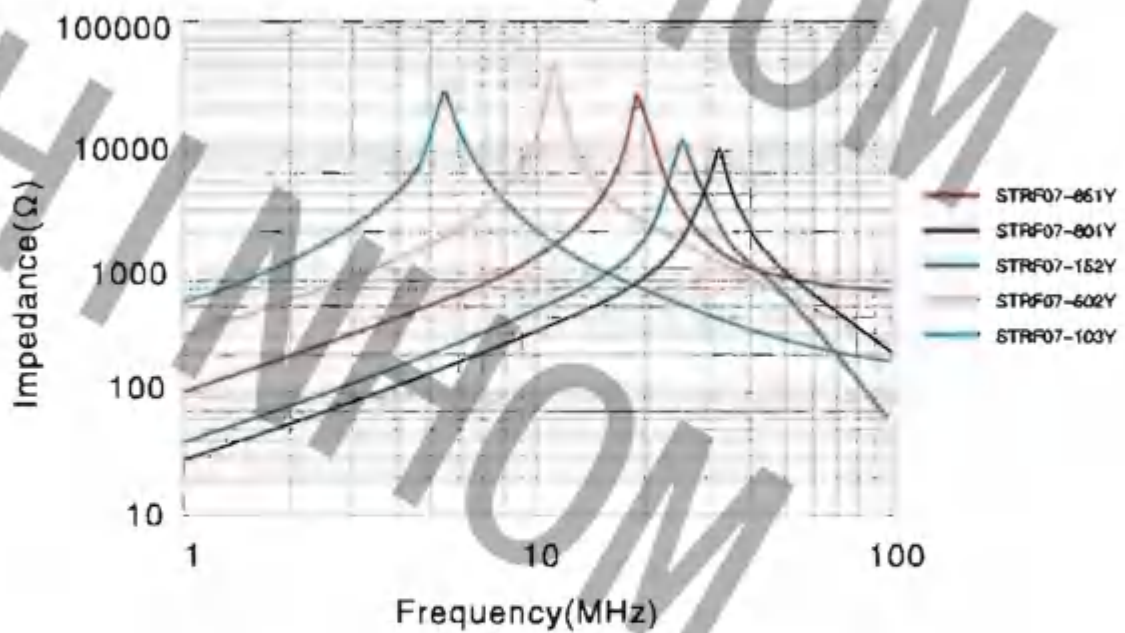
### NOTES:

- Temperature Rise ..... 40°C typical at IDC  
 Operating Temperature ..... -40°C to +125°C (including self temperature rise)  
 Storage Temperature ..... -40°C to +125°C  
 Soldering ..... 245°C, 5 seconds max  
 Dielectric Strength ..... 1000 Vrms between windings

## IMPEDANCE COMMON MODE



## IMPEDANCE DIFFERENTIAL MODE



# SMT COMMON MODE CHOKES

## STRF16 SERIES

### FEATURES:

- Common mode chokes for AC power lines
- High impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

### APPLICATIONS:

- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

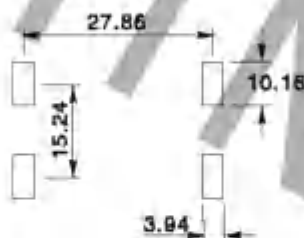


### ELECTRICAL CHARACTERISTICS:

| Part Number   | L(0A)<br>( $\mu$ H) $\pm$ 35%<br>100KHz, 0.1V | IDC<br>(A)Max | DCR<br>(m $\Omega$ )Max | Hi-Pot<br>1mA/2S/60Hz<br>(Vac) |
|---------------|-----------------------------------------------|---------------|-------------------------|--------------------------------|
| STRF016□-131Y | 135                                           | 26            | 3.5                     | 1000                           |
| STRF016□-221Y | 225                                           | 20            | 6.0                     | 1000                           |
| STRF016□-471Y | 470                                           | 14            | 8.0                     | 1000                           |
| STRF016□-631Y | 630                                           | 11.6          | 10                      | 1000                           |
| STRF016□-821Y | 820                                           | 7.0           | 15                      | 1000                           |

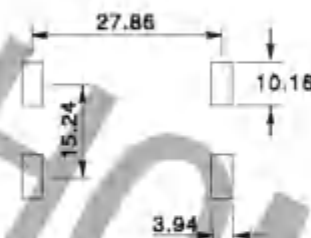
### PHYSICAL CHARACTERISTICS & WINDING

STRF016A

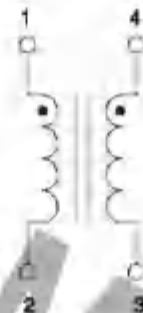


Suggested pad layout

STRF016B



Suggested pad layout

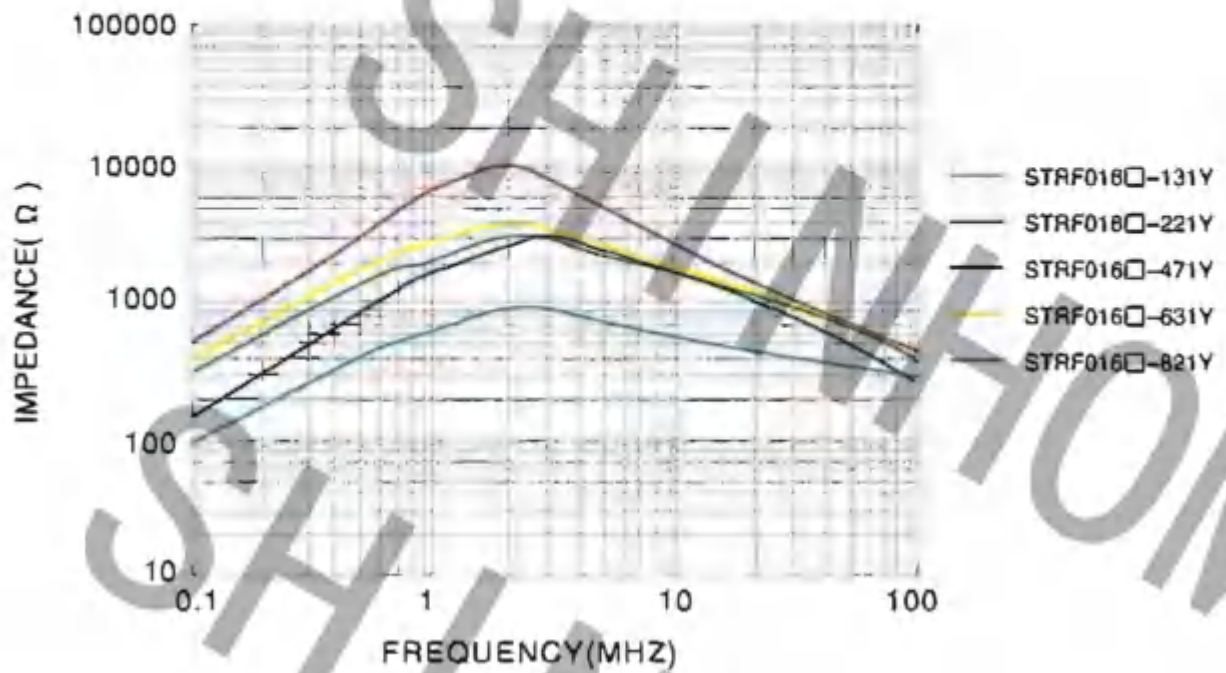


### NOTES:

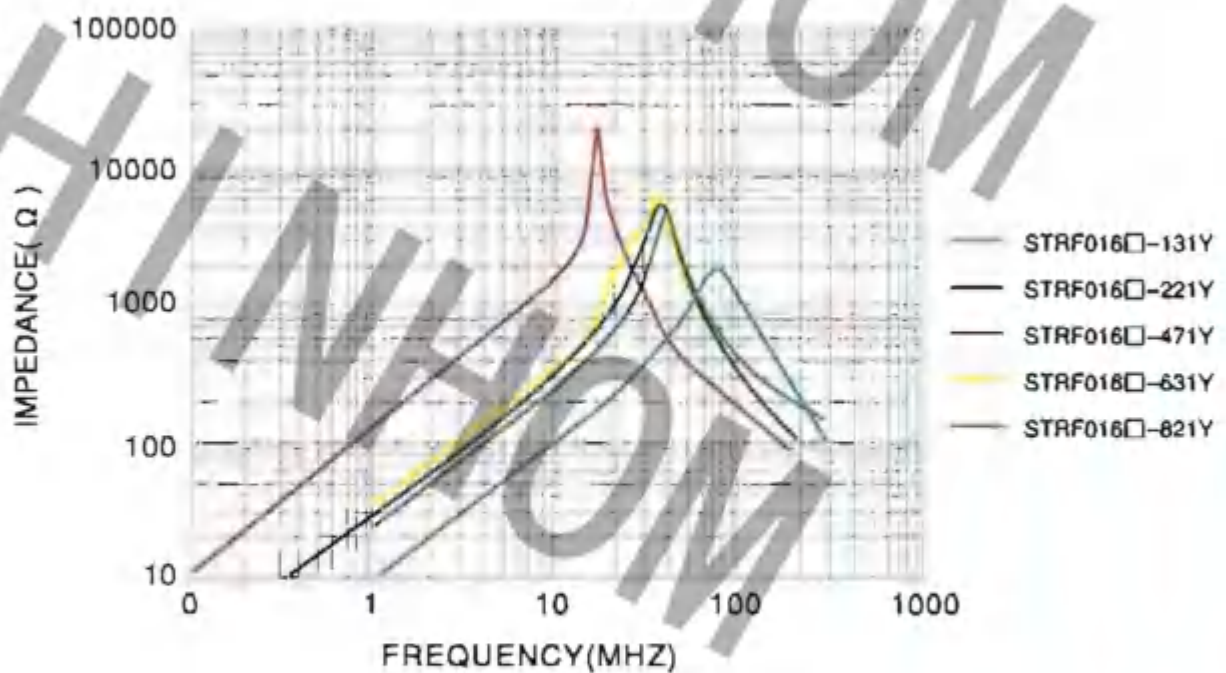
- Temperature Rise ..... 40°C typical at IDC
- Operating Temperature ..... -40°C to +125°C (including self temperature rise)
- Storage Temperature ..... -40°C to +125°C
- Soldering ..... 245°C, 5 seconds max
- Dielectric Strength ..... 1000 Vrms between windings



## IMPEDANCE COMMON MODE



## IMPEDANCE DIFFERENTIAL MODE





## SMT COMMON MODE CHOKES

### STRF1614 SERIES

#### FEATURES:

- Common mode chokes for AC power lines
- High impedance to minimize common mode noise
- Excellent EMI performance
- Meets UL94V-0 flammability standard

#### APPLICATIONS:

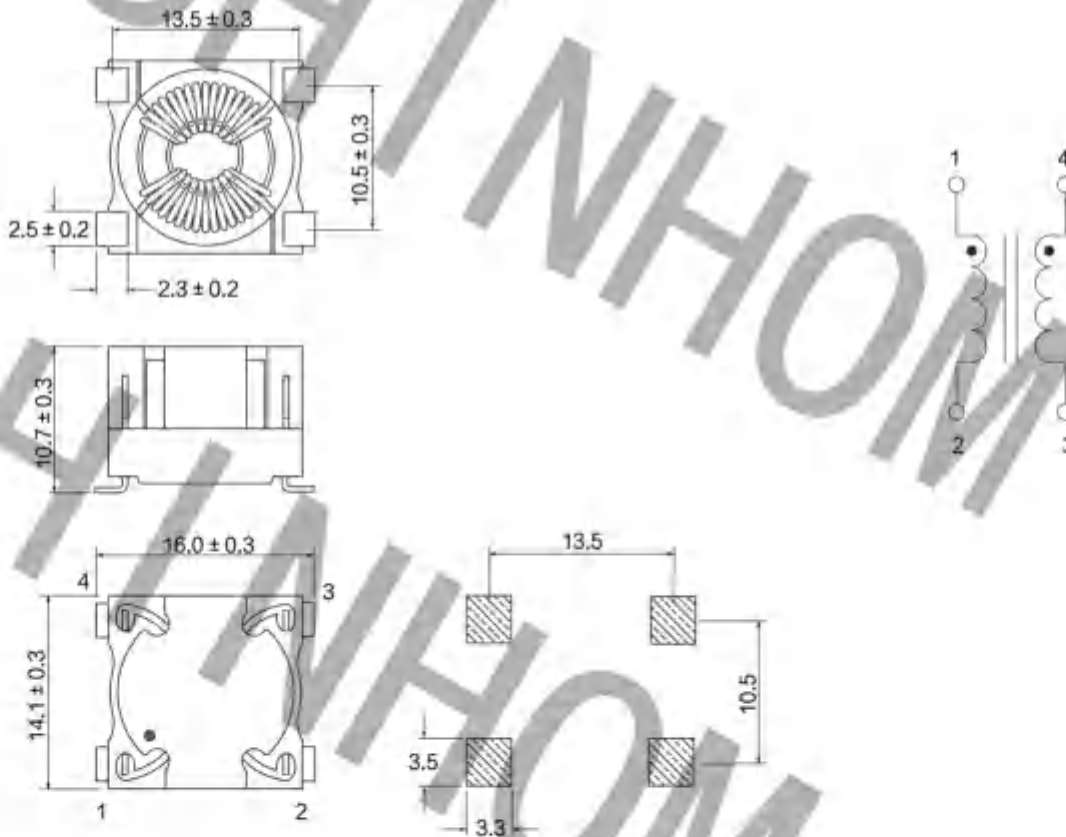
- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies



#### ELECTRICAL CHARACTERISTICS:

| Part Number   | L(0A)<br>(mH)Min<br>10KHz,0.1V | IDC<br>(A)Max | DCR<br>(mΩ)Max | Hi-Pot<br>1mA/3S/60Hz<br>(Vac) |
|---------------|--------------------------------|---------------|----------------|--------------------------------|
| STRF1614-651Y | 0.65                           | 3.0           | 20             | 1000                           |
| STRF1614-801Y | 0.8                            | 2.4           | 33             | 1000                           |
| STRF1614-152Y | 1.5                            | 1.6           | 70             | 1000                           |
| STRF1614-602Y | 6.0                            | 0.9           | 200            | 1000                           |
| STRF1614-153Y | 15.0                           | 0.5           | 500            | 1000                           |

#### PHYSICAL CHARACTERISTICS & WINDING



#### NOTES:

Temperature Rise .....40°C typical at IDC  
 Operating Temperature .....-40°C to +125°C(Including self temperature rise)  
 Storage Temperature .....-40°C to +125°C  
 Soldering .....245°C, 5 seconds max  
 Dielectric Strength .....1000 Vrms between windings

## WIRE-WOUND SMT POWER COMMON-MODE CHOKES STRF2210 SERIES



### FEATURES:

- Small size with high current
- Stable performance under load bias and high reliability
- High suppression of asymmetric interferences at both low and high frequency
- SMT Type with less height

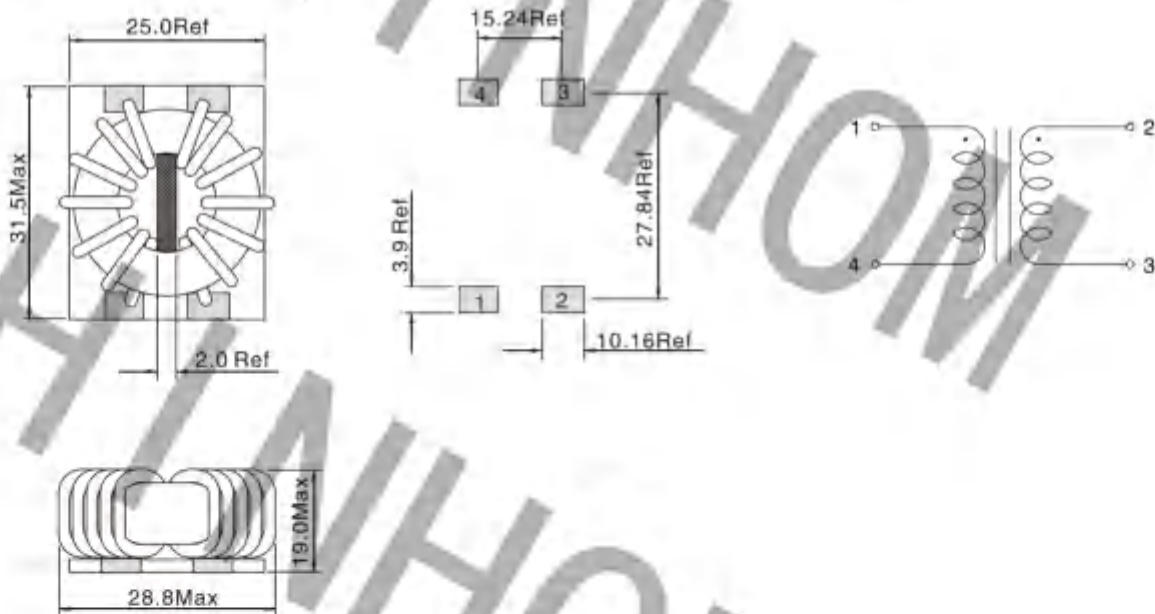
### APPLICATIONS:

- Interferences suppression of common mode noise
- Power line filter
- Switch-mode power supplies

### ELECTRICAL CHARACTERISTICS:

| Part Number   | Inductance (uH)<br>+35%/-40% | Turns ratio<br>20KHz, 1V<br>N1:N2 | DCR (mΩ)<br>Max | Rated Current (A)<br>Max | Hi-Pot<br>60Hz, 10mA, 2S<br>(V) |
|---------------|------------------------------|-----------------------------------|-----------------|--------------------------|---------------------------------|
| STRF2210-680Y | 68                           | 1:1                               | 0.56            | 50                       | 1500                            |
| STRF2210-181Y | 180                          | 1:1                               | 1.35            | 32                       | 1500                            |
| STRF2210-321Y | 320                          | 1:1                               | 2.5             | 28                       | 1500                            |
| STRF2210-621Y | 620                          | 1:1                               | 3.5             | 20                       | 1500                            |
| STRF2210-801Y | 800                          | 1:1                               | 5.3             | 16                       | 1500                            |
| STRF2210-132Y | 1300                         | 1:1                               | 10              | 11                       | 1500                            |
| STRF2210-182Y | 1800                         | 1:1                               | 14              | 9                        | 1500                            |

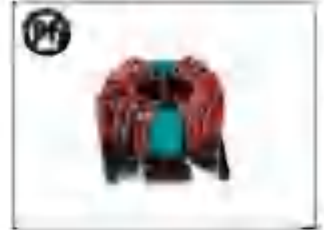
### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS:



- Inductance Testing: 100KHz, 0.1V
- Operating temperature: -40°C to +125°C (Including self temperature rise)
- Storage Temperature: -40°C to +125°C
- Resistance to soldering heat: 260°C for 10 seconds

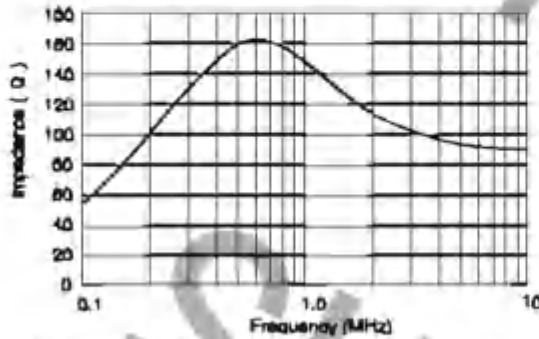
Note: All specifications subject to change without notice.

# WIRE-WOUND SMT POWER COMMON-MODE CHOKES STRF2210 SERIES

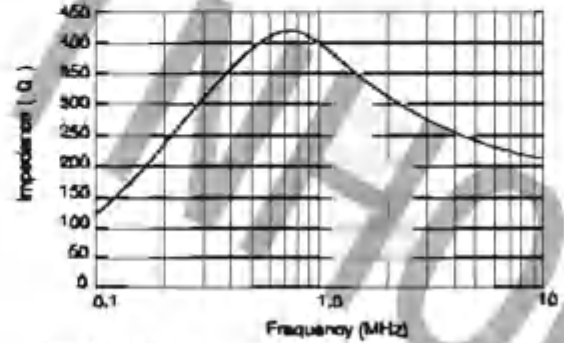


## IMPEDANCE vs FREQUENCY:

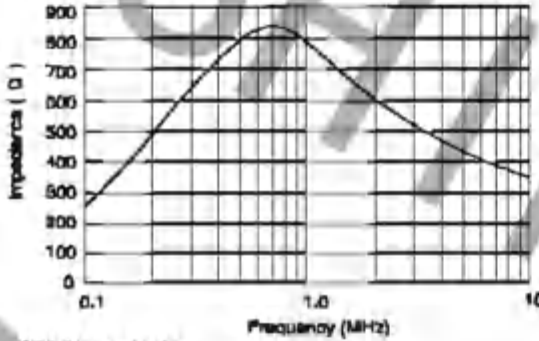
STRF2210-880Y



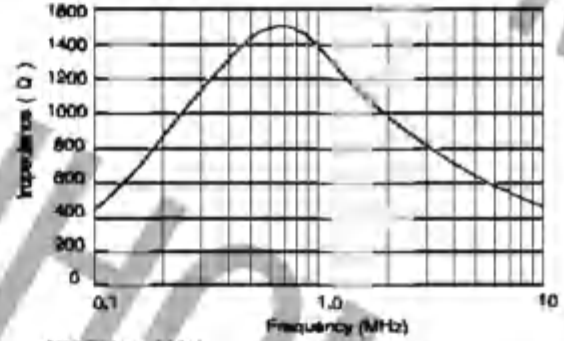
STRF2210-181V



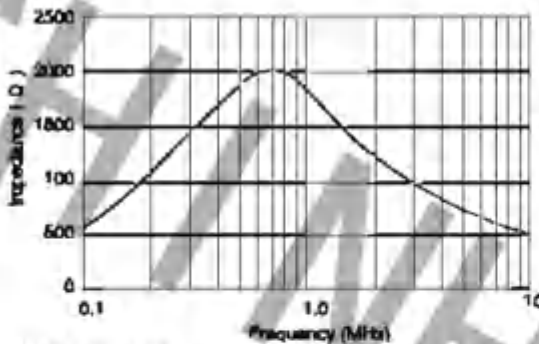
STRF2210-921Y



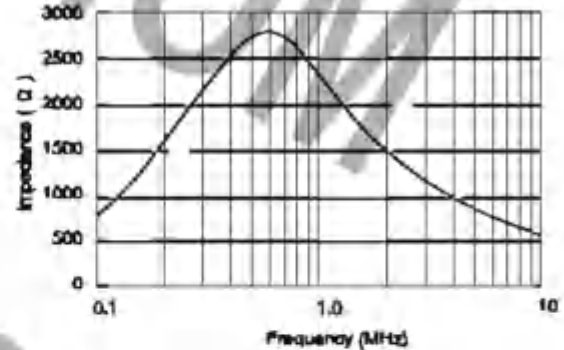
STRF2210-821V



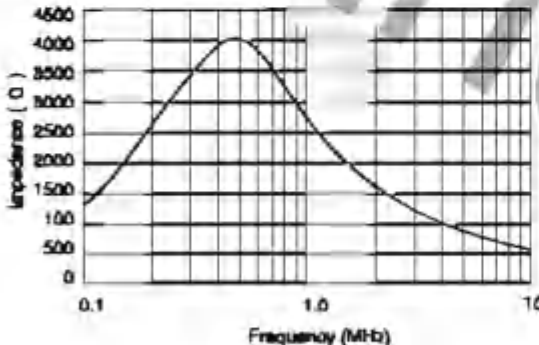
STRF2210-801V



STRF2210-132V



STRF2210-182V







## SMD COMMON MODE CHOKES

# STS01 SERIES

### FEATURES:

- Inductance range from 4.5uH to 205uH
- Current range up to 7.0 Amps
- High resonant frequency
- Meets UL94V-0 flammability standard
- Ferrite core material

### OPTIONS:

- Packaging: Tape & Reel is standard
- Bulk packaging available for smaller quantities

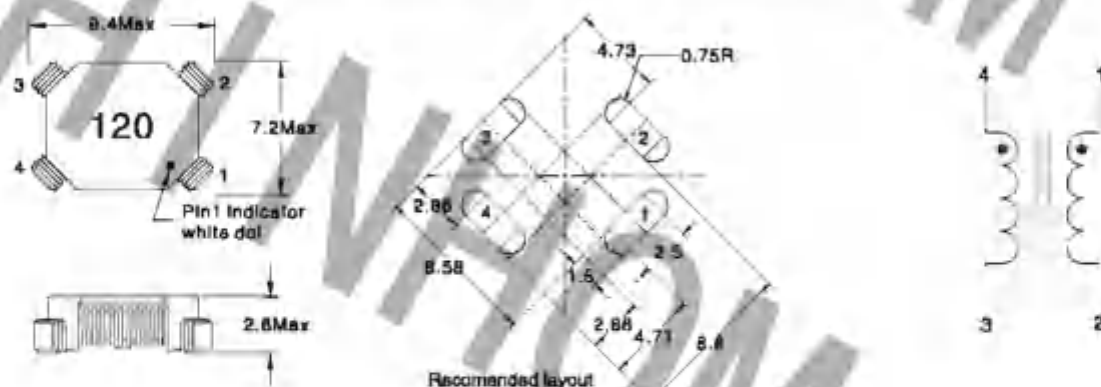
### COMMON APPLICATIONS:

- EMI filters
- DC-DC brick power supplies
- Discrete output supplies
- Discrete and point-of-use power supplies

### ELECTRICAL CHARACTERISTICS:

| Part Number | L(0A)<br>(uH) Min<br>100KHz, 0.1V | Leakage<br>Inductance<br>(uH) Typ | DCR<br>( $\Omega$ ) Typ | Irms<br>(A)<br>$\Delta T=40^{\circ}\text{C}$ | Interwinding<br>Capacitance<br>(pF) Typ |
|-------------|-----------------------------------|-----------------------------------|-------------------------|----------------------------------------------|-----------------------------------------|
| STS01-4R5Y  | 4.5                               | 0.05                              | 0.0027                  | 7.0                                          | 2.0                                     |
| STS01-8R0Y  | 8                                 | 0.09                              | 0.0040                  | 5.7                                          | 2.1                                     |
| STS01-120Y  | 12.6                              | 0.14                              | 0.0077                  | 4.1                                          | 2.2                                     |
| STS01-180Y  | 18                                | 0.20                              | 0.0089                  | 3.8                                          | 2.3                                     |
| STS01-250Y  | 25                                | 0.28                              | 0.01                    | 3.8                                          | 2.4                                     |
| STS01-320Y  | 32.8                              | 0.36                              | 0.0138                  | 3.1                                          | 2.5                                     |
| STS01-410Y  | 41.5                              | 0.45                              | 0.019                   | 2.8                                          | 2.6                                     |
| STS01-510Y  | 51.2                              | 0.56                              | 0.026                   | 2.2                                          | 2.7                                     |
| STS01-620Y  | 62                                | 0.68                              | 0.035                   | 1.9                                          | 2.7                                     |
| STS01-730Y  | 73.7                              | 0.81                              | 0.048                   | 1.65                                         | 2.8                                     |
| STS01-101Y  | 100                               | 1.10                              | 0.07                    | 1.35                                         | 2.9                                     |
| STS01-131Y  | 131                               | 1.45                              | 0.1                     | 1.15                                         | 3.0                                     |
| STS01-161Y  | 166                               | 1.83                              | 0.138                   | 1.0                                          | 3.1                                     |
| STS01-201Y  | 205                               | 2.25                              | 0.186                   | 0.85                                         | 3.2                                     |

### PHYSICAL CHARACTERISTICS & WINDING



#### NOTES:

- Inductance tested at 100KHz, 0.1V
- DCR Measured at 20°C
- Hi-Pot: 300V for 1 min. between windings
- Irms current: current for approx. a 40°C temperature rise at an ambient temperature of 85°C
- Operating temperature: -40°C to +125°C
- Storage temperature: -40°C to +105°C





## DUAL WINDING, SHIELDING INDUCTORS SDRH0703D SERIES

### Description:

- Four sizes of shielded drum core inductors
- Windings can be connected in series or parallel offering a broad range of inductance and current ratings
- Surface Mount

### Packaging:

- Supplied in tape and reel packaging
- 1350 (DRQ73), 1100 (DRQ74)
- 600 (DRQ125), and 350 (DRQ127) per reel

### Applications:

- As a transformer: SEPIC, flyback
- As an inductor: buck, boost, coupled inductor
- DC-DC converters
- VRM inductor for CPU and DDR power supplies
- Input and output filter chokes

### ELECTRICAL CHARACTERISTICS:

| Part Number    | Rated Inductance (μH) | Parallel ratings |                        |                         |           |             | Series ratings  |                        |                         |           |             |
|----------------|-----------------------|------------------|------------------------|-------------------------|-----------|-------------|-----------------|------------------------|-------------------------|-----------|-------------|
|                |                       | DCL ±20% (μH) ①  | I <sub>rms</sub> (A) ② | I <sub>peak</sub> (A) ③ | DCR (Ω) ④ | Volt-μsec ⑤ | DCL ±20% (μH) ① | I <sub>rms</sub> (A) ② | I <sub>peak</sub> (A) ③ | DCR (Ω) ④ | Volt-μsec ⑤ |
| SDRH0703D-R30M | 0.33                  | 0.306            | 6.19                   | 14.4                    | 0.0074    | 1.99        | 1.224           | 3.10                   | 7.13                    | 0.0296    | 3.96        |
| SDRH0703D-1R0M | 1.0                   | 0.992            | 5.25                   | 7.97                    | 0.0103    | 3.68        | 3.966           | 2.63                   | 3.99                    | 0.0411    | 7.12        |
| SDRH0703D-1R5M | 1.5                   | 1.482            | 4.64                   | 6.52                    | 0.0132    | 4.35        | 5.928           | 2.32                   | 3.26                    | 0.0527    | 8.72        |
| SDRH0703D-2R2M | 2.2                   | 2.070            | 4.11                   | 5.62                    | 0.0167    | 5.15        | 8.280           | 2.08                   | 2.76                    | 0.0659    | 10.3        |
| SDRH0703D-3R0M | 3.3                   | 3.540            | 3.31                   | 4.22                    | 0.0259    | 6.73        | 14.18           | 1.66                   | 2.11                    | 0.1035    | 13.5        |
| SDRH0703D-4R7M | 4.7                   | 4.432            | 3.09                   | 3.78                    | 0.0397    | 7.52        | 17.89           | 1.55                   | 1.69                    | 0.1188    | 15.0        |
| SDRH0703D-6R0M | 6.8                   | 6.480            | 2.56                   | 3.12                    | 0.0496    | 9.11        | 25.92           | 1.26                   | 1.56                    | 0.1742    | 18.2        |
| SDRH0703D-8R2M | 8.2                   | 8.990            | 2.18                   | 2.66                    | 0.0692    | 10.7        | 36.72           | 1.10                   | 1.33                    | 0.2368    | 21.4        |
| SDRH0703D-100M | 10                    | 10.30            | 2.08                   | 2.47                    | 0.0658    | 11.5        | 41.20           | 1.04                   | 1.24                    | 0.2623    | 23.0        |
| SDRH0703D-150M | 15                    | 15.01            | 1.83                   | 2.06                    | 0.0944    | 13.9        | 60.04           | 0.916                  | 1.03                    | 0.339     | 27.8        |
| SDRH0703D-220M | 22                    | 22.65            | 1.62                   | 1.67                    | 0.107     | 17.0        | 90.80           | 0.811                  | 0.93                    | 0.429     | 34.0        |
| SDRH0703D-330M | 33                    | 34.41            | 1.31                   | 1.35                    | 0.166     | 21.0        | 137.6           | 0.683                  | 0.86                    | 0.686     | 42.0        |
| SDRH0703D-470M | 47                    | 48.62            | 1.08                   | 1.14                    | 0.241     | 24.9        | 194.5           | 0.542                  | 0.57                    | 0.966     | 49.8        |
| SDRH0703D-680M | 68                    | 66.81            | 0.89                   | 0.96                    | 0.356     | 29.7        | 275.6           | 0.444                  | 0.46                    | 1.43      | 59.4        |
| SDRH0703D-820M | 82                    | 80.37            | 0.89                   | 0.89                    | 0.384     | 32.1        | 321.5           | 0.430                  | 0.44                    | 1.54      | 64.2        |
| SDRH0703D-101M | 100                   | 101.4            | 0.73                   | 0.79                    | 0.527     | 36.0        | 406.6           | 0.367                  | 0.38                    | 2.11      | 72.0        |
| SDRH0703D-151M | 150                   | 150.9            | 0.58                   | 0.65                    | 0.861     | 44.0        | 603.6           | 0.288                  | 0.32                    | 3.41      | 88.0        |
| SDRH0703D-221M | 220                   | 220.3            | 0.52                   | 0.63                    | 1.05      | 53.8        | 833.2           | 0.280                  | 0.27                    | 4.20      | 107         |
| SDRH0703D-331M | 330                   | 326.3            | 0.42                   | 0.44                    | 1.69      | 64.5        | 1302            | 0.211                  | 0.22                    | 6.36      | 129         |
| SDRH0703D-471M | 470                   | 465.6            | 0.35                   | 0.37                    | 2.59      | 77.2        | 1853            | 0.173                  | 0.16                    | 9.44      | 154         |
| SDRH0703D-681M | 680                   | 676.5            | 0.29                   | 0.31                    | 3.47      | 93.1        | 2706            | 0.143                  | 0.15                    | 13.88     | 186         |
| SDRH0703D-821M | 820                   | 821.7            | 0.27                   | 0.28                    | 3.93      | 100         | 3267            | 0.134                  | 0.14                    | 15.72     | 206         |
| SDRH0703D-102M | 1000                  | 995.0            | 0.26                   | 0.25                    | 4.34      | 113         | 3960            | 0.128                  | 0.13                    | 17.38     | 228         |

1) Open Circuit Inductance Test Parameters: 100kHz, 0.25 Vrms, 0.0 Adc Parallel: (1-2 ~4,3) Series: (1-4) tie (2-3)

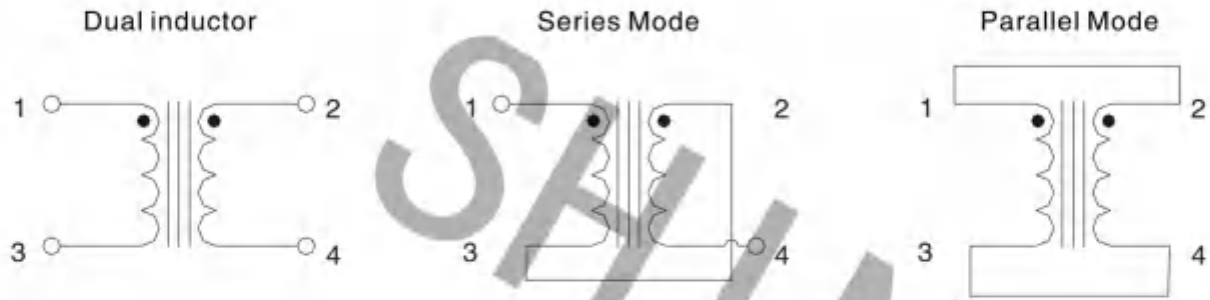
2) RMS current for an approximate DT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

3) Peak current for approximately 30% roll-off at 20°C

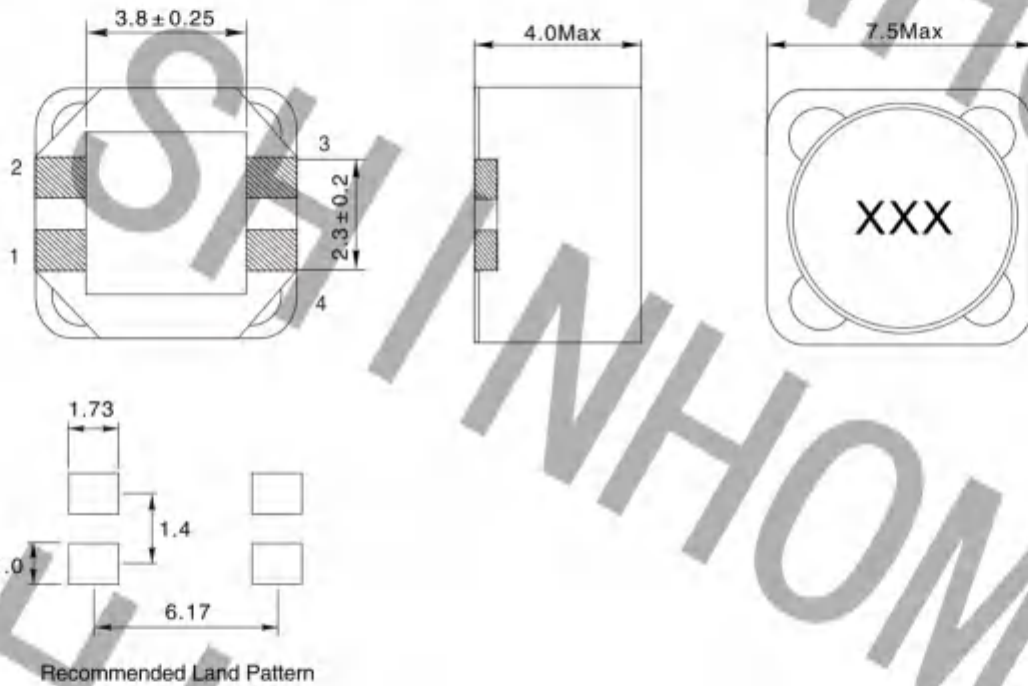
4) DCR limits @ 20°C

5) Applied Volt-Time product (V-μs) across the inductor. This value represents the applied V-μs at 100kHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise.

## SCHEMATIC



## PHYSICAL CHARACTERISTICS(Dimensions:mm)



### Notes:

1. 200Vac Isolation between windings
2. Storage temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
3. Operating temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (range is application specific).
4. Solder reflow temperature:  $260^{\circ}\text{C}$  max. for 10 seconds max.
5. Turns Ratio (1:3):(2-4)=1:1
6. All specifications subject to change without notice.



## DUAL WINDING, SHIELDING INDUCTORS

### SDRH0704D SERIES

#### Description:

- Four sizes of shielded drum core inductors
- Windings can be connected in series or parallel offering a broad range of inductance and current ratings
- Surface Mount

#### Packaging:

- Supplied in tape and reel packaging
- 1350 (DRQ73), 1100 (DRQ74)
- 600 (DRQ125), and 350 (DRQ127) per reel

#### Applications:

- As a transformer: SEPIC, flyback
- As an inductor: buck, boost, coupled inductor
- DC-DC converters
- VRM inductor for CPU and DDR power supplies
- Input and output filter chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number    | Rated Inductance (uH) | Parallel ratings      |                           |                           |              |             | Series ratings        |                           |                           |              |             |
|----------------|-----------------------|-----------------------|---------------------------|---------------------------|--------------|-------------|-----------------------|---------------------------|---------------------------|--------------|-------------|
|                |                       | DCL ①<br>±20%<br>(uH) | I <sub>rms</sub> ②<br>(A) | I <sub>sat</sub> ③<br>(A) | DCR ④<br>(Ω) | Volt-μsec ⑤ | DCL ①<br>±20%<br>(uH) | I <sub>rms</sub> ②<br>(A) | I <sub>sat</sub> ③<br>(A) | DCR ④<br>(Ω) | Volt-μsec ⑤ |
| SDRH0704D-R33M | 0.33                  | 0.294                 | 6.20                      | 18.4                      | 0.0074       | 1.71        | 1.178                 | 3.10                      | 9.18                      | 0.0205       | 3.42        |
| SDRH0704D-1R0M | 1.0                   | 0.952                 | 5.33                      | 10.2                      | 0.0100       | 2.08        | 3.806                 | 2.68                      | 5.10                      | 0.0400       | 8.16        |
| SDRH0704D-1R5M | 1.5                   | 1.422                 | 4.06                      | 8.35                      | 0.0115       | 3.76        | 5.688                 | 2.48                      | 4.17                      | 0.0461       | 7.52        |
| SDRH0704D-2R2M | 2.2                   | 1.949                 | 4.65                      | 7.08                      | 0.0130       | 4.45        | 7.644                 | 2.33                      | 3.53                      | 0.0521       | 8.6         |
| SDRH0704D-3R3M | 3.3                   | 3.398                 | 3.94                      | 5.40                      | 0.0183       | 5.81        | 13.58                 | 1.97                      | 2.70                      | 0.0732       | 11.6        |
| SDRH0704D-4R7M | 4.7                   | 5.182                 | 3.34                      | 4.57                      | 0.0254       | 7.18        | 20.73                 | 1.87                      | 2.18                      | 0.102        | 14.4        |
| SDRH0704D-6R8M | 6.8                   | 7.344                 | 2.80                      | 3.87                      | 0.0418       | 9.56        | 29.38                 | 1.50                      | 1.84                      | 0.167        | 17.1        |
| SDRH0704D-8R2M | 8.2                   | 8.588                 | 2.59                      | 3.40                      | 0.0441       | 9.23        | 34.28                 | 1.27                      | 1.70                      | 0.177        | 18.5        |
| SDRH0704D-100M | 10                    | 9.882                 | 2.41                      | 3.17                      | 0.0488       | 9.92        | 39.63                 | 1.20                      | 1.58                      | 0.198        | 19.8        |
| SDRH0704D-150M | 15                    | 18.09                 | 2.11                      | 2.48                      | 0.0697       | 12.7        | 64.38                 | 1.05                      | 1.24                      | 0.258        | 25.4        |
| SDRH0704D-220M | 22                    | 21.73                 | 1.75                      | 2.13                      | 0.0925       | 14.7        | 86.02                 | 0.874                     | 1.07                      | 0.371        | 29.4        |
| SDRH0704D-330M | 33                    | 33.01                 | 1.41                      | 1.73                      | 0.143        | 18.1        | 133.0                 | 0.709                     | 0.87                      | 0.574        | 38.2        |
| SDRH0704D-470M | 47                    | 48.64                 | 1.15                      | 1.41                      | 0.218        | 22.2        | 198.8                 | 0.573                     | 0.71                      | 0.865        | 44.4        |
| SDRH0704D-680M | 68                    | 68.87                 | 1.09                      | 1.18                      | 0.285        | 26.3        | 278.7                 | 0.417                     | 0.60                      | 1.08         | 52.8        |
| SDRH0704D-820M | 82                    | 80.95                 | 0.91                      | 1.11                      | 0.345        | 28.4        | 323.8                 | 0.453                     | 0.55                      | 1.38         | 56.8        |
| SDRH0704D-101M | 100                   | 101.9                 | 0.88                      | 0.89                      | 0.383        | 31.8        | 408.4                 | 0.490                     | 0.48                      | 1.53         | 63.8        |
| SDRH0704D-151M | 150                   | 150.0                 | 0.69                      | 0.81                      | 0.591        | 38.8        | 600.0                 | 0.346                     | 0.41                      | 2.37         | 77.2        |
| SDRH0704D-221M | 220                   | 227.0                 | 0.58                      | 0.88                      | 0.807        | 47.5        | 908.0                 | 0.279                     | 0.33                      | 3.83         | 95          |
| SDRH0704D-331M | 330                   | 336.6                 | 0.45                      | 0.64                      | 1.41         | 57.8        | 1342                  | 0.224                     | 0.27                      | 5.66         | 118         |
| SDRH0704D-471M | 470                   | 485.3                 | 0.40                      | 0.88                      | 1.74         | 68.1        | 1981                  | 0.202                     | 0.23                      | 8.97         | 136         |
| SDRH0704D-681M | 680                   | 671.2                 | 0.33                      | 0.38                      | 2.68         | 81.7        | 2685                  | 0.166                     | 0.19                      | 10.3         | 163         |
| SDRH0704D-821M | 820                   | 812.7                 | 0.31                      | 0.35                      | 2.83         | 88.8        | 3281                  | 0.158                     | 0.17                      | 11.7         | 180         |
| SDRH0704D-102M | 1000                  | 1008                  | 0.27                      | 0.31                      | 3.89         | 100         | 4036                  | 0.135                     | 0.16                      | 15.6         | 200         |

1) Open Circuit Inductance Test Parameters: 100kHz, 0.25 Vrms, 0.0 Adc Parallel: (1,2 ~4,3) Series: (1~4) tie (2~3)

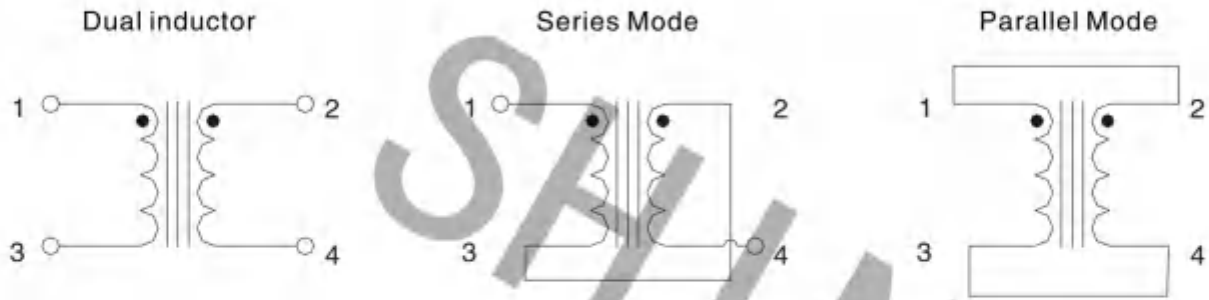
2) RMS current for an approximate DT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

3) Peak current for approximately 30% roll-off at 20°C

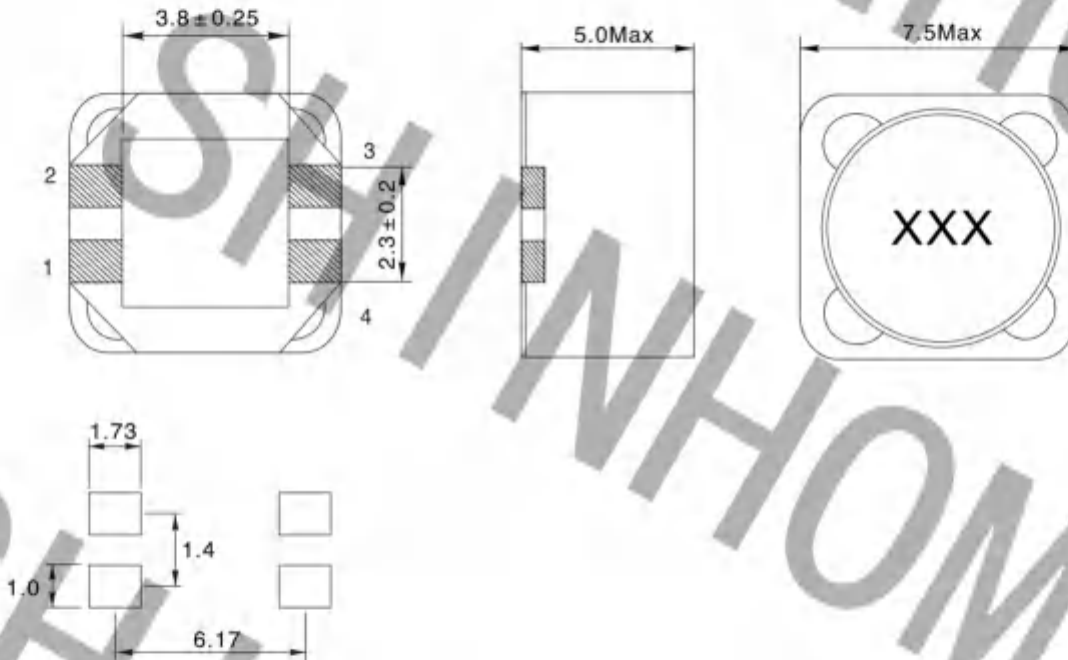
4) DCR limits @ 20°C

5) Applied Volt-Tima product (V-μs) across the inductor. This value represents the applied V-μs at 100kHz necessary to generate a core loss equal to 10% of the total losses for a 40°C temperature rise.

## SCHEMATIC



## PHYSICAL CHARACTERISTICS(Dimensions:mm)



Recommended Land Pattern

### Notes:

1. 200Vac Isolation between windings
2. Storage temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
3. Operating temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (range is application specific).
4. Solder reflow temperature:  $260^{\circ}\text{C}$  max. for 10 seconds max.
5. Turns Ratio (1:3):(2-4)=1:1
6. All specifications subject to change without notice.



## COUPLED INDUCTORS, COMMON MODE CHOKES SDRH1048D SERIES

### FEATURES:

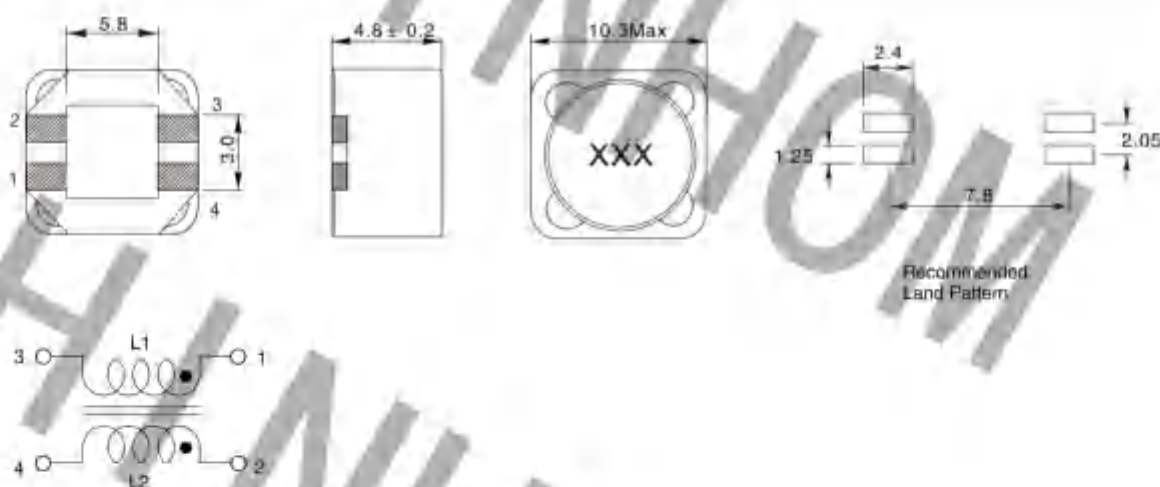
- Only 4.8 mm high and 10.3 mm square
- AEC-Q200 Grade 1 (-40°C to +125°C)
- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Up to 200 MHz differential mode cutoff frequency
- Can be used as coupled inductors for SEPIC applications
- RoHS compliant



### ELECTRICAL CHARACTERISTICS:

| Partnumber     | Common mode impedance<br>Max (KΩ) | Cutoff frequency<br>(MHz) | Inductance<br>(μH) |      | DCR max<br>(Ω) | Isolation<br>(Vrms) | Irms<br>(A) |
|----------------|-----------------------------------|---------------------------|--------------------|------|----------------|---------------------|-------------|
|                |                                   |                           | Min                | Norm |                |                     |             |
| SDRH1048D-2R2N | 3.49 @ 71 MHz                     | 200                       | 1.54               | 2.2  | 0.019          | 200                 | 2.4         |
| SDRH1048D-100M | 10.1 @ 27 MHz                     | 97                        | 8.00               | 10   | 0.053          | 200                 | 1.5         |
| SDRH1048D-220M | 17.0 @ 17 MHz                     | 44                        | 17.6               | 22   | 0.098          | 200                 | 1.3         |
| SDRH1048D-470M | 32.4 @ 12 MHz                     | 29                        | 37.6               | 47   | 0.205          | 200                 | 1.1         |
| SDRH1048D-680M | 52.2 @ 9.3 MHz                    | 38                        | 54.4               | 68   | 0.297          | 200                 | 1.0         |
| SDRH1048D-101M | 58.3 @ 7.4 MHz                    | 19                        | 80.0               | 100  | 0.387          | 200                 | 0.85        |
| SDRH1048D-221K | 87.9 @ 5.0 MHz                    | 16                        | 198                | 220  | 0.840          | 200                 | 0.62        |

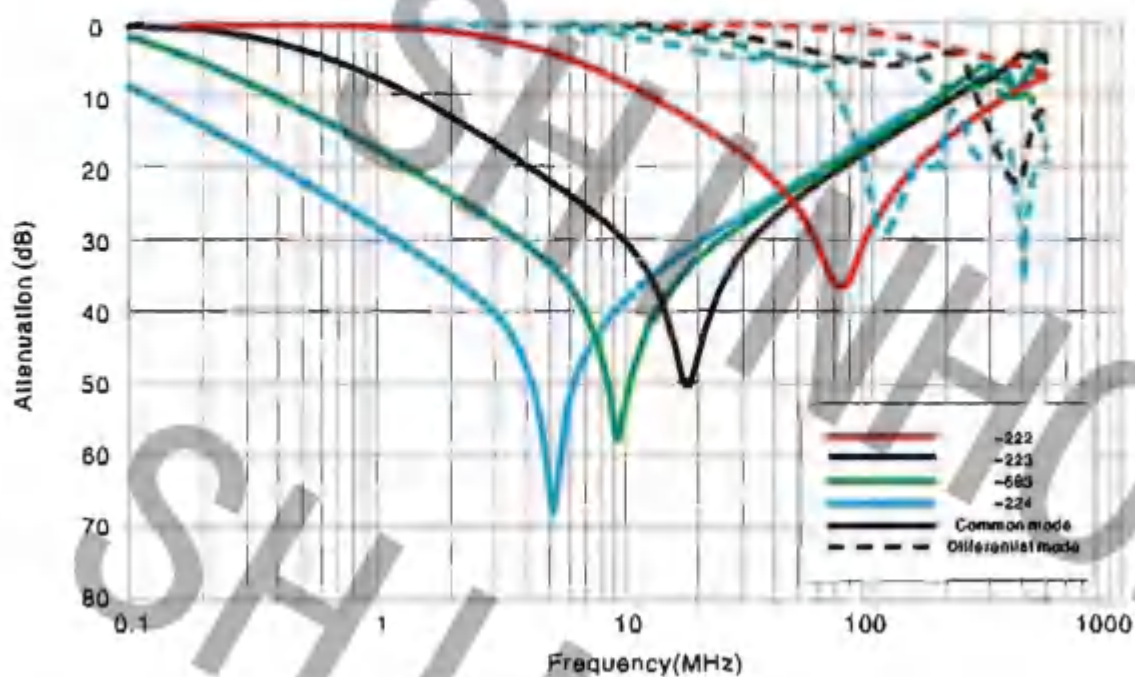
### PHYSICAL CHARACTERISTICS & WINDING:



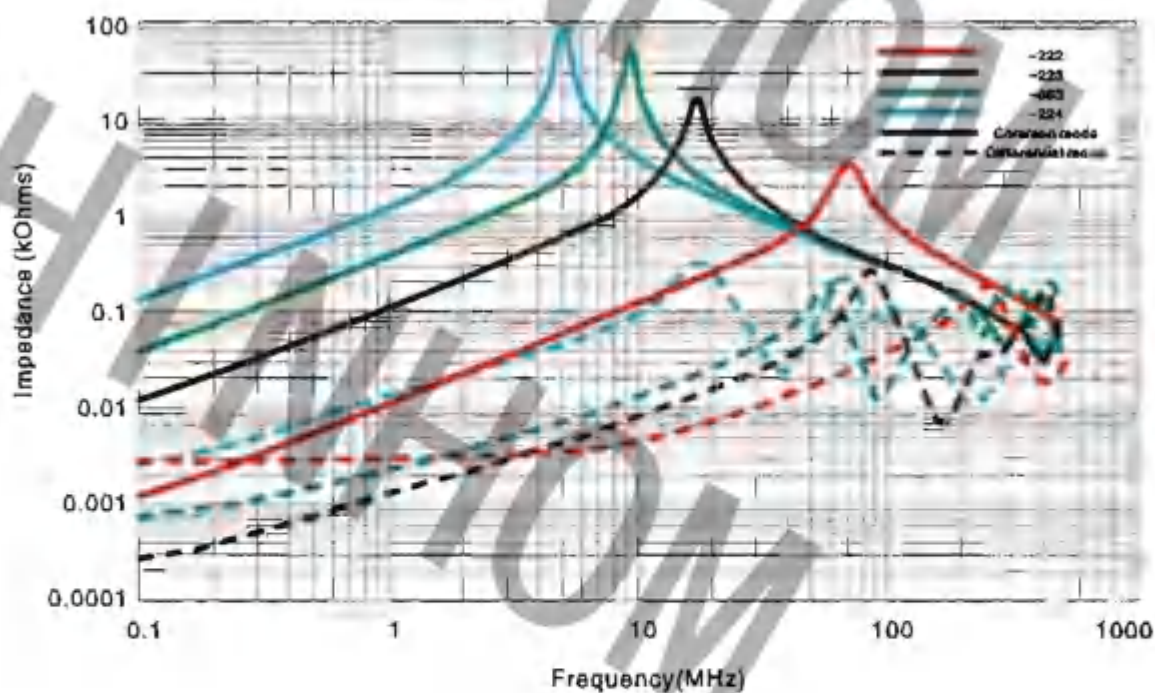
1. Frequency at which the differential mode attenuation equals -3dB
2. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A on an Agilent/HP 4284A LCR meter or equivalent
3. DCR is for each winding.
4. Winding-to-winding isolation 500 Vrms, one minute
5. Current that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
6. Electrical specifications at 25 °C
7. Ambient temperature -40 °C to +85 °C with I rms current. Maximum part temperature +125 °C (ambient + temp rise).
8. Storage temperature Component: -40 °C to +125 °C .
9. Tape and reel packaging: -40 °C to +80 °C

## PERFORMANCE CURVE:

TYPICAL ATTENUATION (REF: 50 OHMS)



TYPICAL IMPEDANCE VS FREQUENCY





## DUAL WINDING, SHIELDING INDUCTORS

### SDRH1205D SERIES

#### Description:

- Four sizes of shielded drum core inductors
- Windings can be connected in series or parallel offering a broad range of inductance and current ratings
- Surface Mount

#### Packaging:

- Supplied in tape and reel packaging 1350 (DRQ73), 1100 (DRQ74), 800 (DRQ125), and 350 (DRQ127) per reel

#### Applications:

- As a transformer: SEPIC, flyback
- As an inductor: buck, boost, coupled inductor
- DC-DC converters
- VRM inductor for CPU and DDR power supplies
- Input and output filter chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number    | Rated Inductance (uH) | Parallel ratings                 |                                      |                                       |                         |                        | Series ratings                   |                                      |                                       |                         |                        |
|----------------|-----------------------|----------------------------------|--------------------------------------|---------------------------------------|-------------------------|------------------------|----------------------------------|--------------------------------------|---------------------------------------|-------------------------|------------------------|
|                |                       | OCL <sup>①</sup><br>±20%<br>(uH) | I <sub>rms</sub> <sup>②</sup><br>(A) | I <sub>peak</sub> <sup>③</sup><br>(A) | DCR <sup>④</sup><br>(Ω) | Volt-μsec <sup>⑤</sup> | OCL <sup>①</sup><br>±20%<br>(uH) | I <sub>rms</sub> <sup>②</sup><br>(A) | I <sub>peak</sub> <sup>③</sup><br>(A) | DCR <sup>④</sup><br>(Ω) | Volt-μsec <sup>⑤</sup> |
| SDRH1205D-R47M | 0.47                  | 0.456                            | 17.5                                 | 33.0                                  | 0.0018                  | 3.17                   | 1.624                            | 8.60                                 | 16.5                                  | 0.0078                  | 6.34                   |
| SDRH1205D-1R0M | 1.0                   | 0.894                            | 15.0                                 | 28.6                                  | 0.0024                  | 4.43                   | 3.576                            | 7.51                                 | 11.8                                  | 0.0098                  | 8.88                   |
| SDRH1205D-1R5M | 1.5                   | 1.478                            | 13.8                                 | 18.3                                  | 0.0029                  | 5.70                   | 5.912                            | 8.89                                 | 8.15                                  | 0.0114                  | 11.40                  |
| SDRH1205D-2R2M | 2.2                   | 2.206                            | 10.9                                 | 15.0                                  | 0.0045                  | 8.97                   | 8.832                            | 5.46                                 | 7.50                                  | 0.0162                  | 16.6                   |
| SDRH1205D-3R3M | 3.3                   | 3.084                            | 9.28                                 | 12.7                                  | 0.0083                  | 8.23                   | 12.34                            | 4.83                                 | 6.36                                  | 0.0253                  | 16.5                   |
| SDRH1205D-4R7M | 4.7                   | 5.274                            | 7.16                                 | 9.71                                  | 0.0105                  | 10.8                   | 21.10                            | 3.59                                 | 4.98                                  | 0.0420                  | 21.8                   |
| SDRH1205D-6R8M | 6.8                   | 8.568                            | 6.64                                 | 6.88                                  | 0.0123                  | 12.0                   | 28.36                            | 3.32                                 | 4.34                                  | 0.0482                  | 24.0                   |
| SDRH1205D-8R2M | 8.2                   | 8.046                            | 5.64                                 | 7.66                                  | 0.0176                  | 13.3                   | 32.19                            | 2.77                                 | 3.83                                  | 0.0705                  | 26.6                   |
| SDRH1205D-100M | 10                    | 9.654                            | 6.35                                 | 7.17                                  | 0.0188                  | 14.8                   | 36.62                            | 2.67                                 | 3.58                                  | 0.0757                  | 26.2                   |
| SDRH1205D-150M | 15                    | 15.35                            | 4.27                                 | 5.69                                  | 0.0296                  | 18.4                   | 61.40                            | 2.13                                 | 2.85                                  | 0.0120                  | 36.8                   |
| SDRH1205D-220M | 22                    | 22.38                            | 3.70                                 | 4.71                                  | 0.0396                  | 22.2                   | 89.44                            | 1.84                                 | 2.38                                  | 0.158                   | 44.4                   |
| SDRH1205D-330M | 33                    | 33.74                            | 3.28                                 | 3.84                                  | 0.0505                  | 27.2                   | 126.0                            | 1.64                                 | 1.92                                  | 0.203                   | 54.4                   |
| SDRH1205D-470M | 47                    | 47.47                            | 2.71                                 | 3.24                                  | 0.0740                  | 32.3                   | 189.9                            | 1.35                                 | 1.62                                  | 0.297                   | 64.6                   |
| SDRH1205D-680M | 68                    | 67.91                            | 2.22                                 | 2.70                                  | 0.101                   | 38.6                   | 271.6                            | 1.11                                 | 1.36                                  | 0.440                   | 77.2                   |
| SDRH1205D-820M | 82                    | 86.68                            | 2.05                                 | 2.38                                  | 0.128                   | 43.7                   | 347.6                            | 1.03                                 | 1.20                                  | 0.516                   | 87.4                   |
| SDRH1205D-101M | 100                   | 102.7                            | 1.78                                 | 2.20                                  | 0.170                   | 47.5                   | 410.8                            | 0.882                                | 1.10                                  | 0.682                   | 96.0                   |
| SDRH1205D-151M | 150                   | 151.1                            | 1.48                                 | 1.81                                  | 0.246                   | 67.8                   | 604.4                            | 0.736                                | 0.806                                 | 0.881                   | 115.2                  |
| SDRH1205D-221M | 220                   | 216.8                            | 1.19                                 | 1.51                                  | 0.384                   | 99.0                   | 847.2                            | 0.594                                | 0.755                                 | 1.34                    | 196                    |
| SDRH1205D-331M | 330                   | 332.8                            | 1.06                                 | 1.22                                  | 0.482                   | 85.5                   | 1330                             | 0.530                                | 0.610                                 | 1.83                    | 171                    |
| SDRH1205D-471M | 470                   | 478.1                            | 0.87                                 | 1.02                                  | 0.718                   | 102                    | 1892                             | 0.454                                | 0.510                                 | 2.87                    | 204                    |
| SDRH1205D-681M | 680                   | 676.8                            | 0.70                                 | 0.85                                  | 1.10                    | 122                    | 2718                             | 0.350                                | 0.425                                 | 4.42                    | 244                    |
| SDRH1205D-821M | 820                   | 826.0                            | 0.60                                 | 0.77                                  | 1.49                    | 136                    | 3512                             | 0.301                                | 0.365                                 | 5.98                    | 270                    |
| SDRH1205D-102M | 1000                  | 1006                             | 0.57                                 | 0.70                                  | 1.88                    | 146                    | 4032                             | 0.283                                | 0.350                                 | 8.76                    | 296                    |

1) Open Circuit Inductance Test Parameters: 100kHz, 0.25 Vrms, 0.0 A dc Parallel: (1, 2 - 4.3) Series: (1-4) (16 (2-3))

2) RMS current for an approximate ΔT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

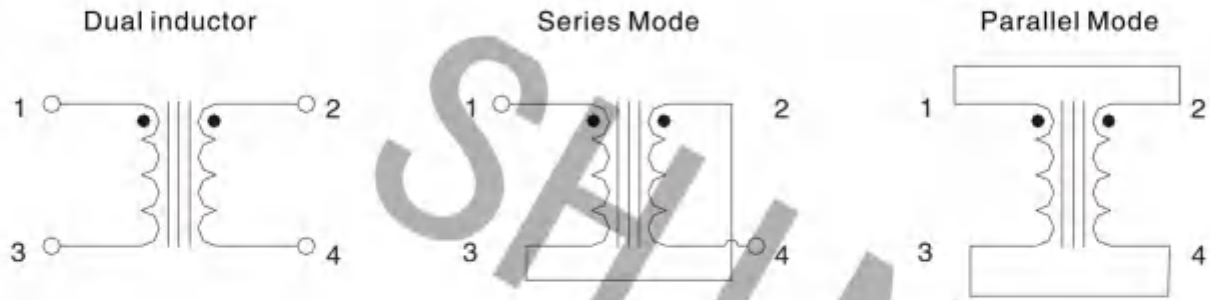
3) Peak current for approximately 30% roll-off at 20°C

4) DCR limits @ 20°C

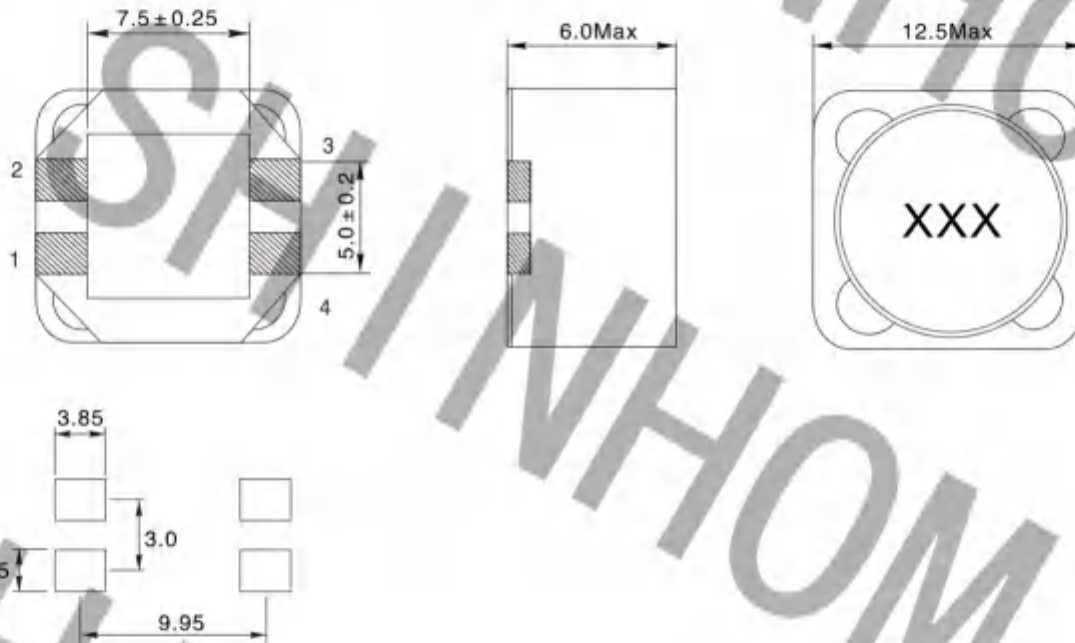
5) Applied Volt-Time product (V-μs) across the inductor. This value represents the applied V-μs at 100kHz necessary to generate a core loss equal to 10% of the total losses for a 40° temperature rise.



## SCHEMATIC



## PHYSICAL CHARACTERISTICS(Dimensions:mm)



Recommended Land Pattern

### Notes:

1. 200Vac Isolation between windings
2. Storage temperature: -40°C to +125°C
3. Operating temperature: -40°C to +125°C (range is application specific).
4. Solder reflow temperature: 260°C max. for 10 seconds max.
5. Turns Ratio (1:3):(2-4)=1:1
6. All specifications subject to change without notice.





## DUAL WINDING, SHIELDING INDUCTORS

### SDRH1207D SERIES

#### Description:

- Four sizes of shielded drum core inductors
- Windings can be connected in series or parallel offering a broad range of inductance and current ratings
- Surface Mount

#### Packaging:

- Supplied in tape and reel packaging
- 1350 (DRQ73), 1100 (DRQ74)
- 600 (DRQ125), and 350 (DRQ127) per reel

#### Applications:

- As a transformer: SEPIC, flyback
- As an inductor: buck, boost, coupled inductor
- DC-DC converters
- VRM inductor for CPU and DDR power supplies
- Input and output filter chokes

#### ELECTRICAL CHARACTERISTICS:

| Part Number    | Rated Inductance (μH) | Parallel ratings      |                           |                            |              |             | Series ratings        |                           |                            |              |             |
|----------------|-----------------------|-----------------------|---------------------------|----------------------------|--------------|-------------|-----------------------|---------------------------|----------------------------|--------------|-------------|
|                |                       | DCL ①<br>±20%<br>(μH) | I <sub>rms</sub> ②<br>(A) | I <sub>peak</sub> ③<br>(A) | DCR ④<br>(Ω) | Volt-μsec ⑤ | DCL ①<br>±20%<br>(μH) | I <sub>rms</sub> ②<br>(A) | I <sub>peak</sub> ③<br>(A) | DCR ④<br>(Ω) | Volt-μsec ⑤ |
| SDRH1207D-R47M | 0.47                  | 0.419                 | 17.9                      | 56.0                       | 0.00185      | 3.50        | 1.678                 | 6.94                      | 26                         | 0.0078       | 7.00        |
| SDRH1207D-1R0M | 1.0                   | 0.821                 | 15.5                      | 40.0                       | 0.00281      | 4.90        | 3.284                 | 7.74                      | 20                         | 0.0104       | 9.80        |
| SDRH1207D-1R5M | 1.5                   | 1.357                 | 13.5                      | 31.1                       | 0.00341      | 6.30        | 5.426                 | 6.77                      | 15.8                       | 0.0137       | 12.60       |
| SDRH1207D-2R2M | 2.2                   | 2.027                 | 12.5                      | 25.5                       | 0.00373      | 7.70        | 8.108                 | 6.23                      | 12.7                       | 0.0161       | 15.4        |
| SDRH1207D-3R3M | 3.3                   | 2.831                 | 10.4                      | 21.5                       | 0.00567      | 9.10        | 11.32                 | 5.23                      | 10.8                       | 0.0229       | 16.2        |
| SDRH1207D-4R7M | 4.7                   | 4.641                 | 8.25                      | 16.5                       | 0.00917      | 11.9        | 19.36                 | 4.13                      | 8.24                       | 0.0367       | 23.8        |
| SDRH1207D-6R8M | 6.8                   | 7.367                 | 7.34                      | 13.3                       | 0.0116       | 14.7        | 29.55                 | 3.87                      | 6.67                       | 0.0455       | 29.4        |
| SDRH1207D-8R2M | 8.2                   | 8.861                 | 6.32                      | 12.2                       | 0.0157       | 16.1        | 35.44                 | 3.16                      | 6.03                       | 0.0627       | 32.2        |
| SDRH1207D-100M | 10                    | 10.47                 | 6.04                      | 11.2                       | 0.0173       | 17.5        | 41.88                 | 3.02                      | 5.80                       | 0.0686       | 35.0        |
| SDRH1207D-150M | 15                    | 14.09                 | 5.03                      | 9.68                       | 0.0247       | 20.3        | 56.36                 | 2.51                      | 4.83                       | 0.0990       | 40.8        |
| SDRH1207D-220M | 22                    | 22.93                 | 4.00                      | 7.57                       | 0.0391       | 25.9        | 91.72                 | 2.00                      | 3.78                       | 0.157        | 51.8        |
| SDRH1207D-330M | 33                    | 33.62                 | 3.23                      | 6.23                       | 0.0600       | 31.5        | 135.7                 | 1.81                      | 3.11                       | 0.241        | 63.0        |
| SDRH1207D-470M | 47                    | 47.06                 | 2.95                      | 5.28                       | 0.0719       | 37.1        | 189.2                 | 1.47                      | 2.64                       | 0.288        | 74.2        |
| SDRH1207D-680M | 68                    | 68.49                 | 2.44                      | 4.44                       | 0.106        | 44.1        | 265.9                 | 1.23                      | 2.22                       | 0.421        | 88.2        |
| SDRH1207D-820M | 82                    | 79.75                 | 2.09                      | 4.06                       | 0.143        | 48.3        | 318.0                 | 1.04                      | 2.03                       | 0.573        | 96.6        |
| SDRH1207D-101M | 100                   | 88.31                 | 1.98                      | 3.84                       | 0.163        | 53.9        | 397.3                 | 0.980                     | 1.82                       | 0.653        | 107.8       |
| SDRH1207D-151M | 150                   | 144.9                 | 1.59                      | 3.01                       | 0.247        | 65.1        | 579.6                 | 0.798                     | 1.51                       | 0.989        | 130.2       |
| SDRH1207D-221M | 220                   | 221.5                 | 1.29                      | 2.43                       | 0.378        | 80.3        | 898.0                 | 0.645                     | 1.22                       | 1.50         | 161         |
| SDRH1207D-331M | 330                   | 328.8                 | 1.04                      | 2.01                       | 0.574        | 97.3        | 1294                  | 0.522                     | 1.01                       | 2.30         | 195         |
| SDRH1207D-471M | 470                   | 467.1                 | 0.85                      | 1.66                       | 0.861        | 117         | 1888                  | 0.427                     | 0.898                      | 3.44         | 234         |
| SDRH1207D-681M | 680                   | 676.7                 | 0.78                      | 1.39                       | 1.08         | 141         | 2707                  | 0.380                     | 0.897                      | 4.32         | 262         |
| SDRH1207D-821M | 820                   | 818.1                 | 0.65                      | 1.27                       | 1.47         | 163         | 3272                  | 0.326                     | 0.833                      | 5.88         | 310         |
| SDRH1207D-102M | 1000                  | 1006                  | 0.61                      | 1.14                       | 1.68         | 172         | 4020                  | 0.307                     | 0.571                      | 6.64         | 344         |

1) Open Circuit Inductance Test Parameters: 100kHz, 0.25 Vrms, 0.0 Adc Parallel: (1,2 -4,3) Series: (1-4) file (2-3)

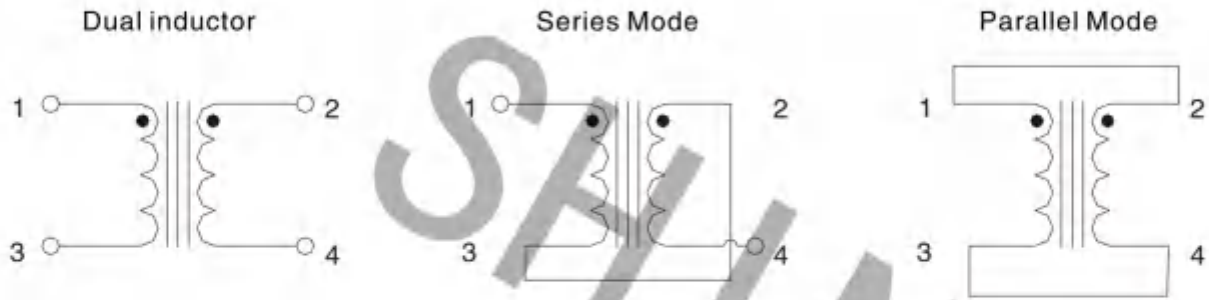
2) RMS current for an approximate DT of 40°C without core loss. It is recommended that the temperature of the part not exceed 125°C.

3) Peak current for approximately 30% roll-off at 20°C

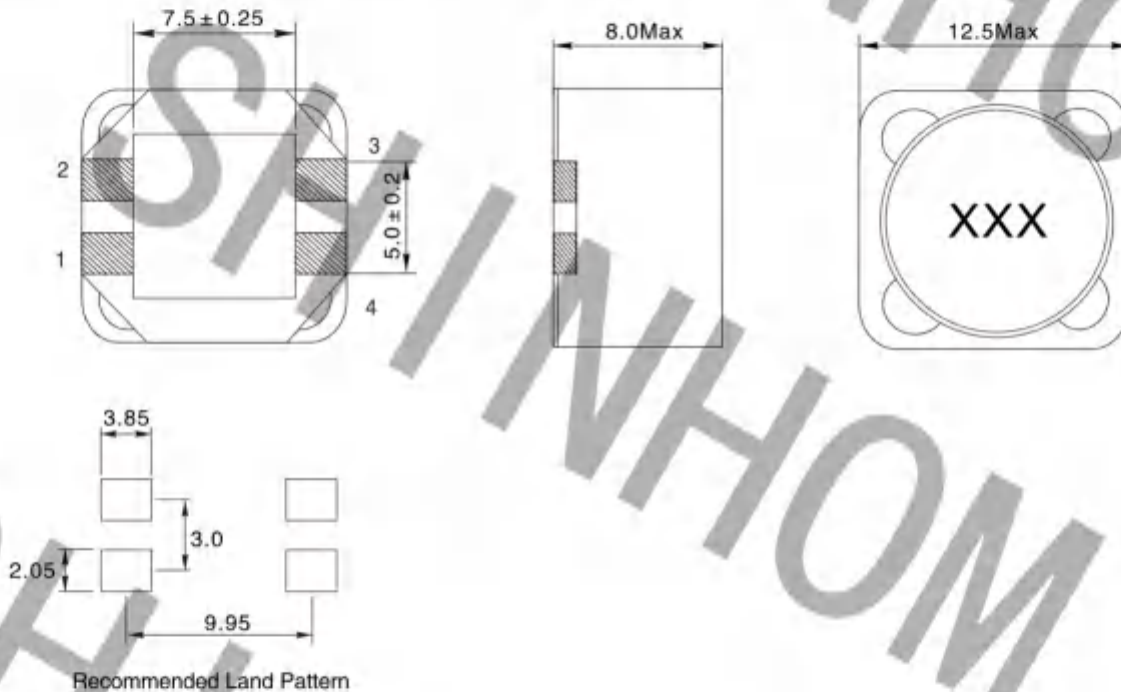
4) DCR limits @ 20°C

5) Applied Volt-Time product (V-μs) across the inductor. This value represents the applied V-μs at 100KHz necessary to generate a core loss equal to 10% of the total losses for a 40° temperature rise.

## SCHEMATIC



## PHYSICAL CHARACTERISTICS(Dimensions:mm)



### Notes:

1. 200Vac Isolation between windings
2. Storage temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$
3. Operating temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (range is application specific).
4. Solder reflow temperature:  $260^{\circ}\text{C}$  max. for 10 seconds max.
5. Turns Ratio (1:3):(2-4)=1:1
6. All specifications subject to change without notice.

# COUPLED INDUCTORS, COMMON MODE CHOKES

## SDRH1260D SERIES



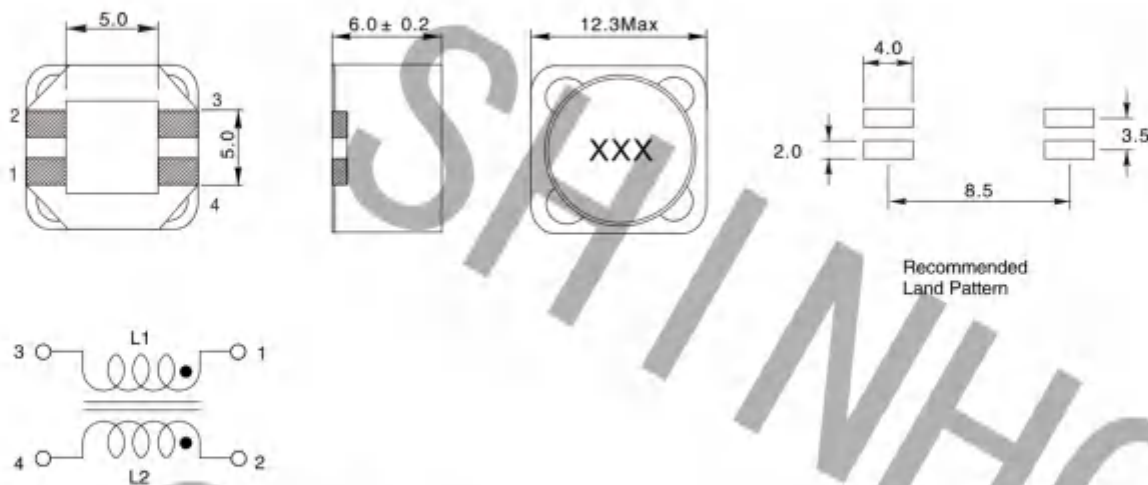
### FEATURES:

- Only 6.0 mm high and 12.3 mm square
- AEC-Q200 Grade 1 (-40°C to +125°C)
- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Up to 180 MHz differential mode cutoff frequency
- Can be used as coupled inductors for SEPIC applications
- RoHS compliant

### ELECTRICAL CHARACTERISTICS:

| Partnumber     | Common mode impedance<br>Max (KΩ) | Cutoff frequency<br>(MHz) | Inductance<br>(μH) |      | DCR max<br>(Ω) | Isolation<br>(Vrms) | Irms<br>(A) |
|----------------|-----------------------------------|---------------------------|--------------------|------|----------------|---------------------|-------------|
|                |                                   |                           | Min                | Nom  |                |                     |             |
| SDRH1260D-3R3Y | 5.29 @ 53 MHz                     | 170                       | 2.64               | 3.3  | 0.020          | 500                 | 3.60        |
| SDRH1260D-4R7Y | 6.27 @ 43 MHz                     | 140                       | 3.76               | 4.7  | 0.033          | 500                 | 3.10        |
| SDRH1260D-5R8Y | 8.38 @ 36 MHz                     | 91                        | 4.48               | 5.8  | 0.040          | 500                 | 3.00        |
| SDRH1260D-6R8Y | 9.78 @ 33 MHz                     | 120                       | 5.44               | 6.8  | 0.048          | 500                 | 2.75        |
| SDRH1260D-8R2  | 9.72 @ 30 MHz                     | 110                       | 6.56               | 8.2  | 0.052          | 500                 | 2.83        |
| SDRH1260D-100Y | 12.31 @ 26 MHz                    | 110                       | 8.00               | 10   | 0.060          | 500                 | 2.45        |
| SDRH1260D-120Y | 14.57 @ 23 MHz                    | 81                        | 9.60               | 12   | 0.074          | 500                 | 2.21        |
| SDRH1260D-150Y | 15.17 @ 21 MHz                    | 77                        | 12.0               | 15   | 0.085          | 500                 | 2.06        |
| SDRH1260D-180Y | 16.95 @ 18 MHz                    | 84                        | 14.4               | 18   | 0.097          | 500                 | 1.93        |
| SDRH1260D-220Y | 20.73 @ 17 MHz                    | 79                        | 17.6               | 22   | 0.116          | 500                 | 1.76        |
| SDRH1260D-270Y | 26.07 @ 15 MHz                    | 68                        | 21.6               | 27   | 0.124          | 500                 | 1.70        |
| SDRH1260D-330  | 26.15 @ 12 MHz                    | 58                        | 28.4               | 33   | 0.134          | 500                 | 1.64        |
| SDRH1260D-390Y | 30.30 @ 12 MHz                    | 38                        | 31.2               | 39   | 0.142          | 500                 | 1.59        |
| SDRH1260D-470Y | 29.81 @ 11 MHz                    | 53                        | 37.6               | 47   | 0.174          | 500                 | 1.44        |
| SDRH1260D-560Y | 51.88 @ 9.8 MHz                   | 33                        | 44.8               | 56   | 0.198          | 500                 | 1.35        |
| SDRH1260D-680Y | 55.74 @ 8.8 MHz                   | 25                        | 54.4               | 68   | 0.216          | 500                 | 1.29        |
| SDRH1260D-820Y | 70.75 @ 8.2 MHz                   | 26                        | 65.6               | 82   | 0.274          | 500                 | 1.15        |
| SDRH1260D-101Y | 86.40 @ 7.3 MHz                   | 17                        | 80.0               | 100  | 0.322          | 500                 | 1.06        |
| SDRH1260D-121Y | 87.96 @ 6.2 MHz                   | 27                        | 106                | 120  | 0.418          | 500                 | 0.93        |
| SDRH1260D-151Y | 97.64 @ 5.4 MHz                   | 45                        | 135                | 150  | 0.476          | 500                 | 0.87        |
| SDRH1260D-181Y | 124.3 @ 5.2 MHz                   | 23                        | 162                | 180  | 0.535          | 500                 | 0.82        |
| SDRH1260D-221Y | 143.4 @ 4.3 MHz                   | 25                        | 186                | 220  | 0.691          | 500                 | 0.72        |
| SDRH1260D-271Y | 134.8 @ 4.3 MHz                   | 11                        | 243                | 270  | 0.808          | 500                 | 0.67        |
| SDRH1260D-331Y | 132.1 @ 3.6 MHz                   | 35                        | 287                | 330  | 1.09           | 500                 | 0.57        |
| SDRH1260D-391Y | 131.0 @ 3.4 MHz                   | 14                        | 351                | 390  | 1.20           | 500                 | 0.55        |
| SDRH1260D-471Y | 163.5 @ 3.3 MHz                   | 21                        | 423                | 470  | 1.59           | 500                 | 0.48        |
| SDRH1260D-561Y | 175.2 @ 2.7 MHz                   | 15                        | 504                | 560  | 1.61           | 500                 | 0.45        |
| SDRH1260D-681Y | 158.8 @ 2.7 MHz                   | 11                        | 613                | 680  | 2.06           | 500                 | 0.42        |
| SDRH1260D-821Y | 225.9 @ 2.2 MHz                   | 9.2                       | 738                | 820  | 2.65           | 500                 | 0.37        |
| SDRH1260D-102Y | 197.0 @ 2.3 MHz                   | 15                        | 900                | 1000 | 3.06           | 500                 | 0.34        |

## PHYSICAL CHARACTERISTICS & WINDING:

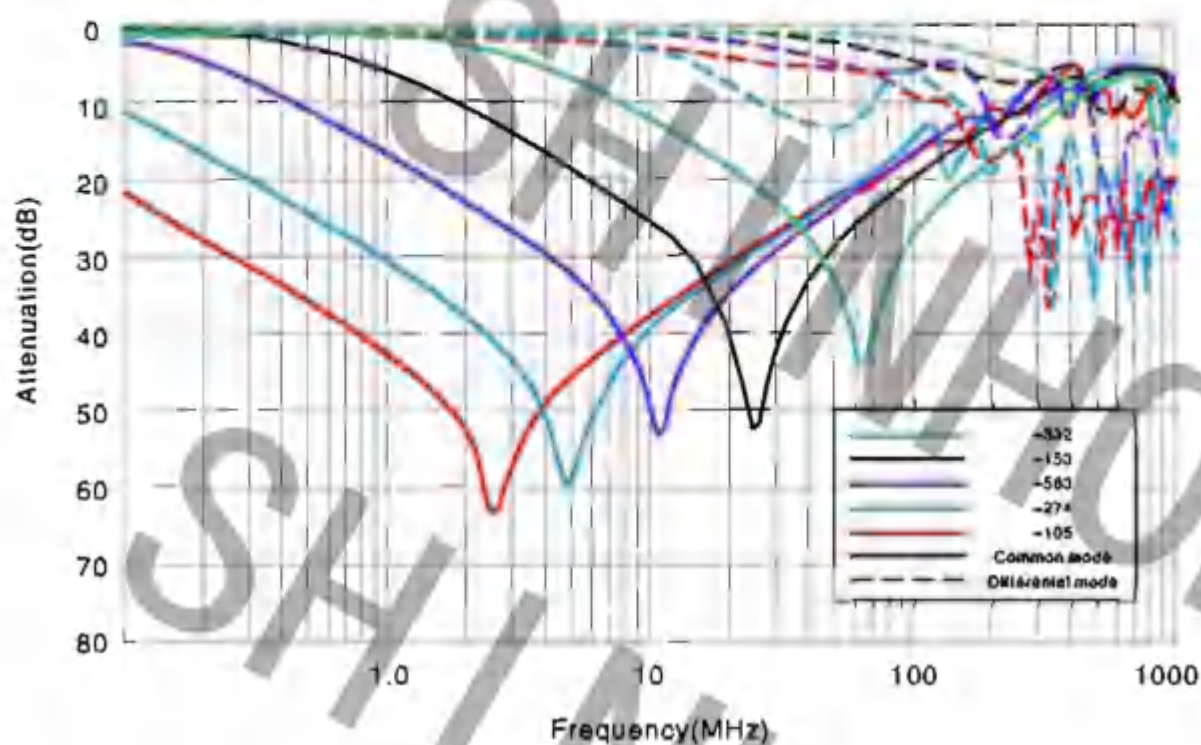


1. Frequency at which the differential mode attenuation equals -3dB
2. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent
3. DCR is for each winding.
4. Winding-to-winding isolation 500 Vrms, one minute
5. Current that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
6. Electrical specifications at 25 °C
7. Ambient temperature -40 °C to +125 °C with Irms current. Maximum part temperature +165 °C (ambient + temp rise).
8. Storage temperature Component: -40 °C to +165 °C .
9. Tape and reel packaging: -40 °C to +80 °C

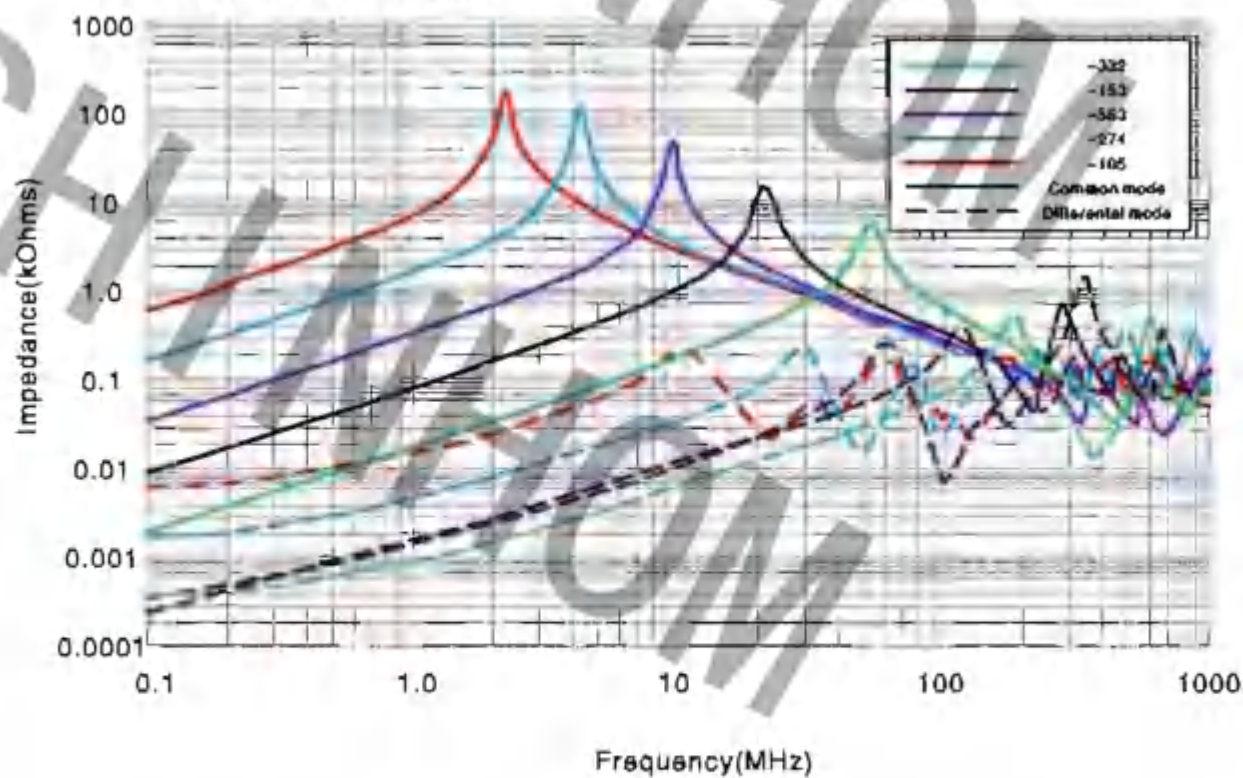


## PERFORMANCE CURVE:

Typical Attenuation(Ref: 50 Ohms)



Typical Impedance vs Frequency



# COUPLED INDUCTORS, COMMON MODE CHOKES

## SDRH1278D SERIES

### FEATURES:

- Only 7.8 mm high and 12.3 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke
- UL Certified per File E219588



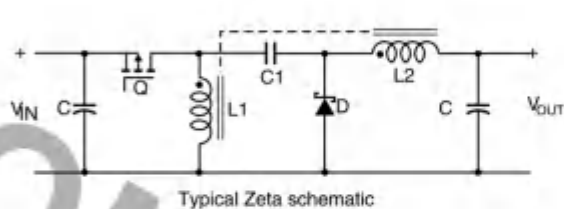
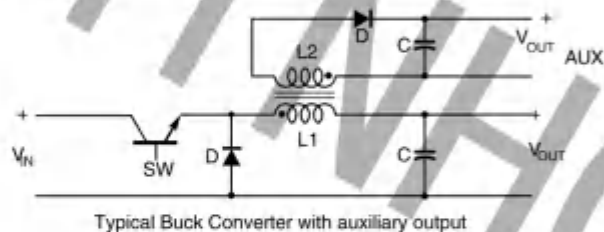
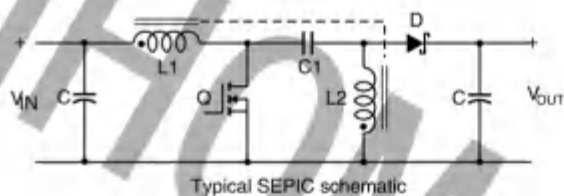
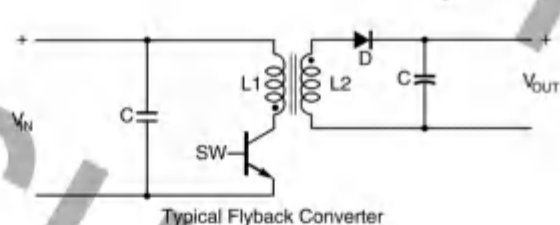
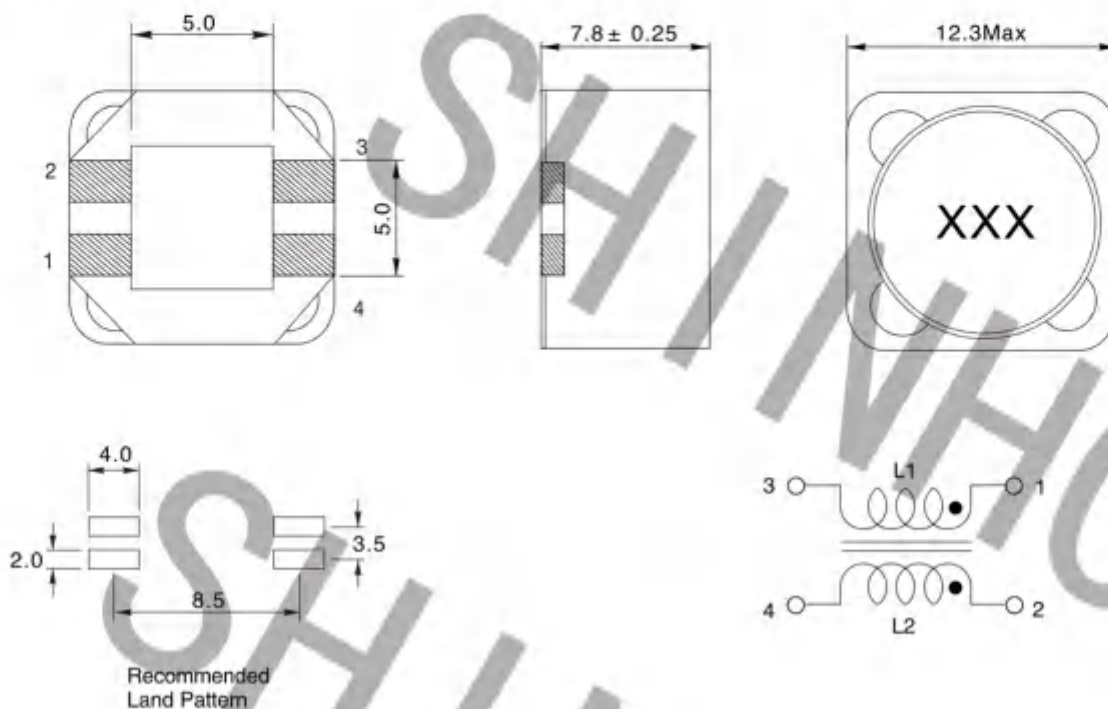
### ELECTRICAL CHARACTERISTICS:

| Part number<br>SDRH1278D- | Inductance<br>( $\mu$ H) | DCR max<br>(Ohms) | SRF typ<br>(MHz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ<br>( $\mu$ H) | Isat (A)    |             |             | Irms (A)         |                |
|---------------------------|--------------------------|-------------------|------------------|--------------------------------|--------------------------------|-------------|-------------|-------------|------------------|----------------|
|                           |                          |                   |                  |                                |                                | 10%<br>drop | 20%<br>drop | 30%<br>drop | both<br>windings | one<br>winding |
| 4R7M                      | 4.7 $\pm$ 20%            | 0.040             | 33.0             | 0.96                           | 0.22                           | 13.90       | 16.20       | 16.98       | 3.16             | 4.47           |
| 5R6M                      | 5.6 $\pm$ 20%            | 0.046             | 30.0             | 0.98                           | 0.23                           | 13.36       | 14.35       | 15.74       | 2.87             | 4.06           |
| 6R8M                      | 6.8 $\pm$ 20%            | 0.048             | 23.0             | 0.98                           | 0.22                           | 12.10       | 13.56       | 14.20       | 2.81             | 3.98           |
| 8R2M                      | 8.2 $\pm$ 20%            | 0.055             | 20.0             | 0.98                           | 0.34                           | 10.30       | 11.52       | 12.36       | 2.70             | 3.80           |
| 100M                      | 10 $\pm$ 20%             | 0.058             | 17.0             | 0.98                           | 0.34                           | 8.80        | 10.00       | 10.86       | 2.58             | 3.82           |
| 120M                      | 12 $\pm$ 20%             | 0.062             | 15.0             | 0.98                           | 0.36                           | 8.20        | 9.18        | 9.74        | 2.48             | 3.50           |
| 150M                      | 15 $\pm$ 20%             | 0.072             | 13.0             | 0.98                           | 0.41                           | 7.40        | 8.36        | 8.93        | 2.30             | 3.25           |
| 180M                      | 18 $\pm$ 20%             | 0.080             | 12.0             | 0.99                           | 0.37                           | 6.50        | 7.38        | 7.86        | 2.16             | 3.09           |
| 220M                      | 22 $\pm$ 20%             | 0.096             | 11.0             | 0.99                           | 0.41                           | 6.00        | 6.80        | 7.26        | 1.99             | 2.81           |
| 270M                      | 27 $\pm$ 20%             | 0.120             | 10.0             | 0.99                           | 0.49                           | 5.80        | 6.56        | 7.02        | 1.78             | 2.52           |
| 330M                      | 33 $\pm$ 20%             | 0.150             | 9.5              | 0.99                           | 0.56                           | 5.60        | 6.10        | 6.52        | 1.58             | 2.25           |
| 390M                      | 39 $\pm$ 20%             | 0.161             | 8.8              | 0.98                           | 0.64                           | 4.70        | 5.26        | 5.68        | 1.54             | 2.18           |
| 470M                      | 47 $\pm$ 20%             | 0.180             | 7.5              | 0.99                           | 0.70                           | 3.70        | 4.34        | 4.60        | 1.45             | 2.05           |
| 560M                      | 56 $\pm$ 20%             | 0.190             | 7.6              | 0.98                           | 0.76                           | 3.60        | 4.18        | 4.50        | 1.41             | 2.00           |
| 680M                      | 66 $\pm$ 20%             | 0.210             | 6.5              | 0.99                           | 0.88                           | 3.50        | 4.04        | 4.32        | 1.35             | 1.90           |
| 820M                      | 82 $\pm$ 20%             | 0.280             | 5.0              | 0.98                           | 0.88                           | 2.80        | 3.72        | 4.02        | 1.16             | 1.65           |
| 101M                      | 100 $\pm$ 20%            | 0.300             | 4.5              | $\geq$ 0.99                    | 0.90                           | 2.20        | 3.24        | 3.48        | 1.13             | 1.59           |
| 121K                      | 120 $\pm$ 10%            | 0.410             | 4.3              | 0.99                           | 1.31                           | 2.10        | 2.94        | 3.18        | 0.96             | 1.38           |
| 151K                      | 150 $\pm$ 10%            | 0.460             | 4.1              | $\geq$ 0.99                    | 1.46                           | 3.30        | 2.54        | 2.70        | 0.91             | 1.29           |
| 181K                      | 180 $\pm$ 10%            | 0.510             | 4.0              | $\geq$ 0.98                    | 0.93                           | 2.80        | 2.42        | 2.58        | 0.86             | 1.22           |
| 221K                      | 220 $\pm$ 10%            | 0.690             | 3.4              | $\geq$ 0.99                    | 1.54                           | 1.90        | 2.18        | 2.28        | 0.74             | 1.05           |
| 271K                      | 270 $\pm$ 10%            | 0.800             | 3.1              | $\geq$ 0.99                    | 1.17                           | 1.70        | 1.94        | 2.10        | 0.66             | 0.92           |
| 331K                      | 330 $\pm$ 10%            | 1.02              | 2.9              | 0.99                           | 4.14                           | 1.50        | 1.70        | 1.84        | 0.61             | 0.88           |
| 391K                      | 390 $\pm$ 10%            | 1.17              | 2.7              | $\geq$ 0.99                    | 1.84                           | 1.40        | 1.60        | 1.70        | 0.58             | 0.82           |
| 471K                      | 470 $\pm$ 10%            | 1.53              | 2.2              | $\geq$ 0.99                    | 0.25                           | 1.30        | 1.50        | 1.60        | 0.50             | 0.70           |
| 681K                      | 560 $\pm$ 10%            | 1.89              | 2.0              | $\geq$ 0.99                    | 2.88                           | 1.20        | 1.34        | 1.46        | 0.47             | 0.67           |
| 881K                      | 680 $\pm$ 10%            | 2.28              | 1.7              | $\geq$ 0.99                    | 2.11                           | 1.00        | 1.08        | 1.22        | 0.41             | 0.58           |
| 821K                      | 820 $\pm$ 10%            | 2.55              | 1.6              | $\geq$ 0.99                    | 2.39                           | 0.900       | 1.04        | 1.18        | 0.39             | 0.55           |
| 102K                      | 1000 $\pm$ 10%           | 2.87              | 1.3              | $\geq$ 0.99                    | 4.26                           | 0.850       | 0.946       | 1.06        | 0.37             | 0.52           |

1. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.
2. DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
3. SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value.
4. Leakage inductance is for L1 and is measured with L2 shorted.
5. DC current at 25 °C that causes the specified inductance drop from its value without current. It is the sum of the current flowing in both windings.
6. Equal current when applied to each winding simultaneously that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings.
7. Maximum current when applied to one winding that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings.
8. Electrical specifications at 25 °C.
9. Ambient temperature -40 °C to +125 °C with (40 °C rise) I rms current.
10. Maximum per temperature +165 °C (ambient + temp rise).
11. Storage temperature Component: -40 °C to +165 °C.
12. Tape and reel packaging: -40 °C to +80 °C.
13. Winding to winding isolation 100 Vrms, one minute.
14. Resistance to soldering heat Max three 40 second reflows at +260 °C, parts cooled to room temperature between cycles.
15. Packaging 1000/7" reel; 3500/13" reel.

## PHYSICAL CHARACTERISTICS & WINDING:

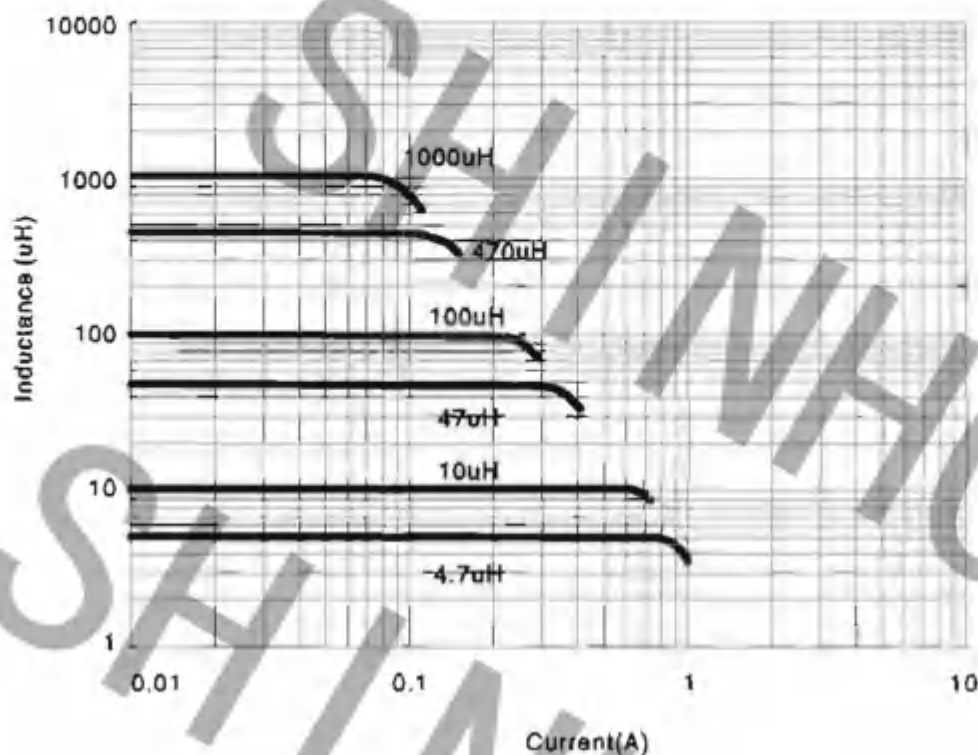
Dimensions are in mm



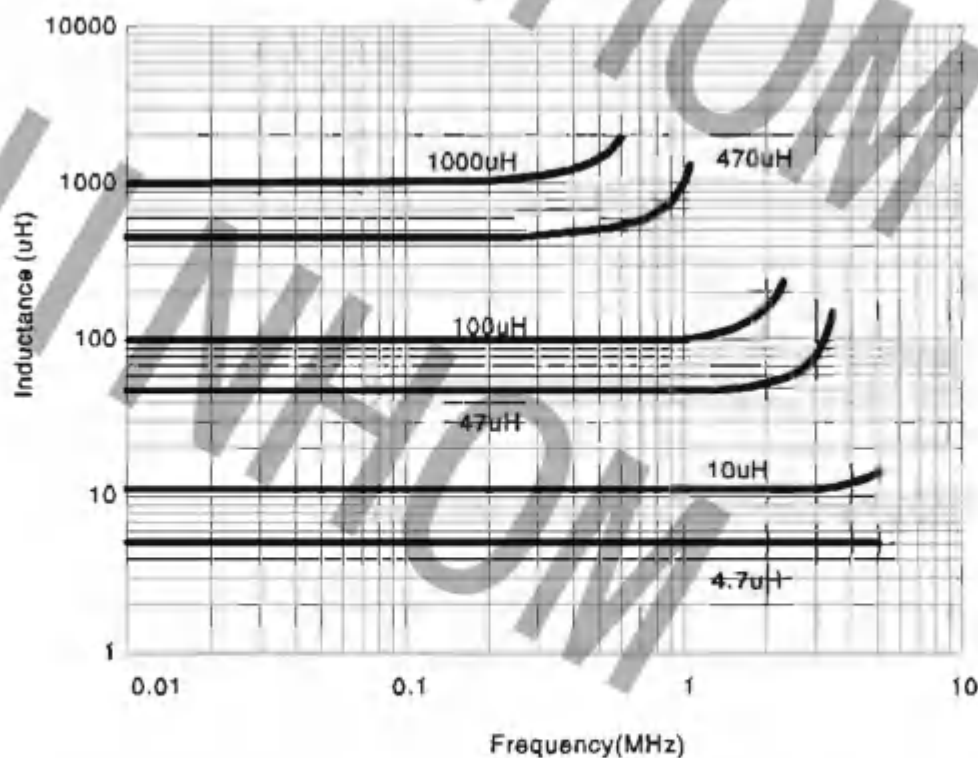


## PERFORMANCE CURVE:

TYPICAL L VS CURRENT



TYPICAL L VS FREQUENCY





# COUPLED INDUCTORS,COMMON MODE CHOKES

## SDRH1514D SERIES



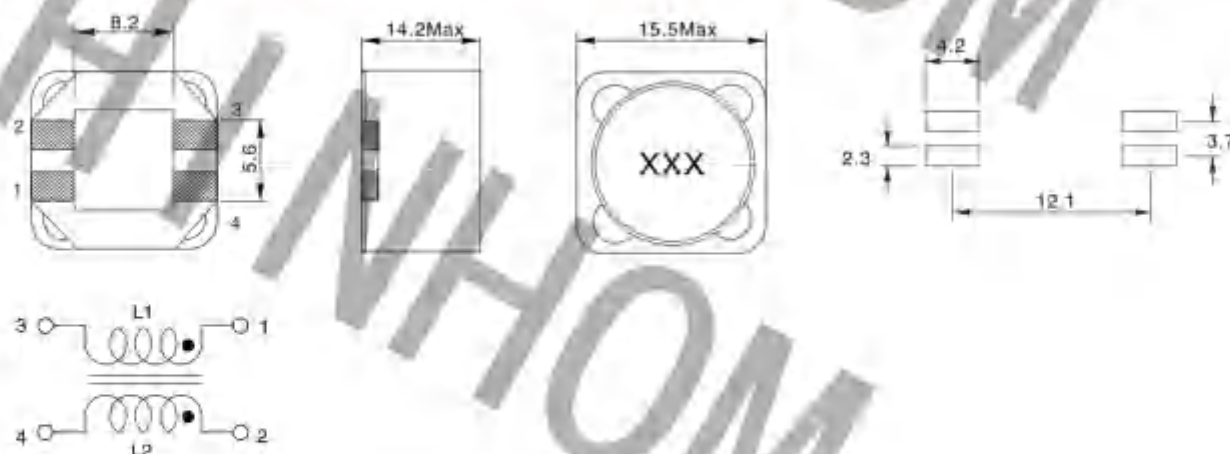
### FEATURES:

- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Up to 100 MHz differential mode cutoff frequency
- Can be used as coupled inductors for SEPIC applications
- RoHS compliant

### ELECTRICAL CHARACTERISTICS:

| Partnumber     | Common mode impedance<br>Max.(K $\Omega$ ) | Cutoff frequency<br>(MHz) | Inductance<br>( $\mu$ H) |      | DCR max<br>( $\Omega$ ) | Isolation<br>(Vrms) | Irms<br>(A) |
|----------------|--------------------------------------------|---------------------------|--------------------------|------|-------------------------|---------------------|-------------|
|                |                                            |                           | Min                      | Nom  |                         |                     |             |
| SDRH1514D-2R5M | 2.96 @ 35 MHz                              | 100                       | 2.00                     | 2.5  | 0.012                   | 500                 | 6.0         |
| SDRH1514D-4R7M | 4.02 @ 23 MHz                              | 18.0                      | 3.76                     | 4.7  | 0.014                   | 500                 | 5.4         |
| SDRH1514D-100M | 6.54 @ 14 MHz                              | 17.0                      | 8.00                     | 10   | 0.018                   | 500                 | 4.8         |
| SDRH1514D-120M | 7.83 @ 14 MHz                              | 26.0                      | 9.60                     | 12   | 0.022                   | 500                 | 4.7         |
| SDRH1514D-150M | 11.7 @ 11 MHz                              | 9.3                       | 12.00                    | 15   | 0.028                   | 500                 | 4.1         |
| SDRH1514D-220M | 17.1 @ 8.16 MHz                            | 14.0                      | 17.60                    | 22   | 0.036                   | 500                 | 3.8         |
| SDRH1514D-270M | 17.9 @ 7.20 MHz                            | 10.0                      | 21.60                    | 27   | 0.039                   | 500                 | 3.5         |
| SDRH1514D-330M | 22.6 @ 7.19 MHz                            | 21.0                      | 26.40                    | 33   | 0.052                   | 500                 | 3.0         |
| SDRH1514D-470M | 47.6 @ 6.40 MHz                            | 5.3                       | 37.60                    | 47   | 0.075                   | 500                 | 2.6         |
| SDRH1514D-680M | 37.8 @ 4.30 MHz                            | 8.8                       | 54.40                    | 68   | 0.090                   | 500                 | 2.2         |
| SDRH1514D-101K | 59.8 @ 3.70 MHz                            | 11.0                      | 90.00                    | 100  | 0.126                   | 500                 | 2.0         |
| SDRH1514D-221K | 85.6 @ 2.90 MHz                            | 10.0                      | 196                      | 220  | 0.267                   | 500                 | 1.3         |
| SDRH1514D-331K | 58 @ 2.00 MHz                              | 7.3                       | 297                      | 330  | 0.367                   | 500                 | 1.2         |
| SDRH1514D-471K | 101.9 @ 1.60 MHz                           | 5.3                       | 423                      | 470  | 0.550                   | 500                 | 0.92        |
| SDRH1514D-102K | 157.9 @ 1.10 MHz                           | 4.9                       | 900                      | 1000 | 1.25                    | 500                 | 0.66        |

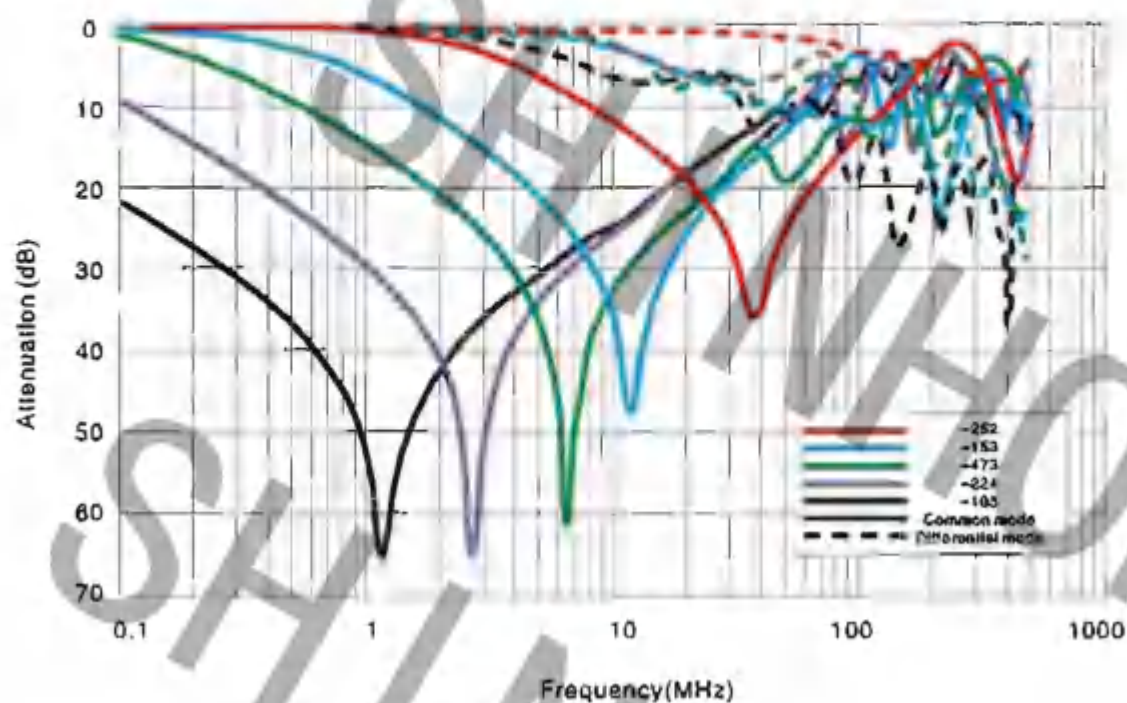
### PHYSICAL CHARACTERISTICS & WINDING:



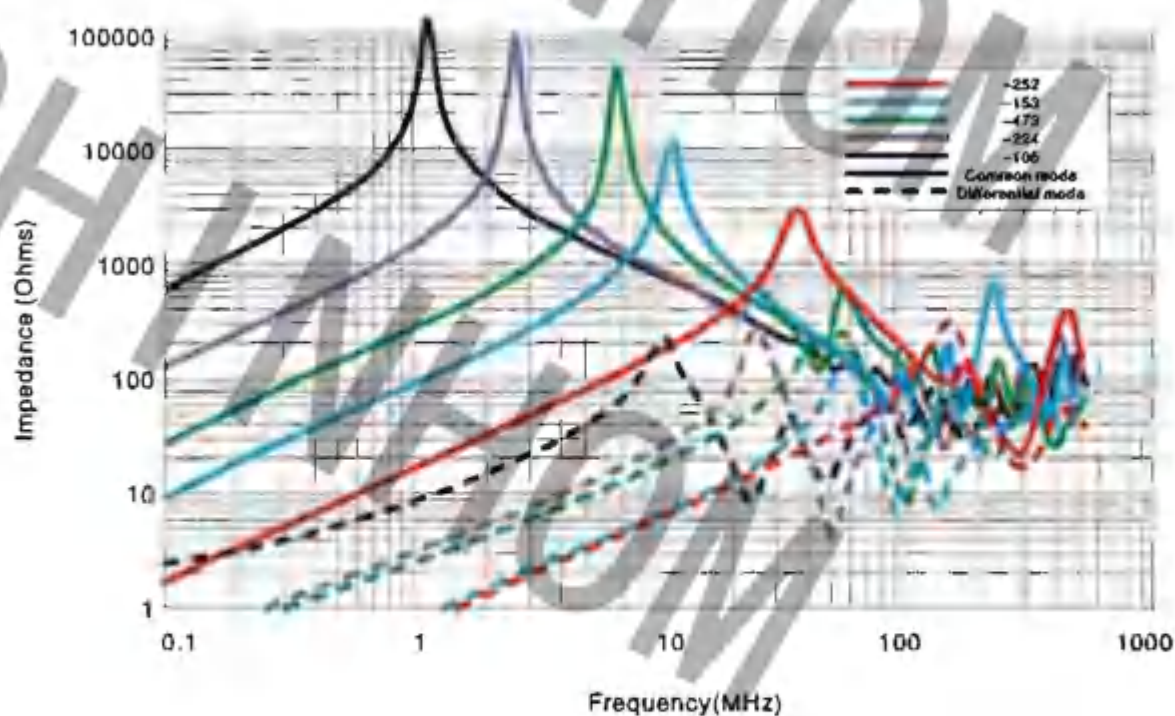
1. Frequency at which the differential mode attenuation equals 3dB
2. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Adc on an Agilent/HP 4284A LCR meter or equivalent
3. DCR is for each winding.
4. Winding-to-winding isolation 500 Vrms, one minute
5. Current that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
6. Electrical specifications at 25 °C
7. Ambient temperature -40 °C to +85 °C with Irms current. Maximum part temperature +125 °C (ambient + temp rise).
8. Storage temperature Component: -40 °C to +125 °C.
9. Tape and reel packaging: -40 °C to +80 °C

## PERFORMANCE CURVE:

TYPICAL ATTENUATION (REF: 50 OHMS)



TYPICAL IMPEDANCE VS FREQUENCY





# COUPLED INDUCTORS, COMMON MODE CHOKES SDRH1583D SERIES



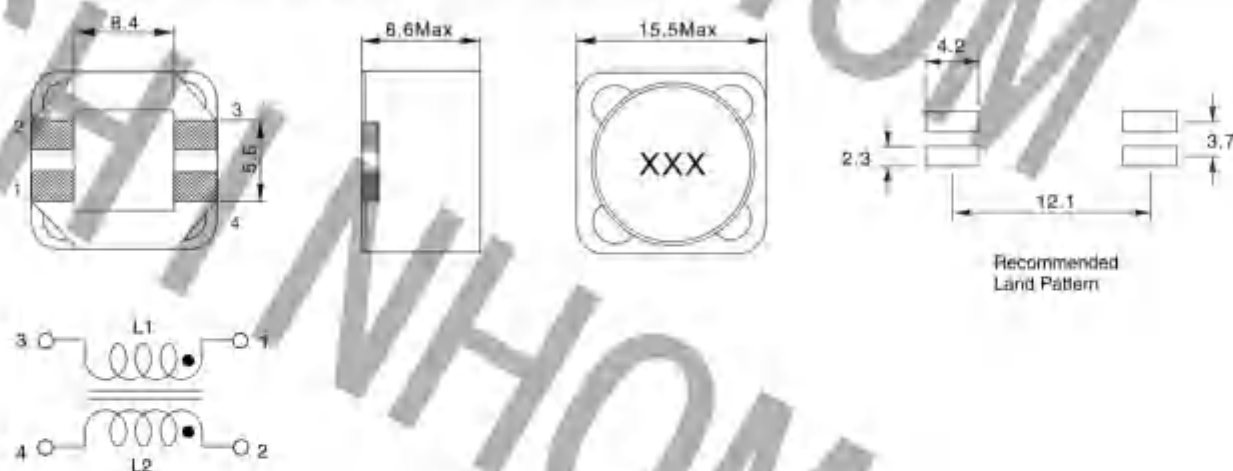
## FEATURES:

- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Up to 38 MHz differential mode cutoff frequency
- Can be used as coupled inductors for SEPIC applications
- RoHS compliant

## ELECTRICAL CHARACTERISTICS:

| Part number    | Common mode impedance<br>Max (K $\Omega$ ) | Cutoff frequency<br>(MHz) | Inductance<br>( $\mu$ H) |      | DCR max<br>( $\Omega$ ) | Isolation<br>(Vrms) | Irms<br>(A) |
|----------------|--------------------------------------------|---------------------------|--------------------------|------|-------------------------|---------------------|-------------|
|                |                                            |                           | Min                      | Nom  |                         |                     |             |
| SDRH1583D-100M | 10.86 @ 17 MHz                             | 38                        | 8.0                      | 10   | 0.031                   | 500                 | 3.68        |
| SDRH1583D-120M | 12.11 @ 16 MHz                             | 30                        | 9.6                      | 12   | 0.037                   | 500                 | 3.54        |
| SDRH1583D-150M | 12.31 @ 14 MHz                             | 25                        | 12.0                     | 15   | 0.045                   | 500                 | 3.18        |
| SDRH1583D-180M | 16.77 @ 13 MHz                             | 25                        | 14.4                     | 18   | 0.048                   | 500                 | 3.04        |
| SDRH1583D-220M | 14.47 @ 12 MHz                             | 28                        | 17.6                     | 22   | 0.065                   | 500                 | 2.44        |
| SDRH1583D-330M | 33.82 @ 9 MHz                              | 28                        | 26.4                     | 33   | 0.095                   | 500                 | 2.16        |
| SDRH1583D-470M | 39.79 @ 7.6 MHz                            | 23                        | 37.6                     | 47   | 0.115                   | 500                 | 1.98        |
| SDRH1583D-680M | 49.24 @ 5.9 MHz                            | 17                        | 54.4                     | 68   | 0.165                   | 500                 | 1.50        |
| SDRH1583D-101K | 69.83 @ 5 MHz                              | 16                        | 90.0                     | 100  | 0.280                   | 500                 | 1.24        |
| SDRH1583D-151K | 73.09 @ 3.9 MHz                            | 12                        | 135                      | 150  | 0.380                   | 500                 | 1.06        |
| SDRH1583D-221K | 78.91 @ 3.3 MHz                            | 9.7                       | 198                      | 220  | 0.460                   | 500                 | 0.92        |
| SDRH1583D-471K | 104.9 @ 2.2 MHz                            | 7.4                       | 423                      | 470  | 1.04                    | 500                 | 0.65        |
| SDRH1583D-102K | 129.0 @ 1.5 MHz                            | 5.8                       | 900                      | 1000 | 2.40                    | 500                 | 0.42        |

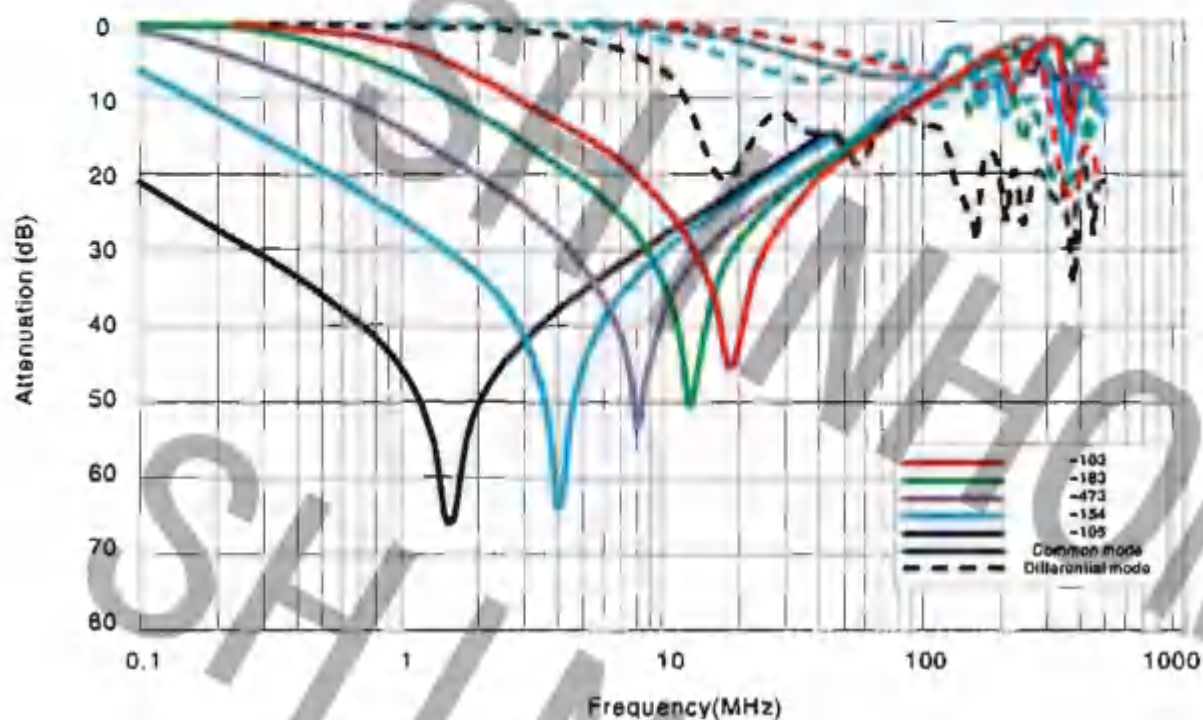
## PHYSICAL CHARACTERISTICS & WINDING:



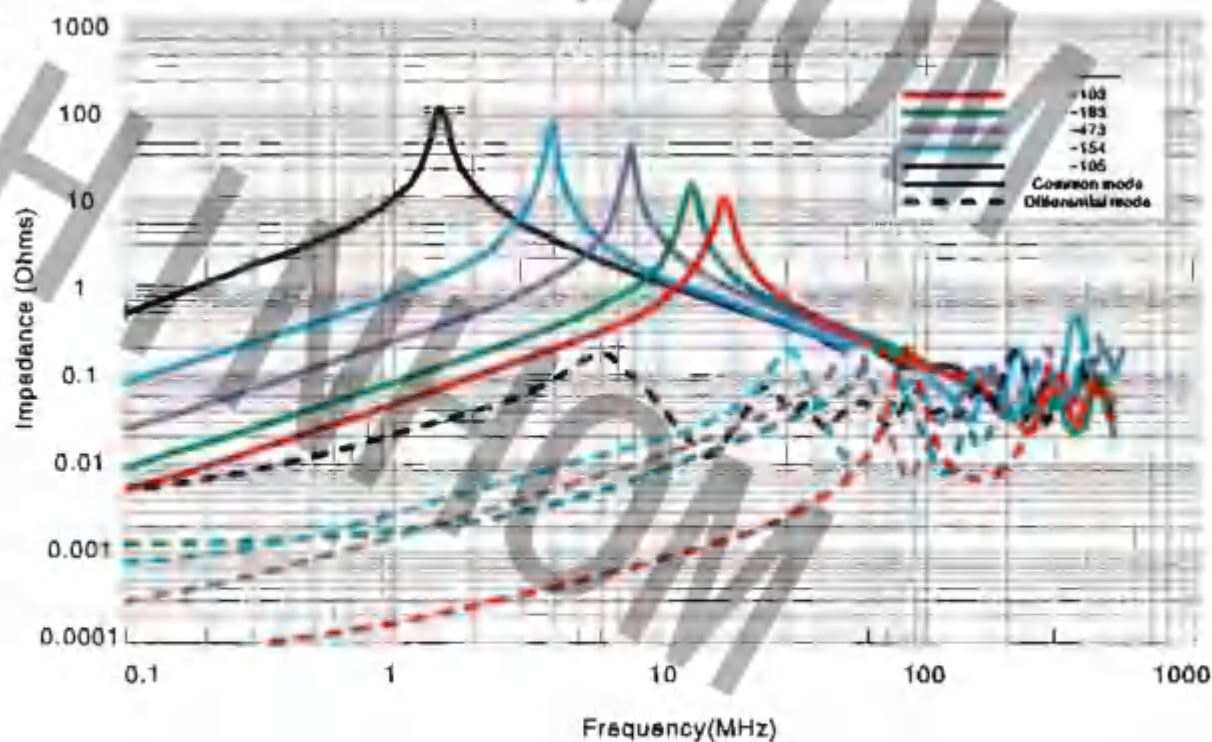
1. Frequency at which the differential mode attenuation equals 3dB
2. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent
3. DCR is for each winding.
4. Winding-to-winding isolation 500 Vrms, one minute
5. Current that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
6. Electrical specifications at 25 °C
7. Ambient temperature -40 °C to +85 °C with I rms current. Maximum part temperature +125 °C (ambient + temp rise).
8. Storage temperature Component: -40 °C to +125 °C.
9. Tape and reel packaging: -40 °C to +80 °C

## PERFORMANCE CURVE:

TYPICAL ATTENUATION (REF: 50 OHMS)



TYPICAL IMPEDANCE VS FREQUENCY





# COMMON MODE CHOKE, COUPLED INDUCTOR SDRH1614D SERIES



## FEATURES:

- Low DCR, high rated current.
- Magnetic shielded structure
- Lead free product, RoHS compliant.
- Carrier tape packing, suitable for SMT process.

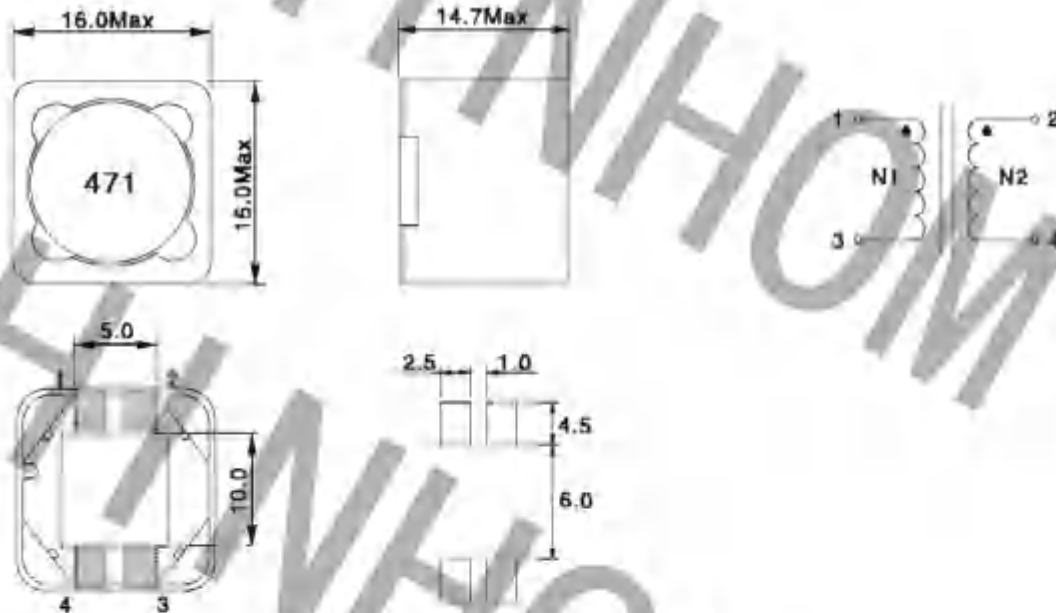
## APPLICATIONS:

- Widely used in buck converter, laptop, display, network communication equipment, and etc.

## ELECTRICAL CHARACTERISTICS@25°C

| Part Number    | Inductance (uH) | DCR (mΩ)Max | Leakage Inductance (uH)Typ. | Saturation current(A) |         |         | Temperature rise current(A) |             |
|----------------|-----------------|-------------|-----------------------------|-----------------------|---------|---------|-----------------------------|-------------|
|                |                 |             |                             | 10%drop               | 20%drop | 30%drop | Both windings               | One winding |
| SDRH1614D-220M | 22.0±20%        | 36.0        | 0.45                        | 9.1                   | 9.6     | 10.2    | 3.8                         | 5.4         |
| SDRH1614D-270M | 27.0±20%        | 39.0        | 0.45                        | 9.0                   | 9.6     | 10.2    | 3.3                         | 4.7         |
| SDRH1614D-330M | 33.0±20%        | 42.0        | 0.45                        | 7.4                   | 8.2     | 9.0     | 3.2                         | 4.5         |
| SDRH1614D-470M | 47.0±20%        | 54.0        | 0.55                        | 5.8                   | 6.6     | 6.75    | 3.05                        | 4.31        |
| SDRH1614D-660M | 66.0±20%        | 65.0        | 0.55                        | 5.3                   | 5.7     | 5.9     | 2.72                        | 3.84        |
| SDRH1614D-101M | 100±10%         | 93.0        | 0.55                        | 4.35                  | 4.75    | 4.95    | 2.09                        | 2.94        |
| SDRH1614D-221M | 220±10%         | 172.0       | 0.7                         | 2.95                  | 3.2     | 3.3     | 1.81                        | 2.27        |
| SDRH1614D-331M | 330±10%         | 258.0       | 0.8                         | 2.55                  | 2.65    | 2.78    | 1.32                        | 1.65        |
| SDRH1614D-471M | 470±10%         | 362.0       | 1.2                         | 2.0                   | 2.2     | 2.3     | 1.03                        | 1.46        |
| SDRH1614D-102M | 1000±10%        | 765.0       | 2.0                         | 1.45                  | 1.55    | 1.6     | 0.78                        | 1.1         |

## TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS

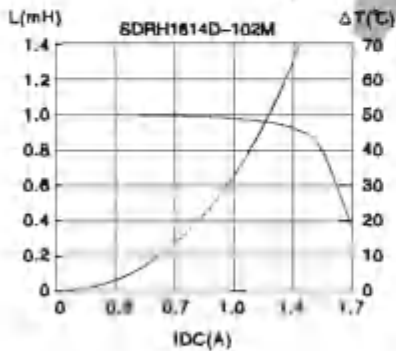
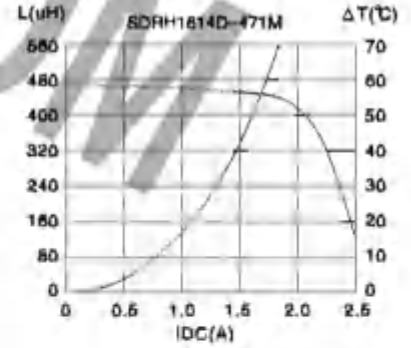
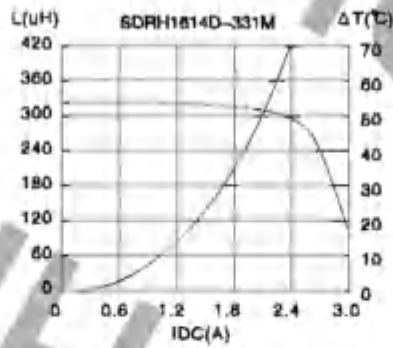
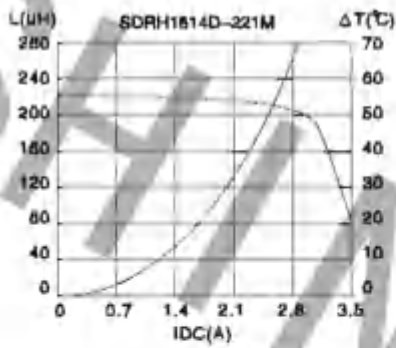
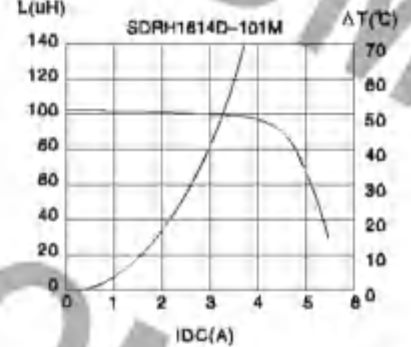
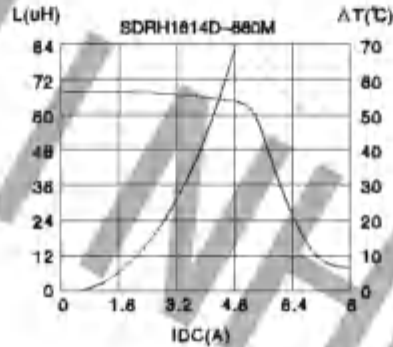
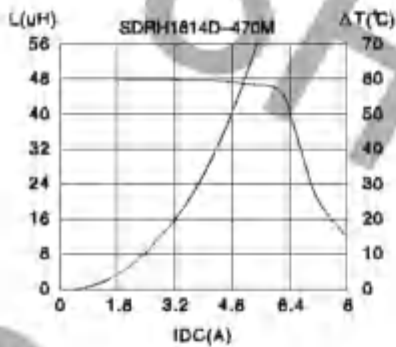
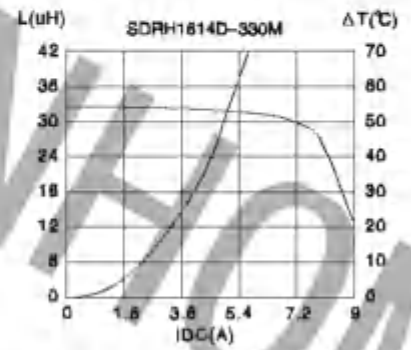
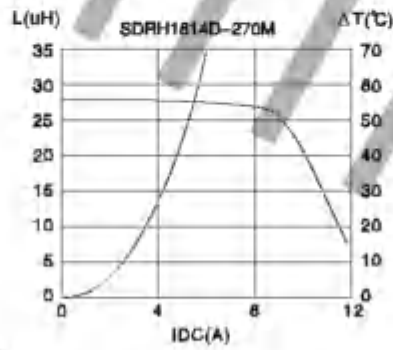
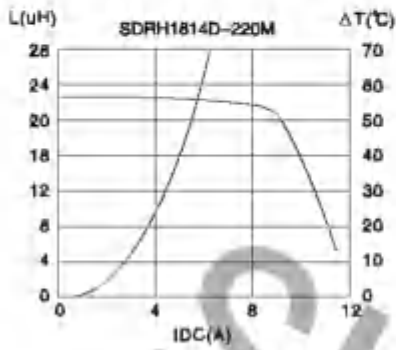


- All data is tested based on 25°C ambient temperature
- Inductance measure condition at 100kHz, 0.1V
- Leakage Inductance is for N1 and is measured with N2 shorted
- Saturation current: the actual value of DC current when the inductance decrease corresponding percentage of its initial value
- Temperature rise current: the actual value of DC current when the temperature rise is  $\Delta T 40^{\circ}\text{C}$  ( $T_a=25^{\circ}\text{C}$ )
- Operating temperature:  $-40^{\circ}\text{C}$  to  $+125^{\circ}\text{C}$  (including self temperature rise)
- Special remind: Circuit design, component placement, PCB size and thickness, cooling system and etc. all will effect the product temperature. Please verify the product temperature in the final application.

# COMMON MODE CHOKE, COUPLED INDUCTOR SDRH1614D SERIES



## SATURATION CURRENT VS TEMPERATURE RISE CURRENT CURVE



## COUPLED INDUCTORS, COMMON MODE CHOKES SDRH3015D SERIES



### FEATURES:

- Only 1.4 mm high and 3 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke
- UL Certified per File E218588

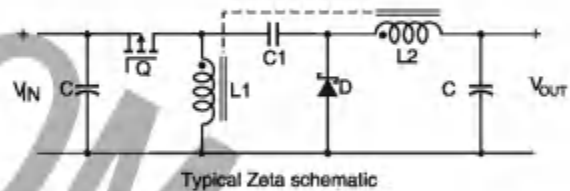
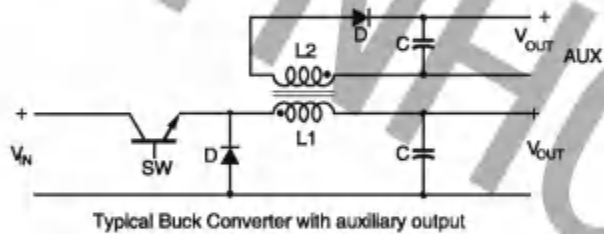
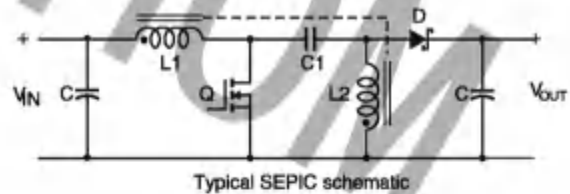
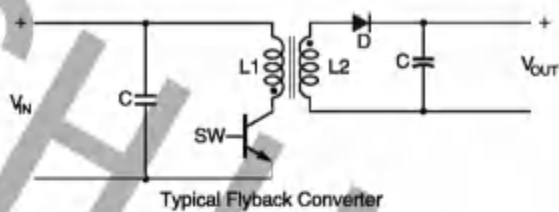
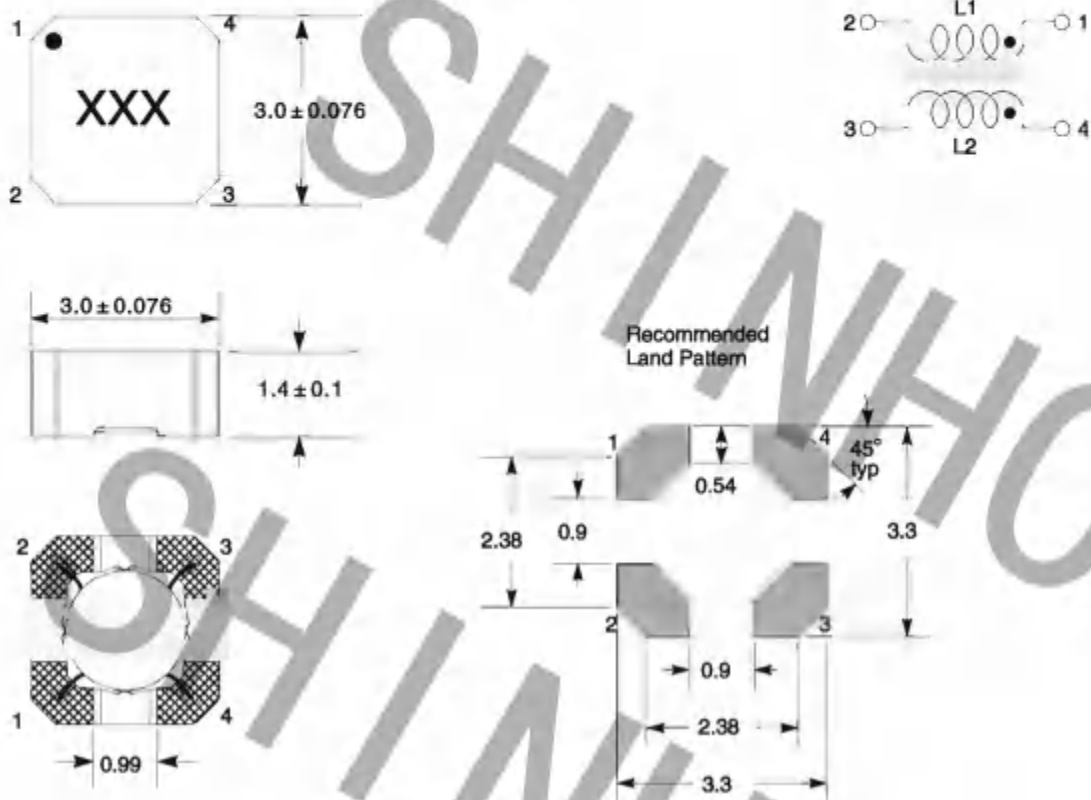
### ELECTRICAL CHARACTERISTICS:

| Part number<br>SDRH3015D- | Inductance<br>$\pm 20\%$ ( $\mu$ H) | DCR max<br>(Ohms) | SRF typ<br>(MHz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ<br>( $\mu$ H) | Isat (A)    |             |             | Irms (A)         |                 |
|---------------------------|-------------------------------------|-------------------|------------------|--------------------------------|--------------------------------|-------------|-------------|-------------|------------------|-----------------|
|                           |                                     |                   |                  |                                |                                | 10%<br>drop | 20%<br>drop | 30%<br>drop | both<br>windings | one<br>windings |
| R39M                      | 0.39                                | 0.071             | 289              | 0.89                           | 0.08                           | 3.2         | 3.3         | 3.4         | 1.45             | 2.05            |
| R56M                      | 0.56                                | 0.078             | 235              | 0.93                           | 0.08                           | 2.7         | 2.8         | 2.9         | 1.37             | 1.94            |
| 1R0M                      | 1.0                                 | 0.128             | 180              | 0.95                           | 0.09                           | 2.0         | 2.1         | 2.2         | 1.08             | 1.52            |
| 1R5M                      | 1.5                                 | 0.204             | 140              | 0.96                           | 0.11                           | 1.6         | 1.7         | 1.8         | 0.88             | 1.20            |
| 1R8M                      | 1.8                                 | 0.273             | 105              | 0.96                           | 0.13                           | 1.5         | 1.6         | 1.6         | 0.78             | 1.10            |
| 2R2M                      | 2.2                                 | 0.300             | 110              | 0.87                           | 0.14                           | 1.5         | 1.6         | 1.6         | 0.75             | 1.05            |
| 3R3M                      | 3.3                                 | 0.337             | 90               | 0.88                           | 0.18                           | 1.0         | 1.1         | 1.2         | 0.67             | 0.94            |
| 4R7M                      | 4.7                                 | 0.503             | 79               | 0.88                           | 0.18                           | 0.86        | 0.87        | 0.88        | 0.54             | 0.76            |
| 6R8M                      | 6.8                                 | 0.622             | 58               | 0.88                           | 0.22                           | 0.77        | 0.78        | 0.79        | 0.48             | 0.69            |
| 100M                      | 10                                  | 1.040             | 48               | 0.88                           | 0.26                           | 0.58        | 0.59        | 0.60        | 0.38             | 0.53            |
| 150M                      | 15                                  | 1.420             | 35               | 0.89                           | 0.37                           | 0.49        | 0.50        | 0.51        | 0.32             | 0.46            |
| 180M                      | 18                                  | 1.550             | 33               | 0.89                           | 0.42                           | 0.46        | 0.47        | 0.48        | 0.31             | 0.44            |
| 220M                      | 22                                  | 1.89              | 30               | 0.89                           | 0.48                           | 0.42        | 0.43        | 0.44        | 0.28             | 0.40            |
| 330M                      | 33                                  | 2.64              | 23               | 0.89                           | 0.63                           | 0.34        | 0.35        | 0.36        | 0.23             | 0.32            |
| 470M                      | 47                                  | 4.03              | 17               | 0.88                           | 0.81                           | 0.28        | 0.29        | 0.30        | 0.19             | 0.27            |
| 680M                      | 68                                  | 6.11              | 14               | 0.88                           | 1.13                           | 0.24        | 0.25        | 0.26        | 0.16             | 0.22            |
| 101M                      | 100                                 | 6.54              | 11               | 0.89                           | 1.50                           | 0.20        | 0.21        | 0.22        | 0.13             | 0.19            |
| 121M                      | 120                                 | 9.23              | 9.0              | 0.89                           | 1.76                           | 0.19        | 0.20        | 0.20        | 0.13             | 0.18            |
| 151M                      | 150                                 | 12.40             | 8.0              | 0.89                           | 2.22                           | 0.18        | 0.17        | 0.18        | 0.11             | 0.16            |
| 181M                      | 180                                 | 16.32             | 7.6              | 0.89                           | 2.79                           | 0.16        | 0.16        | 0.17        | 0.10             | 0.14            |
| 221M                      | 220                                 | 18.66             | 6.0              | 0.89                           | 3.50                           | 0.13        | 0.14        | 0.15        | 0.09             | 0.13            |
| 331M                      | 330                                 | 27.70             | 5.0              | 0.89                           | 5.18                           | 0.11        | 0.12        | 0.12        | 0.07             | 0.10            |

1. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.
2. DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
3. SRF measured using an Agilent/HP 4181A or equivalent. When leads are connected in parallel, SRF is the same value.
4. Leakage inductance is for L1 and is measured with L2 shorted.
5. DC current at 25 °C that causes the specified inductance drop from its value without current. It is the sum of the current flowing in both windings.
6. Equal current when applied to each winding simultaneously that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings.
7. Maximum current when applied to one winding that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings.
8. Electrical specifications at 25 °C.
9. Ambient temperature -40 °C to +85 °C with (40 °C rise) rms current.
10. Maximum part temperature +125 °C (ambient + temp rise).
11. Storage temperature Component: -40 °C to +125 °C.
12. Tape and reel packaging: -40 °C to +80 °C.
13. Winding to winding isolation 100 Vrms, one minute.
14. Resistance to soldering heat: Max three 40 second reflows at +260 °C, parts cooled to room temperature between cycles.
15. Packaging 1000/7" reel; 3500/13" reel.

## PHYSICAL CHARACTERISTICS & WINDING:

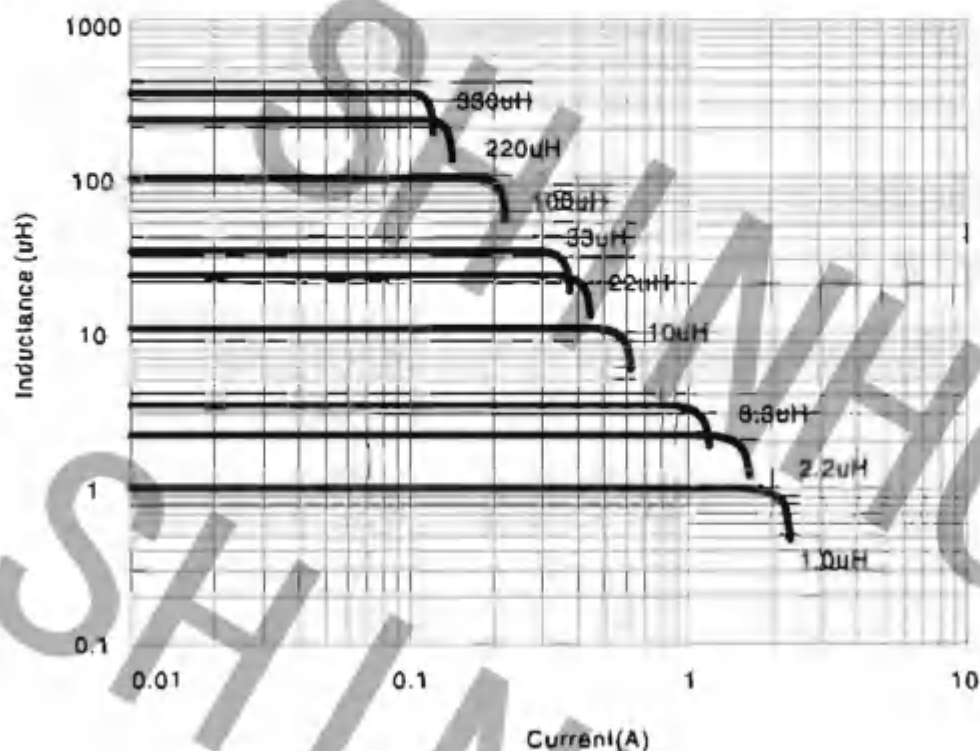
Dimensions are in mm



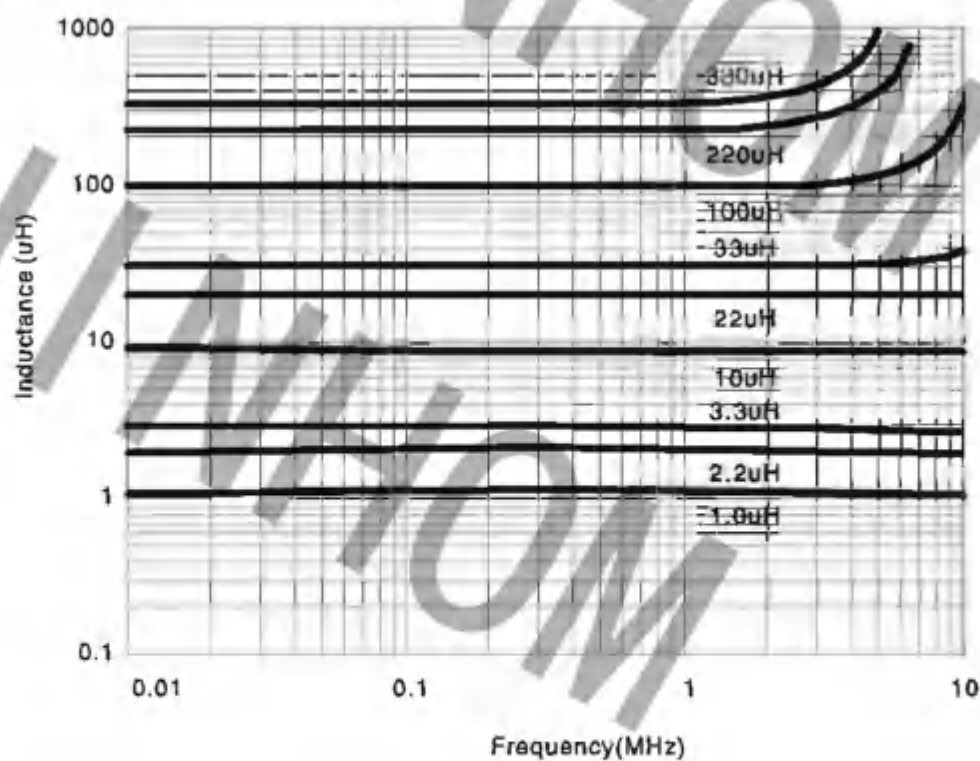


## PERFORMANCE CURVE:

TYPICAL L VS CURRENT



TYPICAL L VS FREQUENCY



# COUPLED INDUCTORS, COMMON MODE CHOKES

## SDRH4012D SERIES

### FEATURES:

- Only 1.1 mm high and 4 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke
- AEC-Q200 Grade 1 (40°C to +125°C)



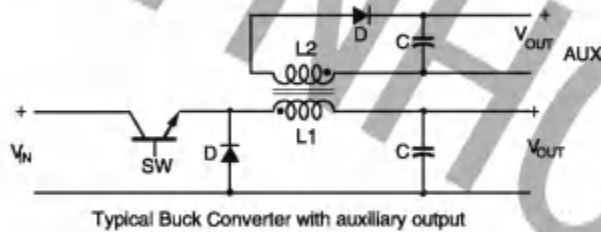
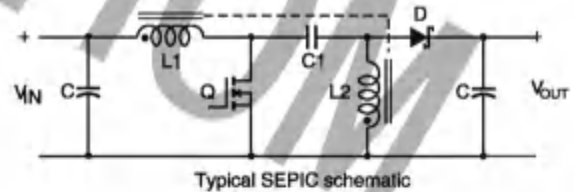
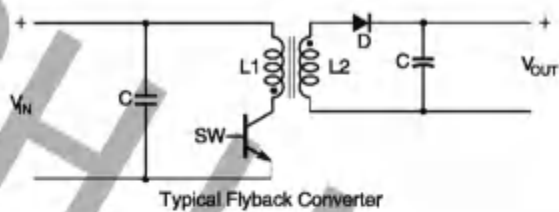
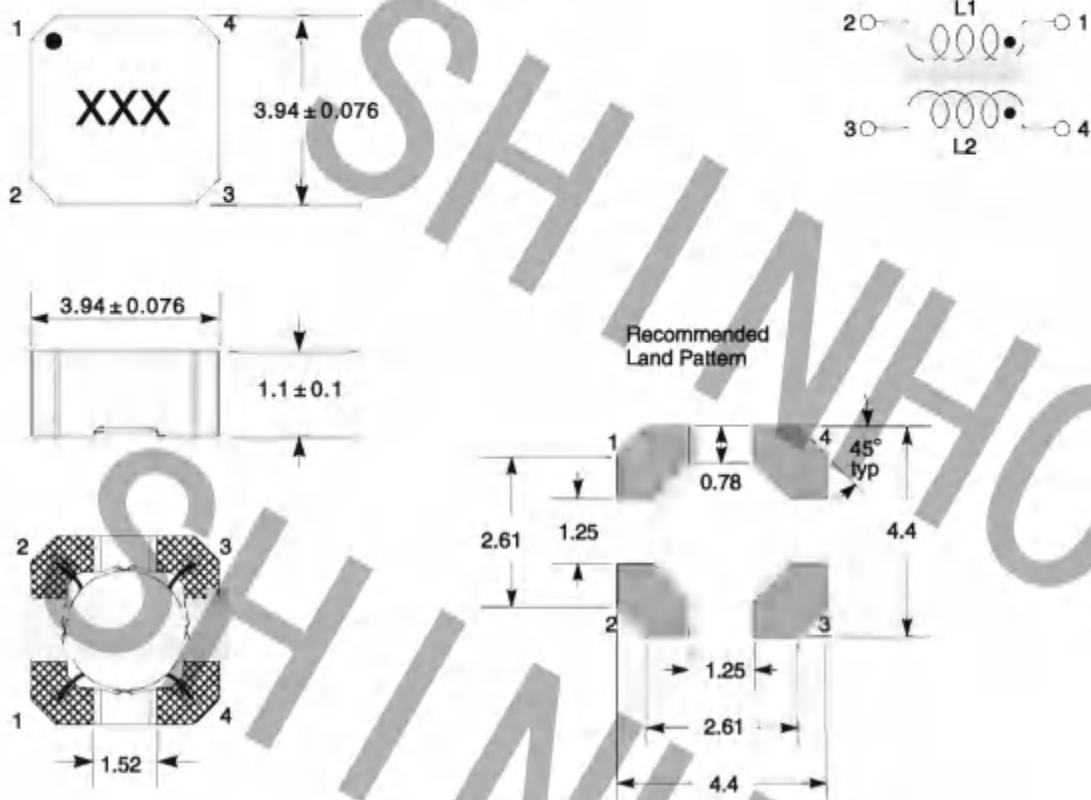
### ELECTRICAL CHARACTERISTICS:

| Part number<br>SDRH4012D- | Inductance<br>( $\mu$ H) | DCR max<br>( $\Omega$ ms) | SRF typ<br>(MHz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ<br>( $\mu$ H) | Isat (A)    |             |             | Irms (A)         |                 |
|---------------------------|--------------------------|---------------------------|------------------|--------------------------------|--------------------------------|-------------|-------------|-------------|------------------|-----------------|
|                           |                          |                           |                  |                                |                                | 10%<br>drop | 20%<br>drop | 30%<br>drop | both<br>windings | one<br>windings |
| R33N                      | 0.33 +30%                | 0.042                     | 255              | 0.94                           | 0.06                           | 5.2         | 5.4         | 5.5         | 1.87             | 2.65            |
| R56N                      | 0.56 +30%                | 0.087                     | 185              | 0.95                           | 0.08                           | 3.7         | 3.8         | 3.9         | 1.30             | 1.84            |
| R82N                      | 0.82 +30%                | 0.100                     | 130              | 0.97                           | 0.09                           | 3.2         | 3.3         | 3.4         | 1.21             | 1.72            |
| 1R5N                      | 1.5 +30%                 | 0.185                     | 88               | 0.97                           | 0.11                           | 2.50        | 2.81        | 2.91        | 1.15             | 1.42            |
| 2R2N                      | 2.2 +30%                 | 0.235                     | 70               | 0.98                           | 0.14                           | 2.30        | 2.40        | 2.50        | 0.95             | 1.35            |
| 3R3N                      | 3.3 +30%                 | 0.320                     | 48               | 0.96                           | 0.16                           | 1.80        | 1.90        | 2.00        | 0.75             | 1.06            |
| 4R7M                      | 4.7 +20%                 | 0.500                     | 39               | 0.98                           | 0.18                           | 1.70        | 1.80        | 1.90        | 0.65             | 0.92            |
| 5R6M                      | 5.6 +20%                 | 0.620                     | 32               | 0.99                           | 0.20                           | 1.60        | 1.70        | 1.80        | 0.55             | 0.78            |
| 6R8M                      | 6.8 +20%                 | 0.530                     | 31               | 0.99                           | 0.22                           | 1.20        | 1.52        | 1.63        | 0.60             | 0.86            |
| 8R2M                      | 8.2 +20%                 | 0.600                     | 29               | 0.98                           | 0.24                           | 1.10        | 1.20        | 1.30        | 0.55             | 0.78            |
| 100M                      | 10 +20%                  | 0.750                     | 25               | 0.98                           | 0.26                           | 0.88        | 1.00        | 1.10        | 0.60             | 0.71            |
| 150M                      | 15 +20%                  | 1.13                      | 21               | 0.99                           | 0.30                           | 0.90        | 0.92        | 0.94        | 0.48             | 0.60            |
| 220M                      | 22 +20%                  | 1.63                      | 15               | 0.99                           | 0.34                           | 0.70        | 0.82        | 0.84        | 0.34             | 0.48            |
| 330M                      | 33 +20%                  | 1.83                      | 18               | > 0.98                         | 0.41                           | 0.37        | 0.57        | 0.58        | 0.31             | 0.44            |
| 470M                      | 47 +20%                  | 2.52                      | 8.8              | > 0.99                         | 0.51                           | 0.33        | 0.39        | 0.40        | 0.28             | 0.38            |
| 680M                      | 68 +20%                  | 3.23                      | 7.8              | > 0.98                         | 0.66                           | 0.27        | 0.36        | 0.37        | 0.25             | 0.36            |
| 820M                      | 82 +20%                  | 3.66                      | 7.3              | > 0.99                         | 0.75                           | 0.27        | 0.27        | 0.29        | 0.23             | 0.31            |
| 101M                      | 100 +20%                 | 4.78                      | 6.1              | > 0.99                         | 0.88                           | 0.22        | 0.28        | 0.28        | 0.20             | 0.27            |
| 121M                      | 120 +20%                 | 5.54                      | 5.3              | > 0.99                         | 0.98                           | 0.21        | 0.26        | 0.27        | 0.19             | 0.27            |
| 151M                      | 150 +20%                 | 8.90                      | 4.6              | > 0.98                         | 1.18                           | 0.18        | 0.26        | 0.27        | 0.17             | 0.23            |
| 181M                      | 180 +20%                 | 8.75                      | 4.1              | > 0.99                         | 1.40                           | 0.18        | 0.21        | 0.23        | 0.14             | 0.18            |
| 221M                      | 220 +20%                 | 11.24                     | 3.3              | > 0.99                         | 1.66                           | 0.16        | 0.16        | 0.17        | 0.12             | 0.17            |
| 331M                      | 330 +20%                 | 17.00                     | 2.8              | > 0.99                         | 2.45                           | 0.13        | 0.16        | 0.16        | 0.10             | 0.14            |

- Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.
- DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
- SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value.
- Leakage inductance is for L1 and is measured with L2 shorted.
- DC current at 25 °C that causes the specified inductance drop from its value without current. It is the sum of the current flowing in both windings.
- Equal current when applied to each winding simultaneously that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings.
- Maximum current when applied to one winding that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings.
- Electrical specifications at 25 °C.
- Ambient temperature -40 °C to +125 °C with (40 °C rise) I rms current.
- Maximum part temperature +165 °C (ambient + temp rise).
- Storage temperature Component: -40 °C to +165 °C.
- Tape and reel packaging: -40 °C to +80 °C.
- Winding to winding isolation 100 Vrms, one minute.
- Resistance to soldering heat Max 1hr at 40 second reflows at +260 °C, parts cooled to room temperature between cycles.
- Packaging 1000/7" reel, 3500/13" reel.

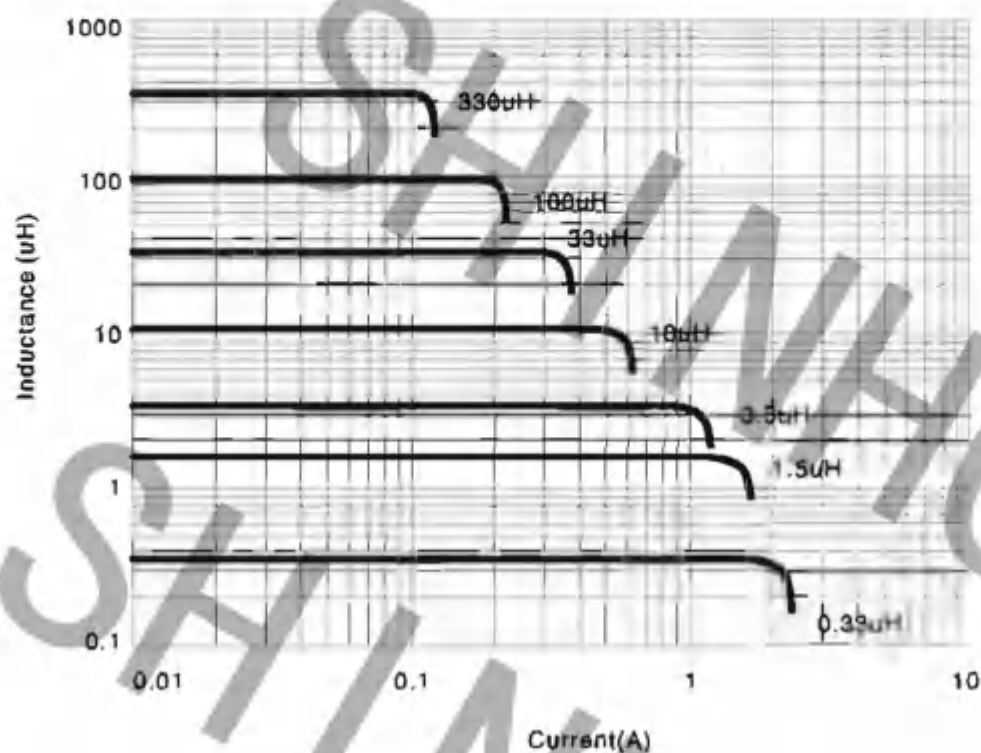
## PHYSICAL CHARACTERISTICS & WINDING:

Dimensions are in mm

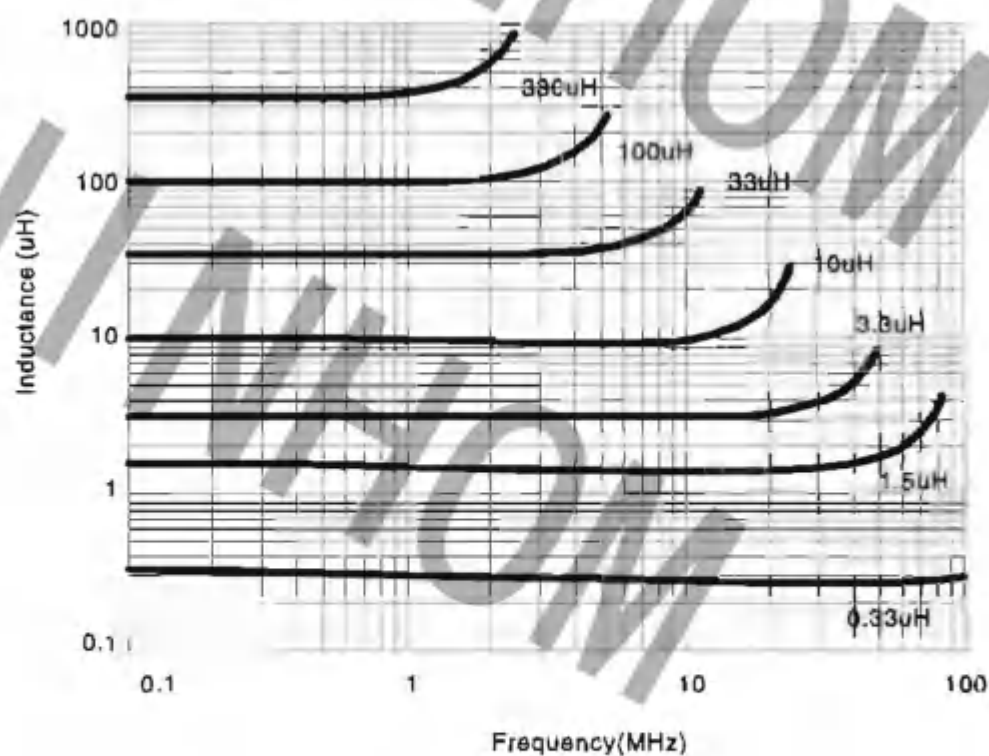


## PERFORMANCE CURVE:

TYPICAL L VS CURRENT



TYPICAL L VS FREQUENCY





## COMMON MODE CHOKES SDRH4829D SERIES

### FEATURES:

- Only 2.9 mm high and 4.8 mm square
- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Winding to winding isolation (hi-pol) up to 2500 VDC
- 1500 Vdc (1000 Vrms), one minute isolation (hi-pol) between windings
- Can be used as coupled inductors for SEPIC applications
- UL Certified per File E218588

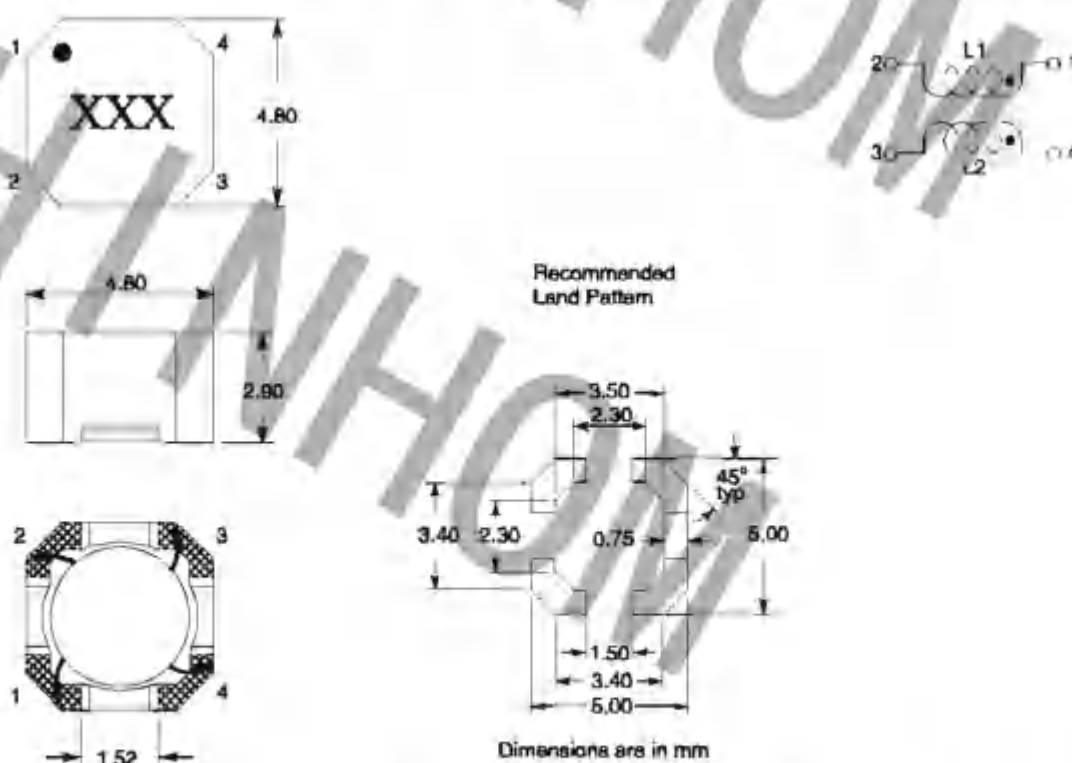


### ELECTRICAL CHARACTERISTICS:

| Partnumber     | Common mode impedance max (kΩ) | Cutoff frequency (MHz) | Inductance (μH) |     | DCR max (Ohms) | Isolation (Vrms) | Irms (A) |
|----------------|--------------------------------|------------------------|-----------------|-----|----------------|------------------|----------|
|                |                                |                        | min             | nom |                |                  |          |
| SDRH4829D-4R7Y | 7.85 @ 86 MHz                  | 410                    | 3.76            | 4.7 | 0.322          | 1000             | 1.90     |
| SDRH4829D-6R8Y | 9.20 @ 56 MHz                  | 470                    | 5.44            | 6.8 | 0.395          | 1000             | 1.55     |
| SDRH4829D-100Y | 11.69 @ 40 MHz                 | 340                    | 8.00            | 10  | 0.480          | 1000             | 1.30     |
| SDRH4829D-330Y | 25.81 @ 16 MHz                 | 240                    | 26.4            | 33  | 0.885          | 1000             | 0.57     |
| SDRH4829D-151Y | 102.7 @ 9.6 MHz                | 130                    | 120             | 150 | 3.82           | 1000             | 0.31     |
| SDRH4829D-221Y | 174.7 @ 7.5 MHz                | 83                     | 176             | 220 | 5.25           | 1000             | 0.24     |

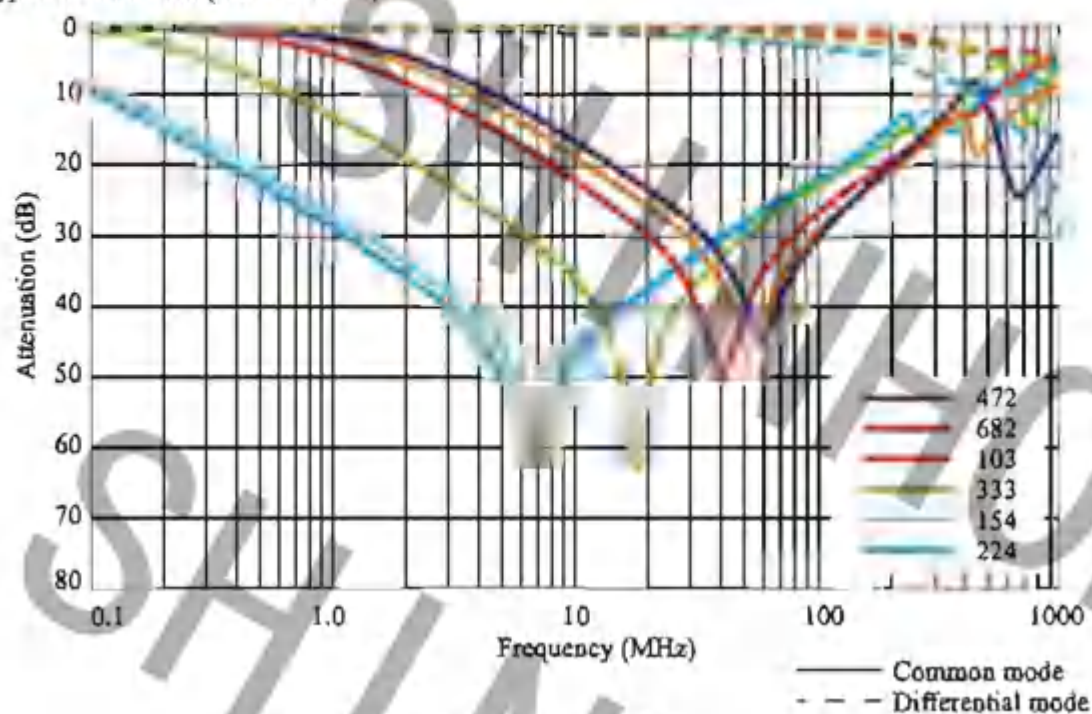
1. Frequency at which the differential mode attenuation equals -3dB
2. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent
3. DCR is for each winding.
4. 1000 Vrms, one minute isolation (hi-pol) between windings.
5. Current that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
6. Electrical specifications at 25 °C
7. Ambient temperature -40 °C to +85 °C with (40 °C rise) Irms current. Maximum pin temperature +125 °C (ambient + temp rise).
8. Storage temperature Component: -40 °C to +125 °C.
9. Tape and reel packaging: -40 °C to +80 °C

### PHYSICAL CHARACTERISTICS & WINDING:

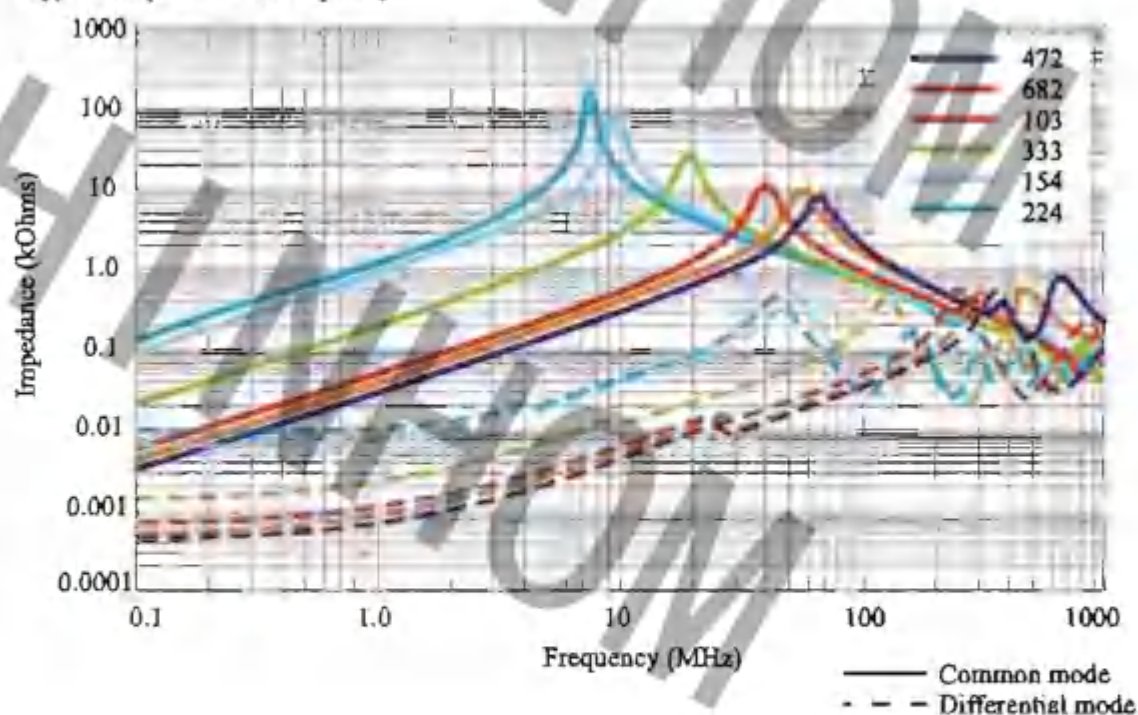


## PERFORMANCE CURVE:

Typical Attenuation (Ref: 50 Ohms)



Typical Impedance vs Frequency



# COUPLED INDUCTORS, COMMON MODE CHOKES

## SDRH5010D SERIES

### FEATURES:

- Only 1.0 mm high and 5 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke
- UL Certified per File E219588



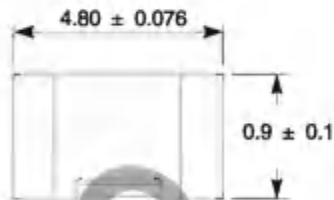
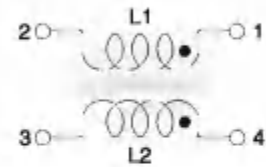
### ELECTRICAL CHARACTERISTICS:

| Part number<br>SDRH5010D- | Inductance<br>(uH) ±20% | DCR max<br>(Ohms) | SRF typ<br>(MHz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ<br>(uH) | Isat (A)    |             |             | Irms (A)         |                 |
|---------------------------|-------------------------|-------------------|------------------|--------------------------------|--------------------------|-------------|-------------|-------------|------------------|-----------------|
|                           |                         |                   |                  |                                |                          | 10%<br>drop | 20%<br>drop | 30%<br>drop | both<br>windings | one<br>windings |
| R88N                      | 0.88 ±30%               | 0.07              | 181              | 0.85                           | 0.07                     | 2.6         | 2.7         | 2.8         | 1.85             | 2.76            |
| 1R0M                      | 1.0                     | 0.10              | 150              | 0.95                           | 0.09                     | 2.1         | 2.1         | 2.2         | 1.50             | 2.12            |
| 1R5M                      | 1.5                     | 0.15              | 134              | 0.97                           | 0.09                     | 1.7         | 1.8         | 1.8         | 1.20             | 1.70            |
| 2R2M                      | 2.2                     | 0.20              | 108              | 0.97                           | 0.11                     | 1.5         | 1.6         | 1.6         | 1.10             | 1.56            |
| 3R3M                      | 3.3                     | 0.27              | 83               | 0.98                           | 0.13                     | 1.2         | 1.3         | 1.3         | 0.95             | 1.34            |
| 4R7M                      | 4.7                     | 0.40              | 68               | 0.98                           | 0.15                     | 0.98        | 1.0         | 1.1         | 0.75             | 1.06            |
| 5R6M                      | 5.6                     | 0.45              | 60               | 0.99                           | 0.16                     | 0.90        | 0.93        | 0.94        | 0.70             | 0.99            |
| 6R8M                      | 6.8                     | 0.53              | 55               | 0.99                           | 0.19                     | 0.83        | 0.86        | 0.87        | 0.60             | 0.85            |
| 8R2M                      | 8.2                     | 0.70              | 50               | 0.99                           | 0.22                     | 0.74        | 0.77        | 0.78        | 0.50             | 0.71            |
| 100M                      | 10                      | 0.78              | 46               | 0.99                           | 0.27                     | 0.67        | 0.69        | 0.70        | 0.50             | 0.71            |
| 150M                      | 15                      | 1.18              | 33               | 0.99                           | 0.34                     | 0.53        | 0.55        | 0.56        | 0.42             | 0.58            |
| 220M                      | 22                      | 1.58              | 26               | 0.99                           | 0.40                     | 0.45        | 0.47        | 0.48        | 0.35             | 0.49            |
| 330M                      | 33                      | 2.50              | 23               | 0.99                           | 0.46                     | 0.37        | 0.38        | 0.39        | 0.30             | 0.42            |
| 470M                      | 47                      | 3.48              | 17.0             | 0.99                           | 0.83                     | 0.31        | 0.32        | 0.33        | 0.25             | 0.35            |
| 680M                      | 68                      | 5.10              | 14.8             | 0.99                           | 0.90                     | 0.25        | 0.26        | 0.27        | 0.19             | 0.26            |
| 101M                      | 100                     | 8.0               | 11.2             | 0.99                           | 1.36                     | 0.21        | 0.22        | 0.22        | 0.15             | 0.21            |
| 151M                      | 150                     | 11.7              | 9.90             | 0.99                           | 2.10                     | 0.17        | 0.17        | 0.18        | 0.12             | 0.16            |
| 221M                      | 220                     | 15.2              | 8.05             | 0.99                           | 3.02                     | 0.14        | 0.15        | 0.15        | 0.11             | 0.15            |

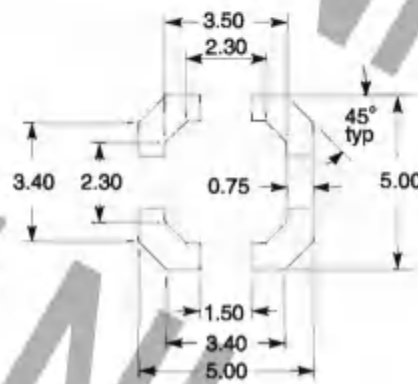
1. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4294A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value
2. DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value
3. SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value
4. Leakage inductance is for L1 and is measured with L2 shorted
5. DC current at 25 °C that causes the specified inductance drop from its value without current. It is the sum of the current flowing in both windings
6. Equal current when applied to each winding simultaneously that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
7. Maximum current when applied to one winding that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
8. Electrical specifications at 25 °C
9. Ambient temperature -40 °C to +85 °C with (40 °C rise) Irms current
10. Maximum part temperature +125 °C (ambient + temp rise)
11. Storage temperature Component: -40 °C to +125 °C
12. Tape and reel packaging: -40 °C to +80 °C
13. Winding to winding isolation 100 Vrms, one minute
14. Resistance to soldering heat Max three 40 second reflows at +260 °C, parts cooled to room temperature between cycles
15. Packaging 1000/7" reel; 3500/13" reel

## PHYSICAL CHARACTERISTICS & WINDING:

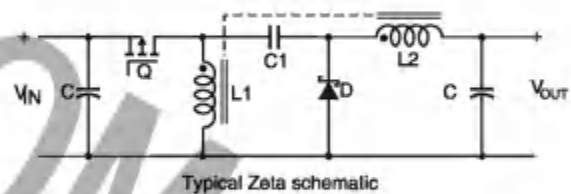
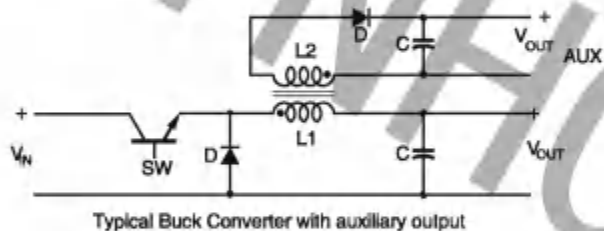
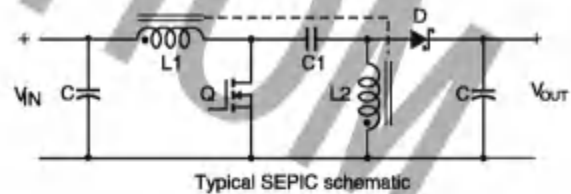
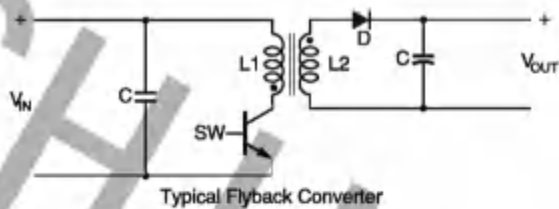
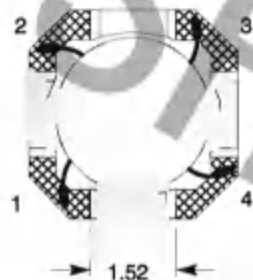
Dimensions are in mm



Recommended Land Pattern



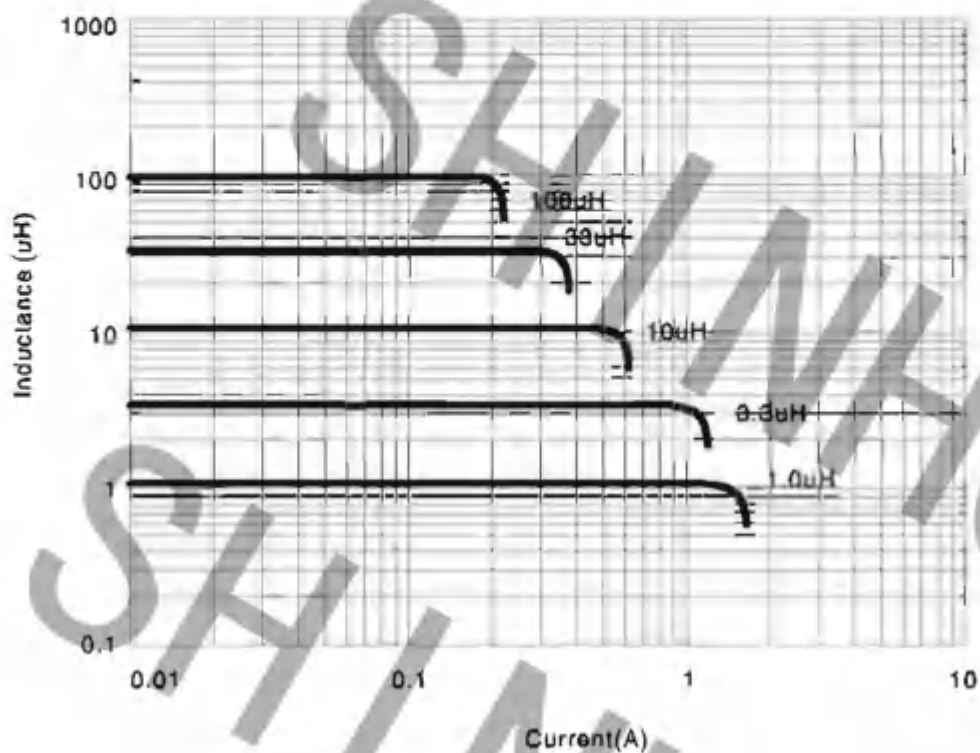
Dimensions are in mm



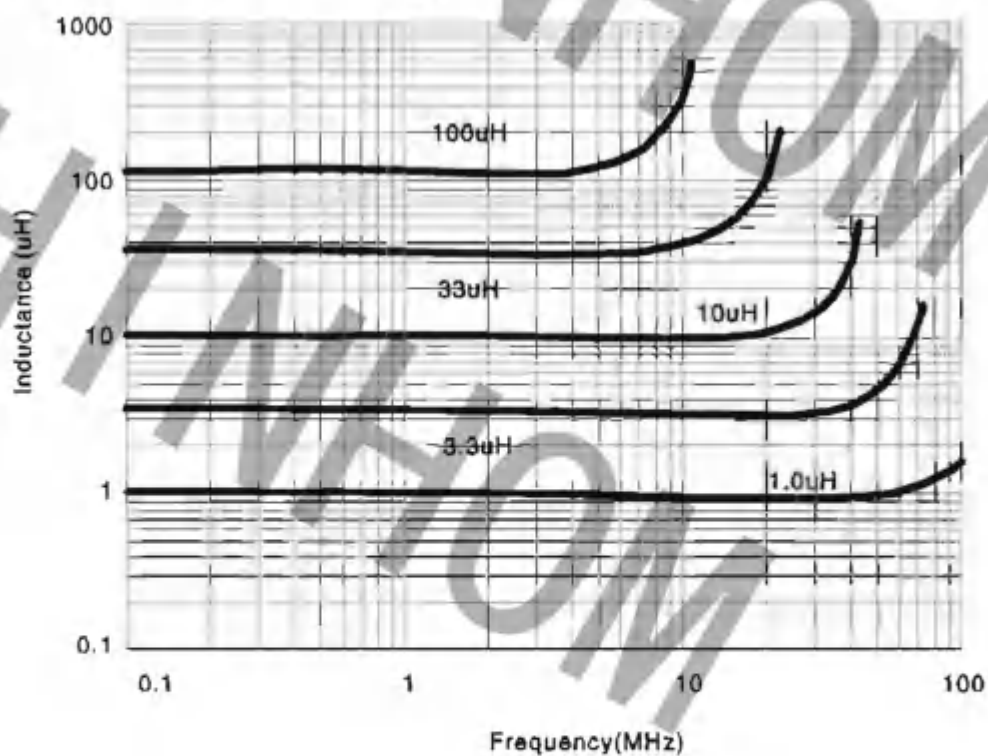


## PERFORMANCE CURVE:

TYPICAL L VS CURRENT



TYPICAL L VS FREQUENCY



# COUPLED INDUCTORS, COMMON MODE CHOKES

## SDRH5030D SERIES

Pb



### FEATURES:

- Only 3.0 mm high and 5 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke
- UL Certified per File E219588

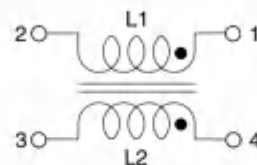
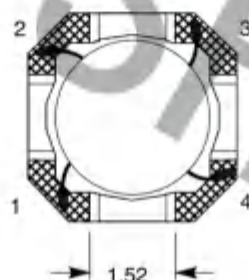
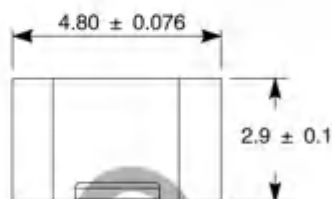
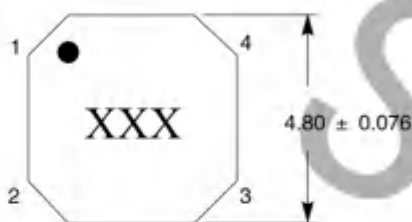
### ELECTRICAL CHARACTERISTICS:

| Part number<br>SDRH5030D- | Inductance<br>(μH) | DCR max<br>(Ohms) | SRF typ<br>(MHz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ<br>(μH) | Isat (A)    |             |             | Irms (A)         |                 |
|---------------------------|--------------------|-------------------|------------------|--------------------------------|--------------------------|-------------|-------------|-------------|------------------|-----------------|
|                           |                    |                   |                  |                                |                          | 10%<br>drop | 20%<br>drop | 30%<br>drop | both<br>windings | one<br>windings |
| R57N                      | 0.57 ±30%          | 0.031             | 233              | 0.93                           | 0.07                     | 5.60        | 5.80        | 6.03        | 2.30             | 3.25            |
| R76N                      | 0.76 ±30%          | 0.038             | 172              | 0.94                           | 0.08                     | 4.60        | 4.80        | 5.00        | 2.25             | 3.16            |
| 1R0N                      | 1.0 ±30%           | 0.042             | 153              | 0.95                           | 0.09                     | 4.30        | 4.49        | 4.67        | 2.20             | 3.11            |
| 1R5M                      | 1.5 ±20%           | 0.048             | 118              | 0.97                           | 0.09                     | 3.90        | 4.26        | 4.30        | 2.05             | 2.90            |
| 2R2M                      | 2.2 ±20%           | 0.067             | 87.0             | 0.98                           | 0.10                     | 2.80        | 2.98        | 3.07        | 1.95             | 2.75            |
| 3R3M                      | 3.3 ±20%           | 0.077             | 61.0             | 0.98                           | 0.10                     | 2.50        | 2.70        | 2.80        | 1.70             | 2.40            |
| 4R7M                      | 4.7 ±20%           | 0.111             | 49.0             | 0.99                           | 0.11                     | 2.10        | 2.20        | 2.20        | 1.40             | 1.98            |
| 5R6M                      | 5.6 ±20%           | 0.125             | 44.0             | 0.99                           | 0.11                     | 1.80        | 1.80        | 1.90        | 1.35             | 1.91            |
| 6R6M                      | 6.6 ±20%           | 0.159             | 40.0             | 0.99                           | 0.12                     | 1.40        | 1.48        | 1.48        | 1.20             | 1.70            |
| 100M                      | 10 ±20%            | 0.210             | 28.0             | 0.99                           | 0.13                     | 1.20        | 1.20        | 1.20        | 1.05             | 1.48            |
| 150M                      | 15 ±20%            | 0.298             | 23.0             | 0.99                           | 0.15                     | 1.00        | 1.17        | 1.17        | 0.85             | 1.20            |
| 220M                      | 22 ±20%            | 0.452             | 17.0             | >0.99                          | 0.17                     | 0.89        | 0.98        | 0.98        | 0.70             | 0.99            |
| 330M                      | 33 ±20%            | 0.565             | 15.0             | >0.99                          | 0.20                     | 0.73        | 0.77        | 0.78        | 0.60             | 0.85            |
| 470M                      | 47 ±20%            | 0.806             | 12.0             | >0.99                          | 0.24                     | 0.59        | 0.63        | 0.65        | 0.50             | 0.71            |
| 680M                      | 68 ±20%            | 1.13              | 9.00             | >0.99                          | 0.29                     | 0.50        | 0.54        | 0.55        | 0.43             | 0.61            |
| 101M                      | 100 ±20%           | 1.79              | 8.44             | >0.99                          | 0.37                     | 0.47        | 0.54        | 0.56        | 0.33             | 0.47            |
| 151M                      | 150 ±20%           | 2.43              | 6.72             | >0.99                          | 0.46                     | 0.38        | 0.43        | 0.45        | 0.28             | 0.40            |
| 221M                      | 220 ±20%           | 3.30              | 5.53             | >0.99                          | 0.54                     | 0.31        | 0.35        | 0.36        | 0.24             | 0.34            |
| 331M                      | 330 ±20%           | 5.36              | 4.17             | >0.99                          | 0.65                     | 0.25        | 0.25        | 0.32        | 0.18             | 0.25            |
| 471M                      | 470 ±20%           | 7.51              | 3.52             | >0.99                          | 0.78                     | 0.21        | 0.21        | 0.28        | 0.15             | 0.21            |
| 681M                      | 680 ±20%           | 10.8              | 2.83             | >0.99                          | 0.89                     | 0.17        | 0.20        | 0.21        | 0.13             | 0.18            |
| 102M                      | 1000 ±20%          | 16.5              | 2.30             | >0.99                          | 1.20                     | 0.15        | 0.17        | 0.17        | 0.10             | 0.14            |

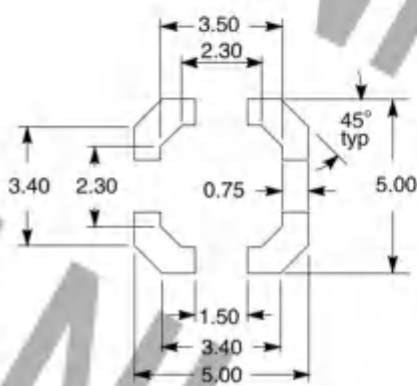
1. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value
2. DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value
3. SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value
4. Leakage inductance is for L1 and is measured with L2 shorted
5. DC current at 25 °C that causes the specified inductance drop from its value without current. It is the sum of the current flowing in both windings
6. Equal current when applied to each winding simultaneously that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
7. Maximum current when applied to one winding that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
8. Electrical specifications at 25 °C
9. Ambient temperature -40 °C to +85 °C with (40 °C rise) Irms current
10. Maximum part temperature +125 °C (ambient + temp rise)
11. Storage temperature Component: -40 °C to +125 °C
12. Tape and reel packaging: -40 °C to +80 °C
13. Winding to winding isolation 100 Vrms, one minute
14. Resistance to soldering heat Max three 40 second reflows at +260 °C, parts cooled to room temperature between cycles
15. Packaging 1000/7" reel; 3500/13" reel

## PHYSICAL CHARACTERISTICS & WINDING:

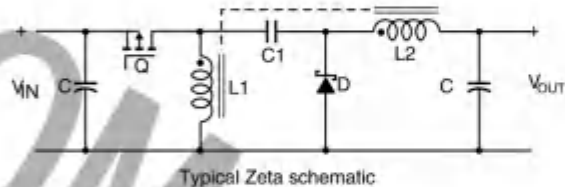
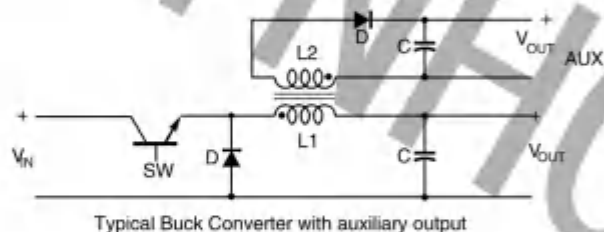
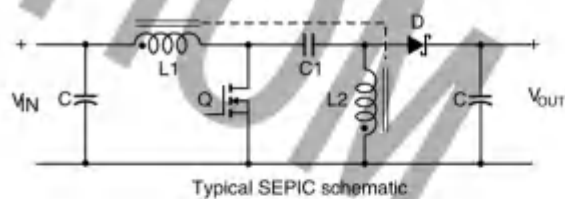
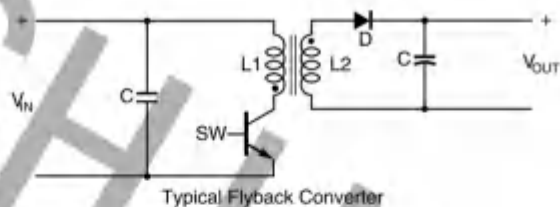
Dimensions are in mm



Recommended Land Pattern

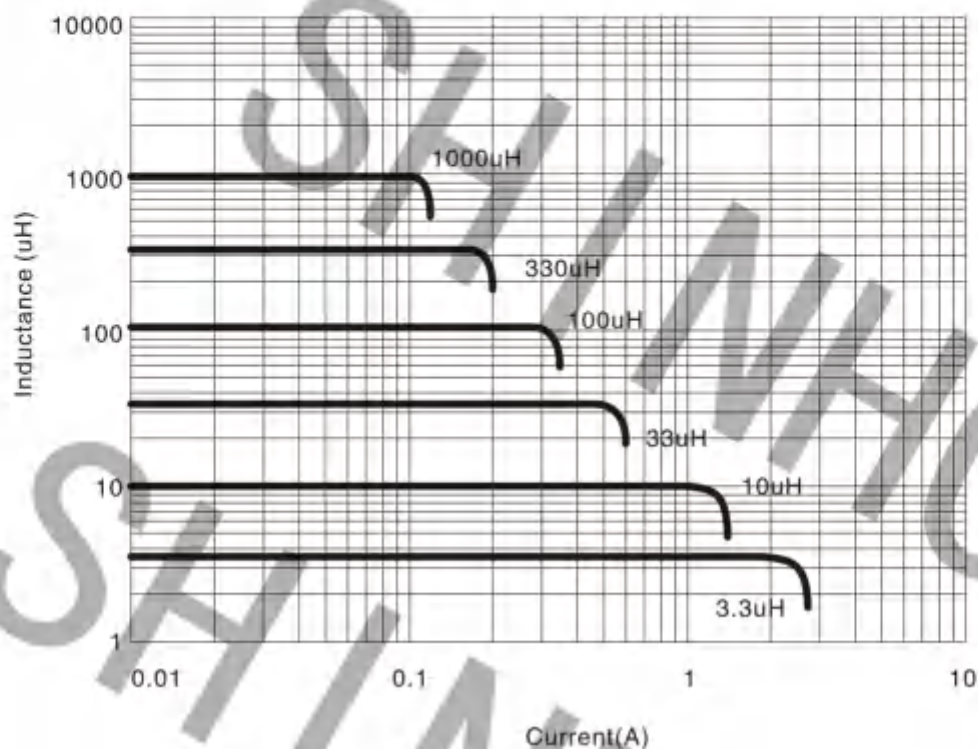


Dimensions are in mm

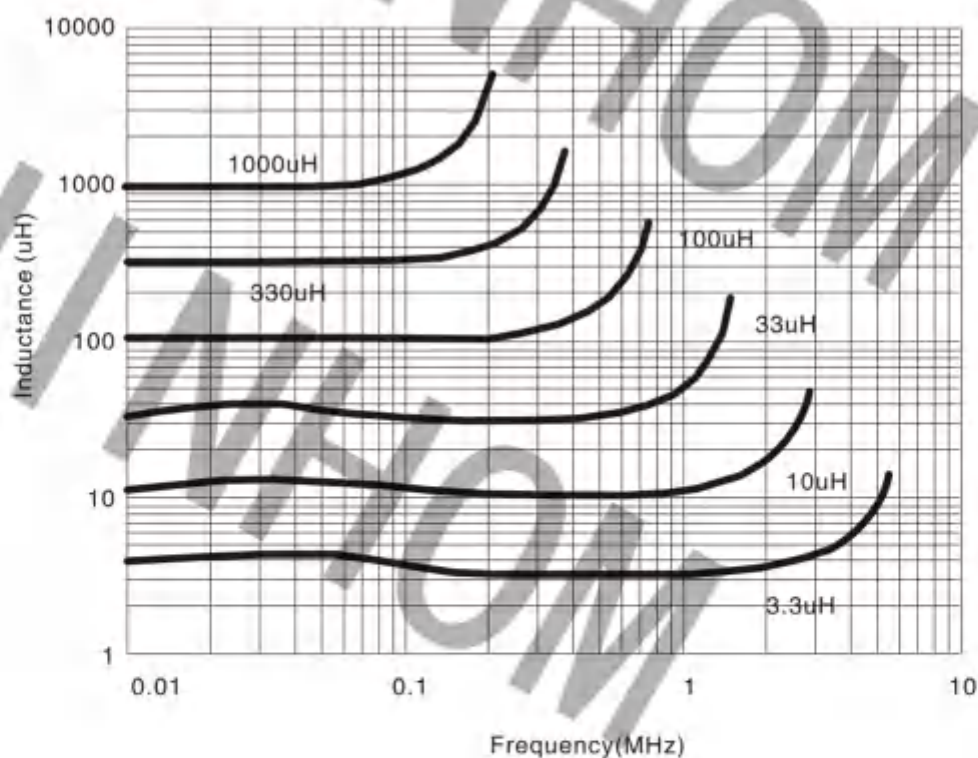


## PERFORMANCE CURVE:

TYPICAL L VS CURRENT



TYPICAL L VS FREQUENCY





## SMD COUPLED INDUCTORS SDRH5228D SERIES

### FEATURES:

- 5.2X5.2 mm footprint, 2.85mm high coupled inductors.
- Low DCR and excellent current handling.
- They can be used as two single inductors connected in parallel, as a 1 : 1 transformer or as an autotransformer when connected in series.
- Winding to winding isolation (hipot) up to 2500 VDC.

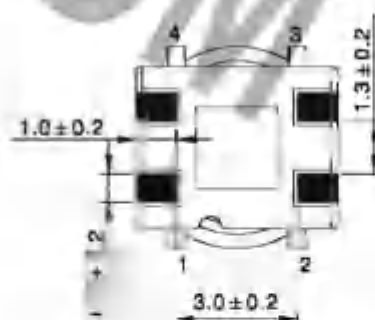
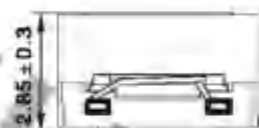
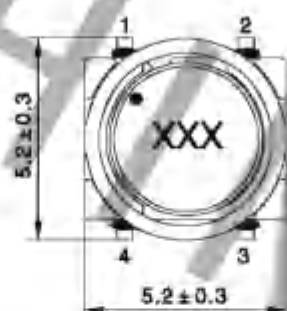


### ELECTRICAL CHARACTERISTICS:

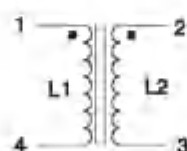
| Part Number    | L (uH) $\pm 20\%$ | DCR (m $\Omega$ ) Max | SRF (MHz) Typ | Coupling Coefficient Typ | I <sub>sat</sub> (A) Typ |          |          | I <sub>rms</sub> (A) Typ |             |
|----------------|-------------------|-----------------------|---------------|--------------------------|--------------------------|----------|----------|--------------------------|-------------|
|                |                   |                       |               |                          | 10% Drop                 | 20% Drop | 30% Drop | Both winding             | One winding |
| SDRH5228D-100M | 10                | 0.3                   | 26.0          | 0.99                     | 1.2                      | 1.3      | 1.4      | 0.682                    | 0.964       |
| SDRH5228D-220M | 22                | 0.85                  | 18.0          | 0.98                     | 0.78                     | 0.87     | 0.95     | 0.438                    | 0.619       |
| SDRH5228D-330M | 33                | 0.95                  | 15.0          | 0.99                     | 0.64                     | 0.71     | 0.76     | 0.341                    | 0.482       |
| SDRH5228D-560M | 56                | 1.8                   | 11.0          | 0.99                     | 0.45                     | 0.5      | 0.54     | 0.255                    | 0.361       |
| SDRH5228D-101M | 100               | 2.65                  | 10.0          | 0.99                     | 0.37                     | 0.41     | 0.45     | 0.205                    | 0.29        |
| SDRH5228D-151M | 150               | 4.3                   | 6.7           | 1.00                     | 0.3                      | 0.33     | 0.36     | 0.155                    | 0.219       |
| SDRH5228D-221M | 220               | 6.1                   | 5.8           | 1.00                     | 0.25                     | 0.28     | 0.3      | 0.14                     | 0.198       |

1. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value.
2. DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value.
3. SRF measured using an Agilent/HP4294A network analyzer or equivalent. When leads are connected in parallel, SRF is the same value.
4. I<sub>sat</sub>: DC current, at which the inductance drops the specified amount from its value without current. It is the sum of the current flowing in both windings.
5. I<sub>rms</sub>, both windings: Equal current when applied to each winding simultaneously that causes a 40 °C temperature rise from 25 °C ambient.
6. I<sub>rms</sub>, one winding: Maximum current when applied to one winding that causes a 40 °C temperature rise from 25 °C ambient.
7. Ambient temperature -40 °C to +65 °C with (40 °C rise) I<sub>rms</sub> current. Maximum part temperature +125 °C (ambient + temp rise).
8. Storage temperature Component: -40 °C to +125 °C.
9. Tape and reel packaging: -40 °C to +60 °C
10. Winding to winding isolation (hipot) 2500 VDC
11. Resistance to soldering heat Three reflows at >217 °C for 30 seconds (+260 °C  $\pm 5$  °C for 20-40 seconds)

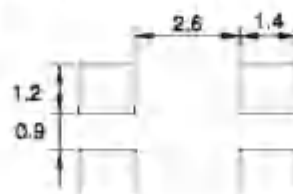
### PHYSICAL CHARACTERISTICS & WINDING:



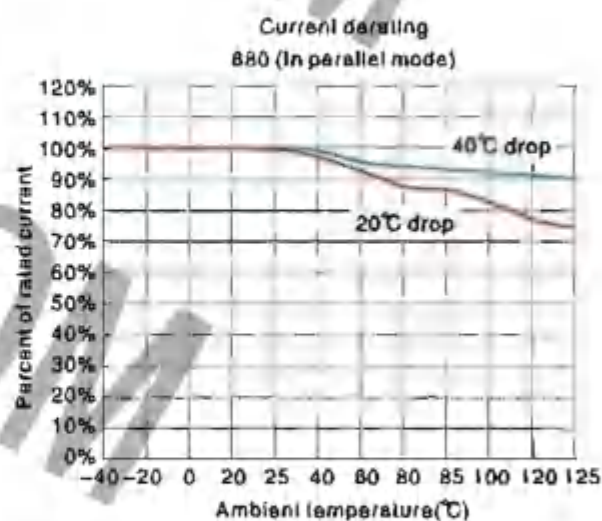
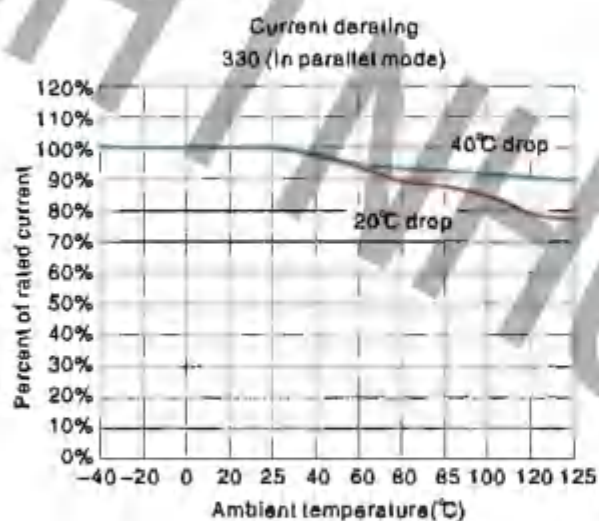
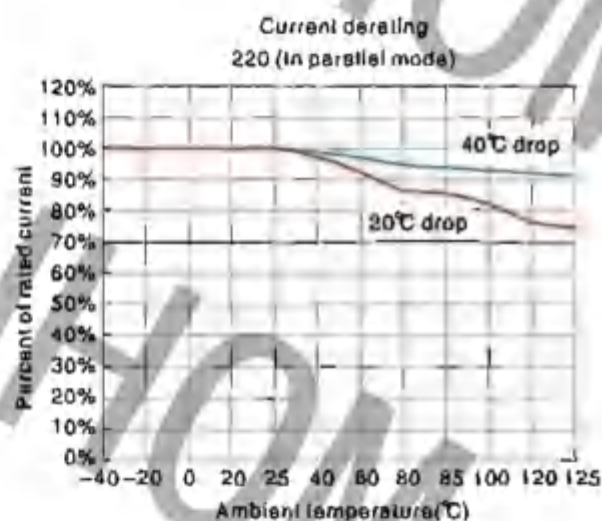
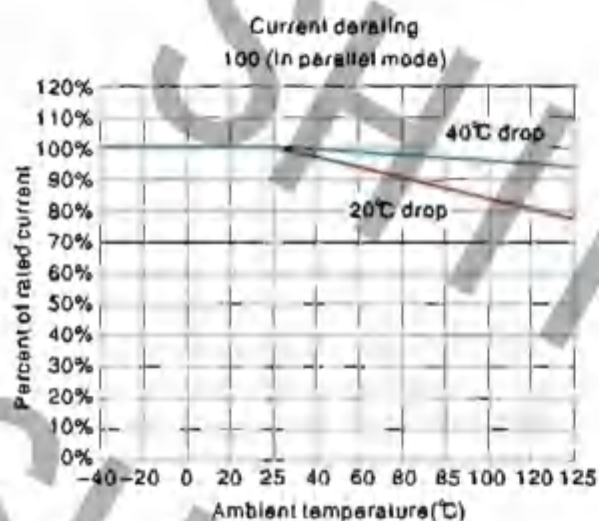
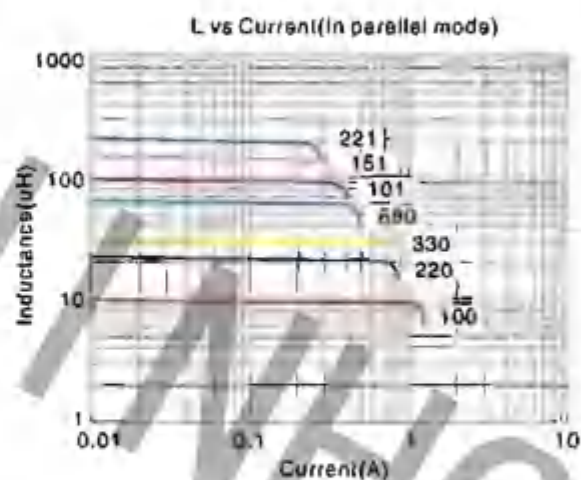
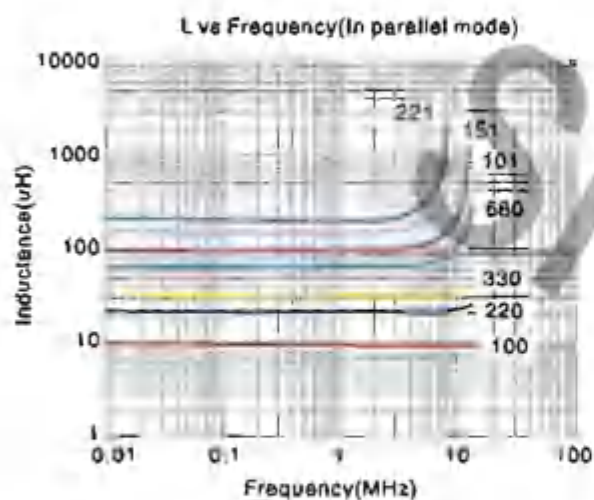
WINDING

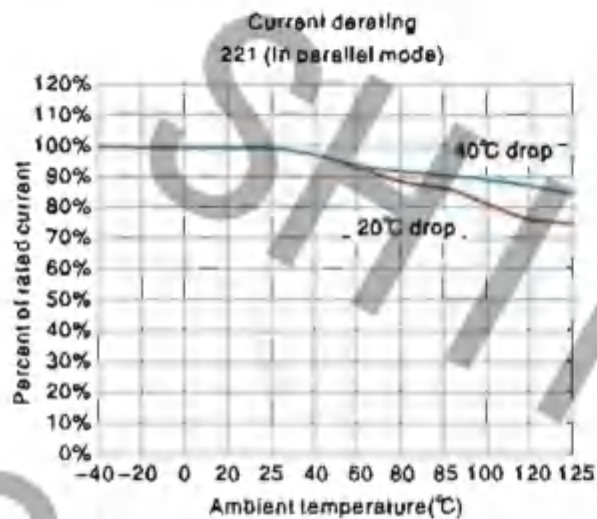
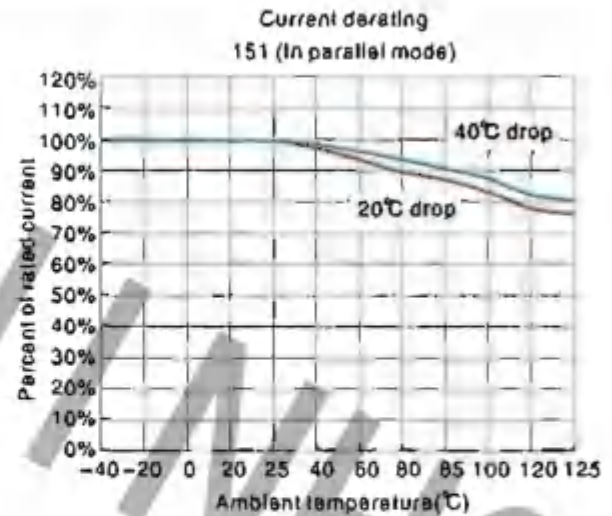
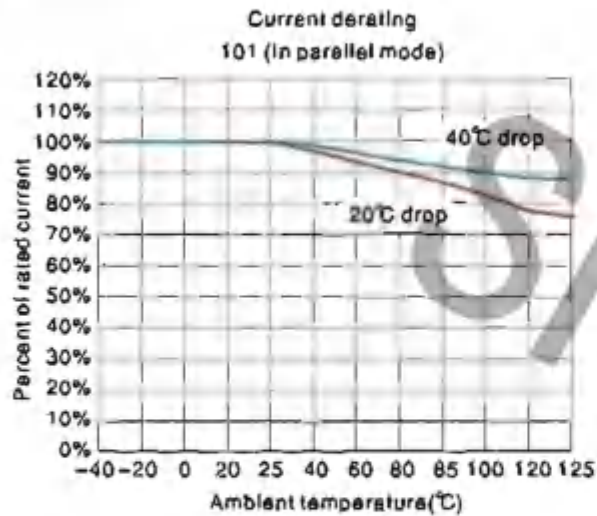


LAND PATTERN

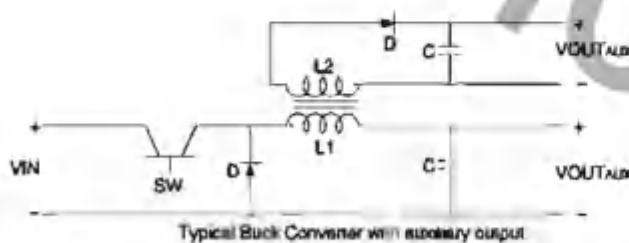
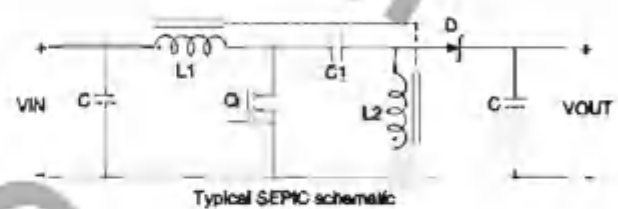
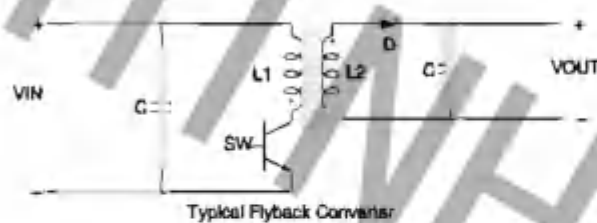


## PERFORMANCE CURVE:





### TYPICAL APPLY:





# COUPLED INDUCTORS, COMMON MODE CHOKES

## SDRH5230D SERIES



### FEATURES:

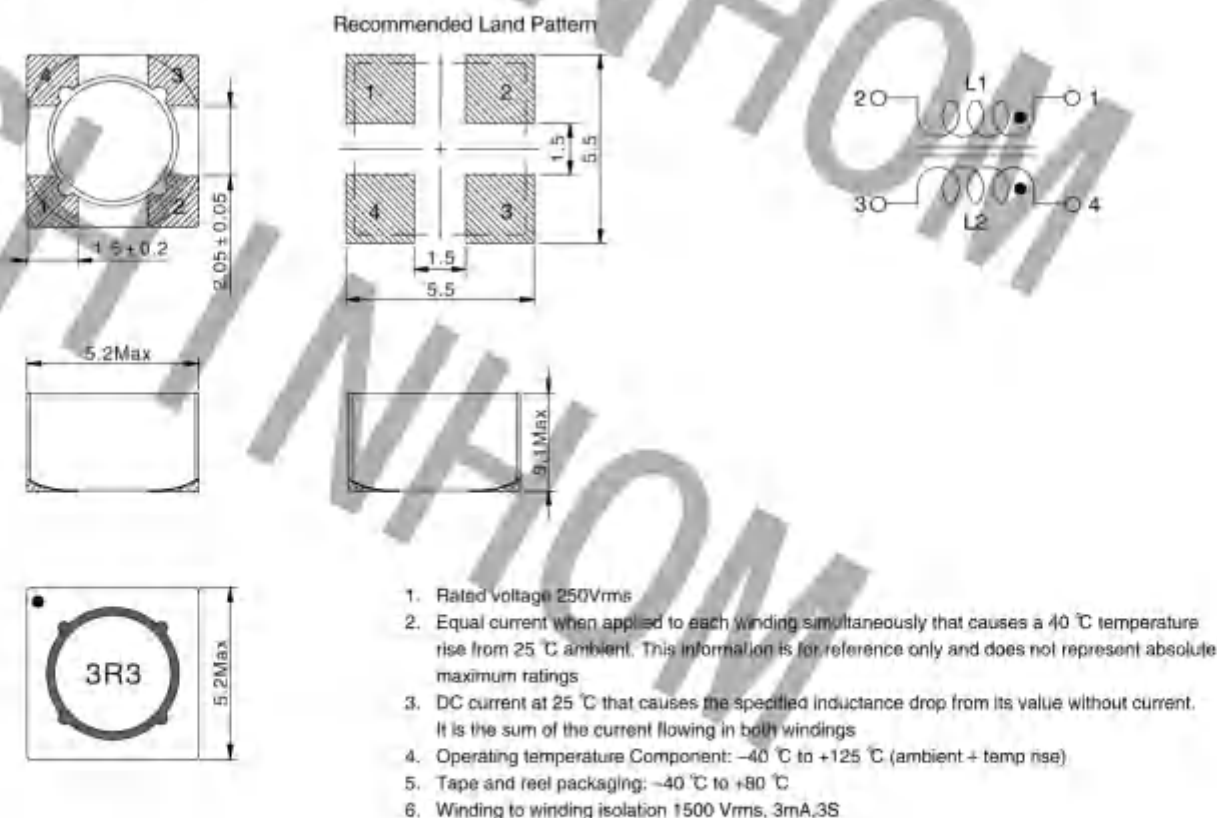
- Only 3.0 mm high and 5 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke
- UL Certified per File E219588

### ELECTRICAL CHARACTERISTICS@25°C:

| Part number<br>SDRH5230D- | Inductance<br>(uH)<br>100KHz, 0.1V | DCR max<br>(mΩ)<br>each winding | SRF typ<br>(MHz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ<br>(uH) | I <sub>rms</sub><br>(A) | I <sub>sat</sub><br>(A) |
|---------------------------|------------------------------------|---------------------------------|------------------|--------------------------------|--------------------------|-------------------------|-------------------------|
| 1R0N                      | 1.0 ±30%                           | 45                              | 190              | 0.96                           | 0.07                     | 2.9                     | 5.0                     |
| 1R5N                      | 1.5 ±30%                           | 68                              | 110              | 0.97                           | 0.08                     | 2.7                     | 3.7                     |
| 2R2N                      | 2.2 ±30%                           | 72                              | 95               | 0.97                           | 0.125                    | 2.5                     | 3.2                     |
| 3R3N                      | 3.3 ±30%                           | 120                             | 50               | 0.98                           | 0.13                     | 1.9                     | 2.5                     |
| 4R7N                      | 4.7 ±30%                           | 145                             | 45               | 0.98                           | 0.16                     | 1.6                     | 1.9                     |
| 6R8N                      | 5.6 ±30%                           | 240                             | 42               | 0.98                           | 0.17                     | 1.4                     | 1.7                     |
| 8R2N                      | 6.8 ±30%                           | 265                             | 40               | 0.98                           | 0.185                    | 1.3                     | 1.6                     |
| 10M                       | 10 ±20%                            | 300                             | 35               | 0.99                           | 0.19                     | 1.2                     | 1.5                     |
| 15M                       | 15 ±20%                            | 465                             | 24               | 0.99                           | 0.28                     | 0.9                     | 1.4                     |
| 22M                       | 22 ±20%                            | 650                             | 21               | 0.99                           | 0.41                     | 0.8                     | 1.0                     |
| 33M                       | 33 ±20%                            | 1025                            | 19               | 0.99                           | 0.63                     | 0.7                     | 0.9                     |
| 47M                       | 47 ±20%                            | 1200                            | 16               | 0.99                           | 0.85                     | 0.6                     | 0.7                     |

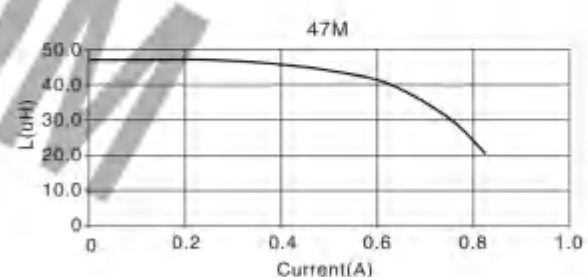
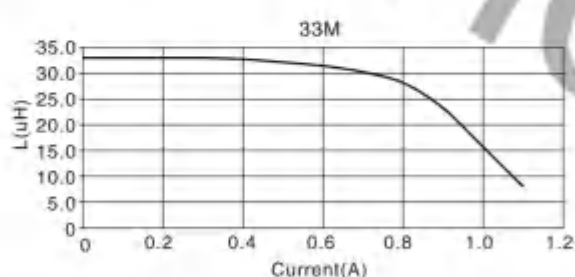
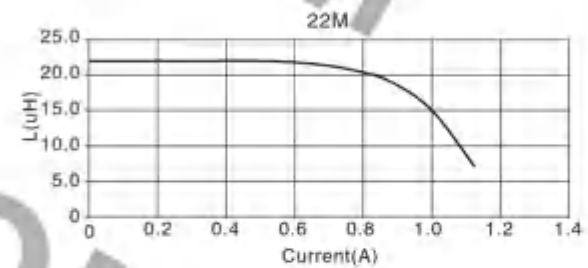
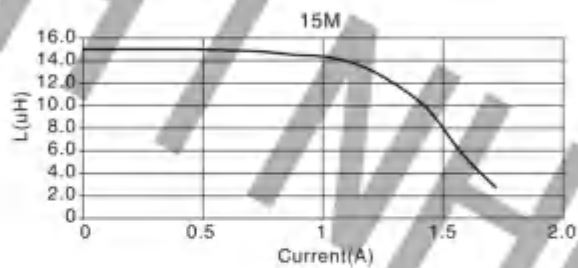
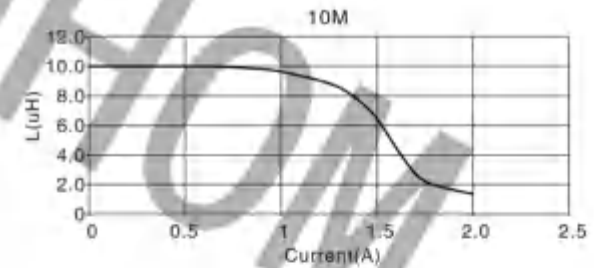
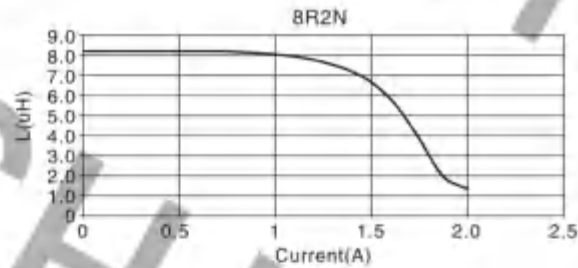
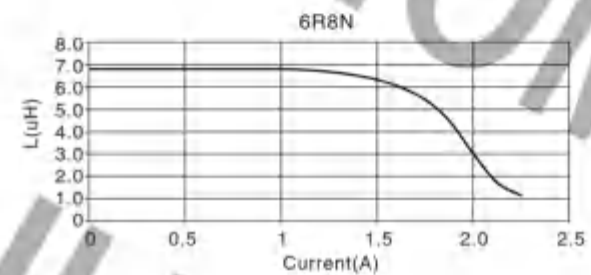
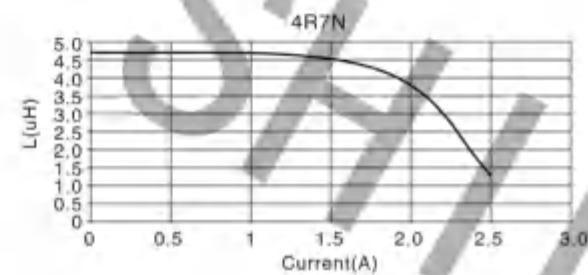
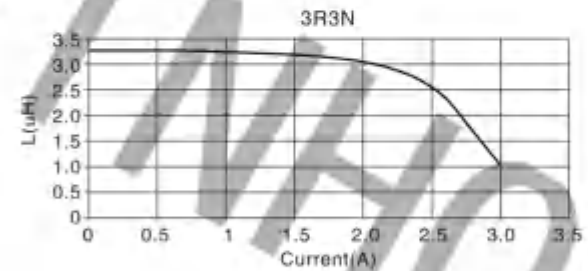
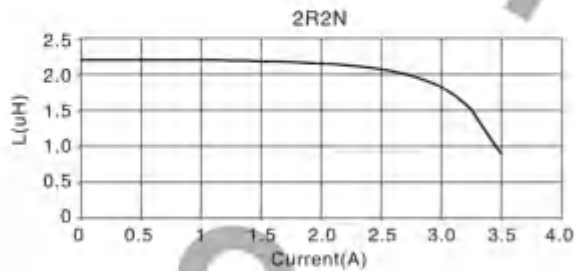
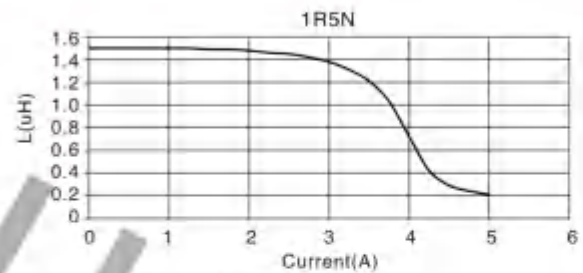
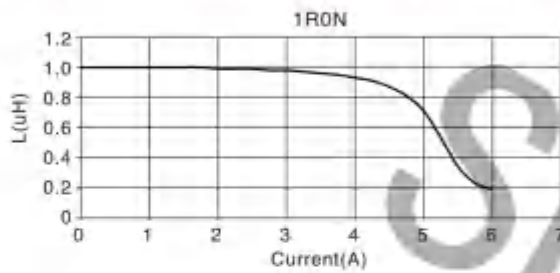
### PHYSICAL CHARACTERISTICS & WINDING:

Dimensions are in mm





# ELECTRICAL CHARACTERISTICS@25°C:



## COUPLED INDUCTORS, COMMON MODE CHOKES SDRH6235D SERIES

### FEATURES:

- Only 3.5 mm high and 8.0 mm square
- Ideal for use in flyback, multi-output buck, SEPIC and Zeta applications
- High inductance, high efficiency and excellent current handling
- Can also be used as two single inductors connected in series or parallel or as a common mode choke
- AEC-Q200 Grade 1 (40°C to +125°C)



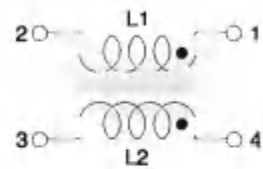
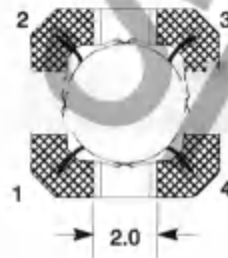
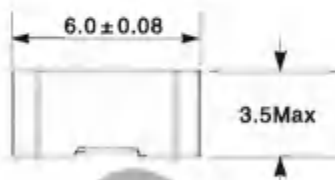
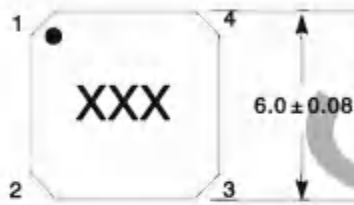
### ELECTRICAL CHARACTERISTICS:

| Part number<br>SDRH6235D- | Inductance<br>± 20% (uH) | DCR max<br>(Ohms) | SRF typ<br>(Mhz) | Coupling<br>coefficient<br>typ | Leakage<br>L typ<br>(uH) | Iss† (A)    |             |             | Irms (A)         |                 |
|---------------------------|--------------------------|-------------------|------------------|--------------------------------|--------------------------|-------------|-------------|-------------|------------------|-----------------|
|                           |                          |                   |                  |                                |                          | 10%<br>drop | 20%<br>drop | 30%<br>drop | both<br>windings | one<br>windings |
| 6R8M                      | 6.8                      | 0.120             | 31               | 0.99                           | 0.10                     | 2.80        | 3.00        | 3.12        | 1.40             | 1.98            |
| 100M                      | 10                       | 0.157             | 28               | 0.99                           | 0.12                     | 2.50        | 2.70        | 2.80        | 1.30             | 1.83            |
| 220M                      | 22                       | 0.300             | 15               | > 0.99                         | 0.15                     | 1.50        | 1.87        | 1.73        | 0.85             | 1.20            |
| 470M                      | 47                       | 0.820             | 9.7              | > 0.99                         | 0.21                     | 0.90        | 0.98        | 0.99        | 0.80             | 0.85            |
| 101M                      | 100                      | 1.20              | 7.0              | > 0.98                         | 0.45                     | 0.62        | 0.72        | 0.74        | 0.40             | 0.56            |
| 471M                      | 470                      | 3.50              | 3.0              | > 0.88                         | 0.61                     | 0.18        | 0.22        | 0.23        | 0.25             | 0.35            |
| 102M                      | 1000                     | 7.00              | 1.9              | > 0.99                         | 1.05                     | 0.12        | 0.14        | 0.15        | 0.15             | 0.21            |
| 152M                      | 1500                     | 10.8              | 1.5              | > 0.98                         | 1.70                     | 0.12        | 0.12        | 0.13        | 0.14             | 0.20            |
| 202M                      | 2000                     | 16.0              | 1.3              | > 0.99                         | 2.10                     | 0.08        | 0.11        | 0.12        | 0.11             | 0.16            |

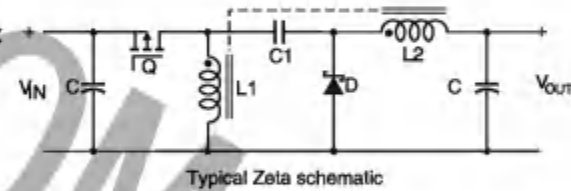
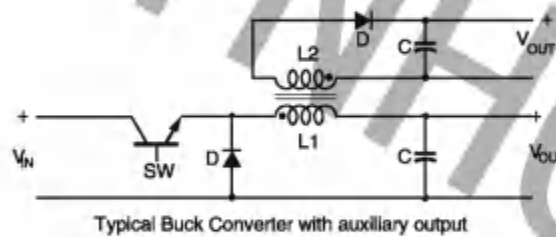
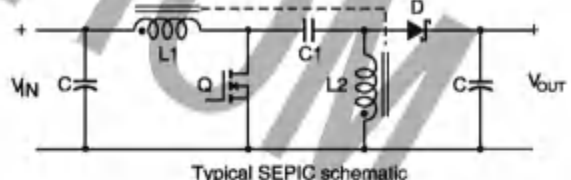
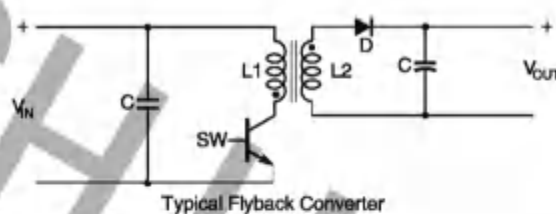
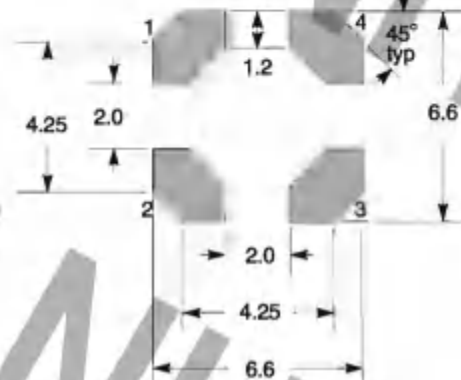
1. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 A dc on an Agilent/HP 4284A LCR meter or equivalent. When leads are connected in parallel, inductance is the same value. When leads are connected in series, inductance is four times the value
2. DCR is for each winding. When leads are connected in parallel, DCR is half the value. When leads are connected in series, DCR is twice the value
3. SRF measured using an Agilent/HP 4191A or equivalent. When leads are connected in parallel, SRF is the same value
4. Leakage inductance is for L1 and is measured with L2 shorted
5. DC current at 25 °C that causes the specified inductance drop from its value without current. It is the sum of the current flowing in both windings
6. Equal current when applied to each winding simultaneously that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
7. Maximum current when applied to one winding that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
8. Electrical specifications at 25 °C
9. Ambient temperature -40 °C to +125 °C with (40 °C rise) Irms current
10. Maximum part temperature +165 °C (ambient + temp rise)
11. Storage temperature Component: -40 °C to +185 °C
12. Tape and reel packaging: -40 °C to +80 °C
13. Winding to winding isolation 100 Vrms, one minute
14. Resistance to soldering heat: Max three 40 second reflows at +260 °C, parts cooled to room temperature between cycles
15. Packaging 1000/7" reel 3500/13" reel

## PHYSICAL CHARACTERISTICS & WINDING:

Dimensions are in mm

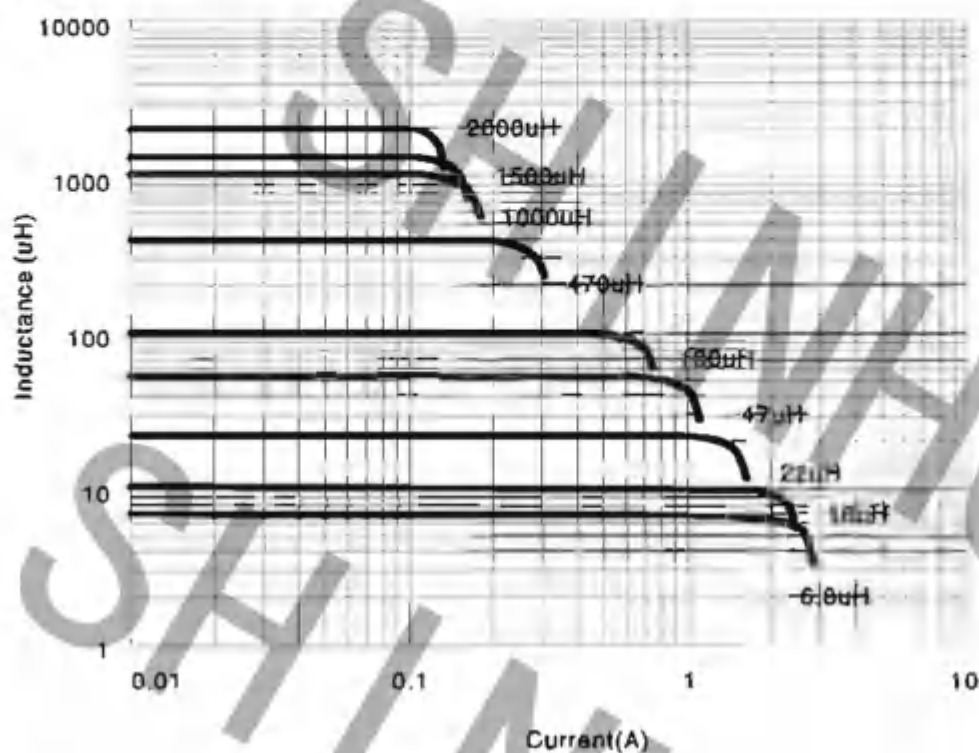


Recommended Land Pattern

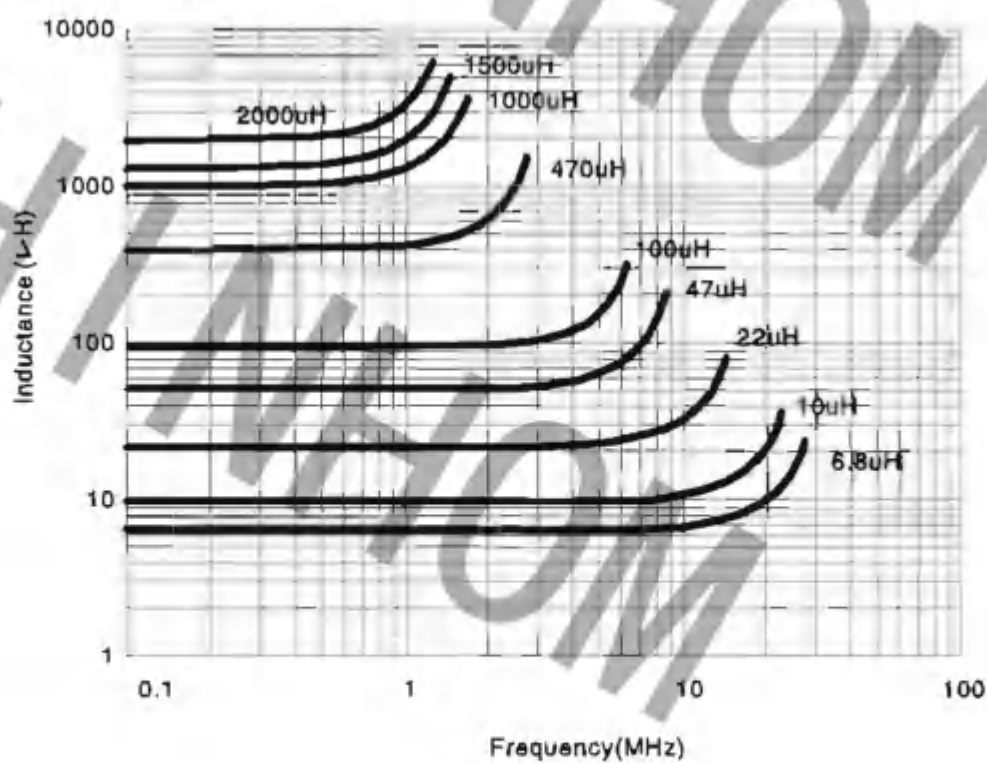


## PERFORMANCE CURVE:

TYPICAL L VS CURRENT



TYPICAL L VS FREQUENCY





# COUPLED INDUCTORS, COMMON MODE CHOKES

## SDRH7342D SERIES



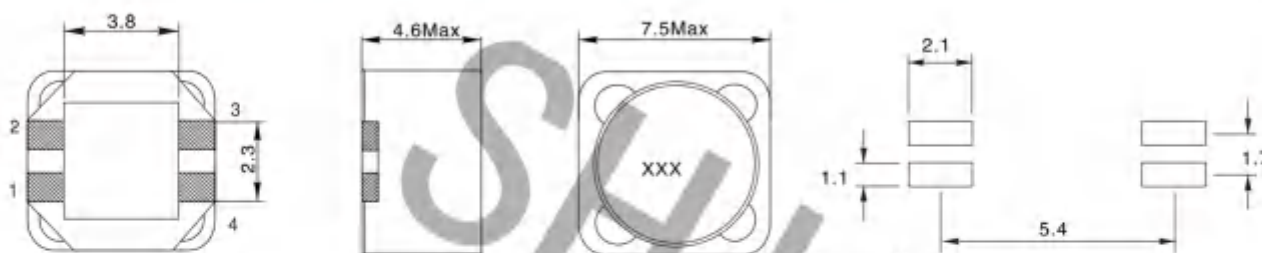
### FEATURES:

- Only 4.6 mm high and 7.5 mm square
- Ideal for use in both power line and signal line applications
- Common- and differential-mode filtering in a single device
- Up to 230 MHz differential mode cutoff frequency
- Can be used as coupled inductors for SEPIC applications
- RoHS compliant

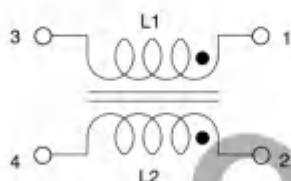
### ELECTRICAL CHARACTERISTICS:

| Part number    | Common mode impedance Max (KΩ) | Cutoff frequency (MHz) | Inductance (μH) |      | DDR max (Ω) | Isolation (Vrms) | I rms (A) |
|----------------|--------------------------------|------------------------|-----------------|------|-------------|------------------|-----------|
|                |                                |                        | Min             | Norm |             |                  |           |
| SDRH7342D-2R5M | 3.07 @ 53 MHz                  | 88                     | 2.00            | 2.5  | 0.083       | 200              | 2.17      |
| SDRH7342D-3R3M | 3.66 @ 50 MHz                  | 70                     | 2.64            | 3.3  | 0.037       | 200              | 2.05      |
| SDRH7342D-4R7M | 4.63 @ 37 MHz                  | 55                     | 3.76            | 4.7  | 0.051       | 200              | 1.74      |
| SDRH7342D-5R8M | 5.86 @ 34 MHz                  | 67                     | 4.46            | 5.6  | 0.063       | 200              | 1.57      |
| SDRH7342D-6R8M | 7.85 @ 31 MHz                  | 79                     | 5.44            | 6.8  | 0.070       | 200              | 1.49      |
| SDRH7342D-8R2M | 9.09 @ 32 MHz                  | 55                     | 6.56            | 8.2  | 0.075       | 200              | 1.44      |
| SDRH7342D-100M | 9.15 @ 24 MHz                  | 63                     | 8.00            | 10   | 0.10        | 200              | 1.24      |
| SDRH7342D-120M | 11.66 @ 22 MHz                 | 47                     | 9.60            | 12   | 0.12        | 200              | 1.14      |
| SDRH7342D-150M | 14.43 @ 20 MHz                 | 53                     | 12.0            | 15   | 0.13        | 200              | 1.09      |
| SDRH7342D-180M | 18.24 @ 18 MHz                 | 38                     | 14.4            | 18   | 0.17        | 200              | 0.95      |
| SDRH7342D-220M | 18.37 @ 15 MHz                 | 49                     | 17.6            | 22   | 0.22        | 200              | 0.84      |
| SDRH7342D-270M | 25.63 @ 14 MHz                 | 42                     | 21.6            | 27   | 0.25        | 200              | 0.78      |
| SDRH7342D-330M | 26.26 @ 14 MHz                 | 41                     | 26.4            | 33   | 0.27        | 200              | 0.76      |
| SDRH7342D-380M | 35.44 @ 11 MHz                 | 42                     | 31.2            | 38   | 0.38        | 200              | 0.64      |
| SDRH7342D-470M | 34.38 @ 11 MHz                 | 38                     | 37.6            | 47   | 0.42        | 200              | 0.61      |
| SDRH7342D-560M | 41.03 @ 7.9 MHz                | 40                     | 44.8            | 56   | 0.45        | 200              | 0.58      |
| SDRH7342D-680M | 70.55 @ 8.5 MHz                | 52                     | 54.4            | 68   | 0.80        | 200              | 0.51      |
| SDRH7342D-820M | 84.57 @ 7.4 MHz                | 26                     | 65.6            | 82   | 0.68        | 200              | 0.48      |
| SDRH7342D-101M | 89.05 @ 6.5 MHz                | 24                     | 80.0            | 100  | 0.77        | 200              | 0.45      |
| SDRH7342D-121M | 101.4 @ 6.4 MHz                | 22                     | 96.0            | 120  | 1.03        | 200              | 0.39      |
| SDRH7342D-151M | 121.2 @ 5.5 MHz                | 19                     | 120             | 150  | 1.35        | 200              | 0.34      |
| SDRH7342D-181M | 141.5 @ 4.8 MHz                | 20                     | 144             | 180  | 1.52        | 200              | 0.32      |
| SDRH7342D-221M | 133.0 @ 4.8 MHz                | 25                     | 176             | 220  | 1.72        | 200              | 0.30      |
| SDRH7342D-271M | 103.7 @ 3.6 MHz                | 18                     | 216             | 270  | 2.41        | 200              | 0.25      |
| SDRH7342D-331M | 131.7 @ 3.8 MHz                | 9.1                    | 264             | 330  | 2.70        | 200              | 0.24      |
| SDRH7342D-391M | 145.9 @ 3.1 MHz                | 11                     | 312             | 390  | 3.05        | 200              | 0.23      |
| SDRH7342D-471M | 187.2 @ 2.7 MHz                | 11                     | 376             | 470  | 4.00        | 200              | 0.20      |
| SDRH7342D-561M | 204.4 @ 2.6 MHz                | 8.1                    | 448             | 560  | 4.43        | 200              | 0.18      |
| SDRH7342D-681M | 210.0 @ 2.2 MHz                | 3.3                    | 544             | 680  | 5.00        | 200              | 0.18      |
| SDRH7342D-821M | 251.8 @ 2.4 MHz                | 6.8                    | 656             | 820  | 6.80        | 200              | 0.15      |
| SDRH7342D-102M | 276.1 @ 2.1 MHz                | 5.1                    | 800             | 1000 | 7.80        | 200              | 0.14      |

## PHYSICAL CHARACTERISTICS & WINDING:



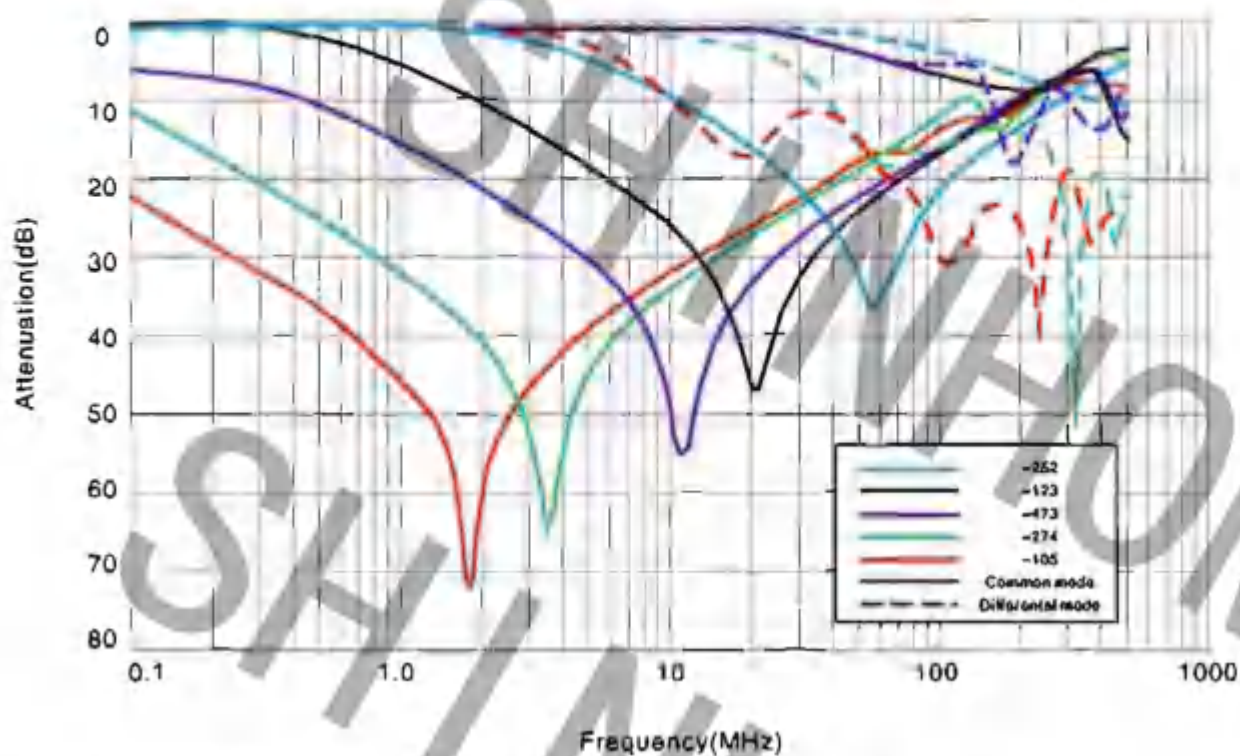
Recommended Land Pattern



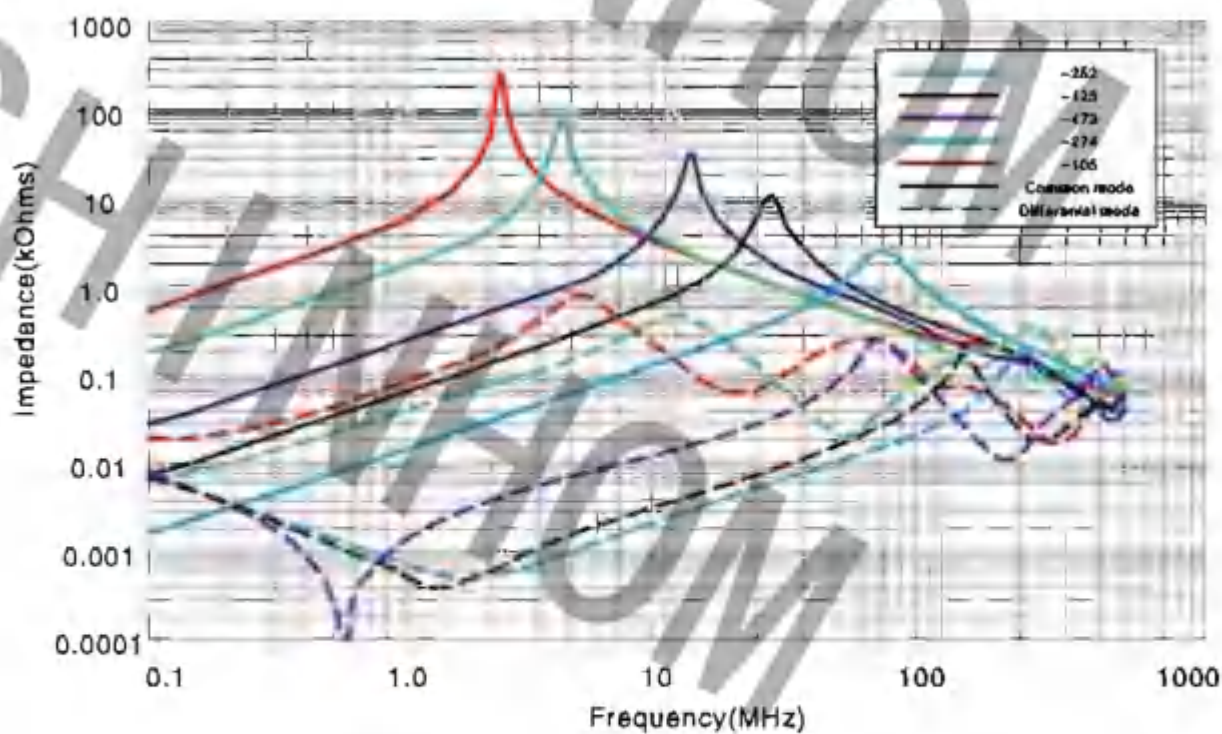
1. Frequency at which the differential mode attenuation equals -3dB
2. Inductance shown for each winding, measured at 100 kHz, 0.1 Vrms, 0 Aac on an Agilent/HP 4284A LCR meter or equivalent
3. DCR is for each winding.
4. Winding-to-winding isolation 500 Vrms, one minute
5. Current that causes a 40 °C temperature rise from 25 °C ambient. This information is for reference only and does not represent absolute maximum ratings
6. Electrical specifications at 25 °C
7. Ambient temperature -40 °C to +85 °C with Irms current. Maximum part temperature +125 °C (ambient + temp rise).
8. Storage temperature Component: -40 °C to +125 °C .
9. Tape and reel packaging: -40 °C to +80 °C

## PERFORMANCE CURVE:

Typical Attenuation(Ref:50 Ohms)



Typical Impedance vs Frequency



## SMD MULTI-LAYER COMMON MODE FILTER

### FEATURES

- Effective for suppressing common mode noise and almost no effect for high speed differential data line
- Ultra low profile ( $0.87 \times 0.67 \times 0.50\text{mm}$ )
- Ceramic multilayer type SMD component
- Non-polarized product
- It is a product conforming to RoHS directive
- Operating Temperature Range  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

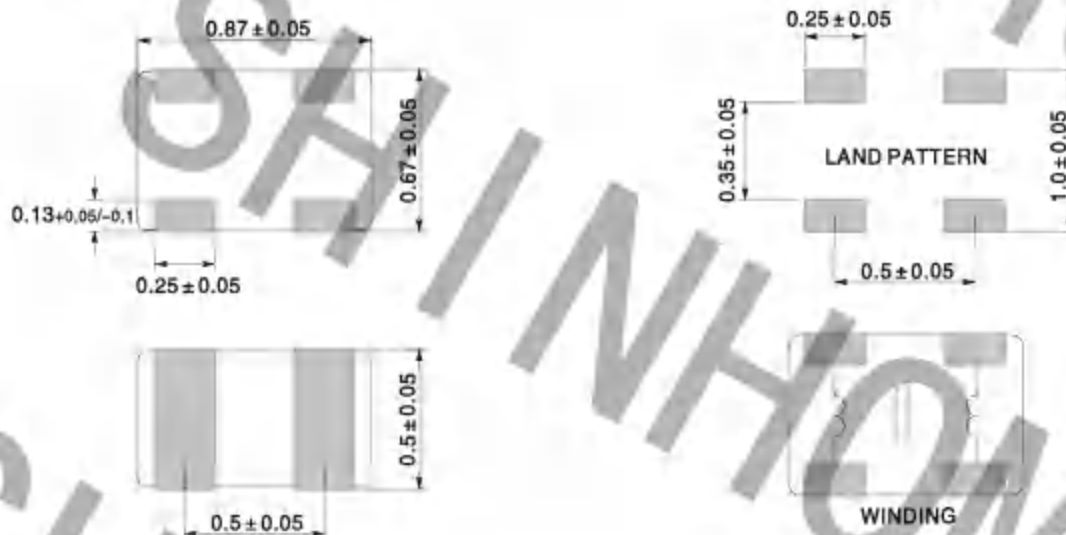
### APPLICATIONS

- LVDS lines in notebook computers
- USB2.0, IEEE1394, DVI, HDMI lines in PDP, LCD TV, DVD Player, PC, Audio player, DSC
- MDDI, MIPI in mobile phone

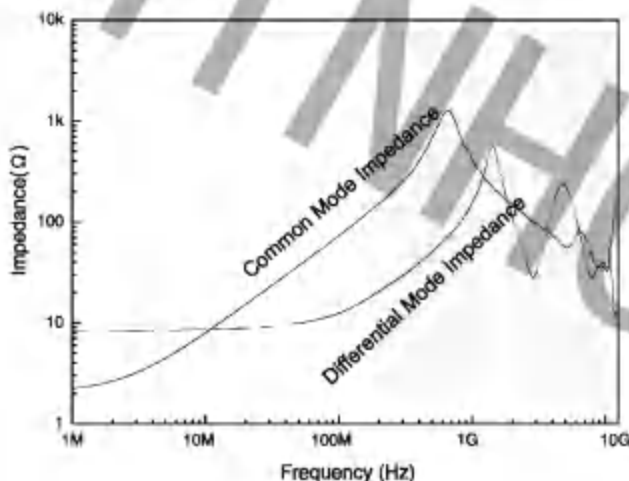
### SPECIFICATION OF ELECTRICAL CHARACTERISTICS

| Part Number   | Common mode Impedance ( $\Omega$ ) @ 100MHz | DCR ( $\Omega$ ) Max | Insulation Resistance (M $\Omega$ ) Min | Rated current (mA) Max | Rated voltage (V) Max | Cutoff frequency (GHz) Typ |
|---------------|---------------------------------------------|----------------------|-----------------------------------------|------------------------|-----------------------|----------------------------|
| SBA0302-2-900 | $90 \pm 25\%$                               | 6.0                  | 10                                      | 100                    | 5.0                   | 4.0                        |

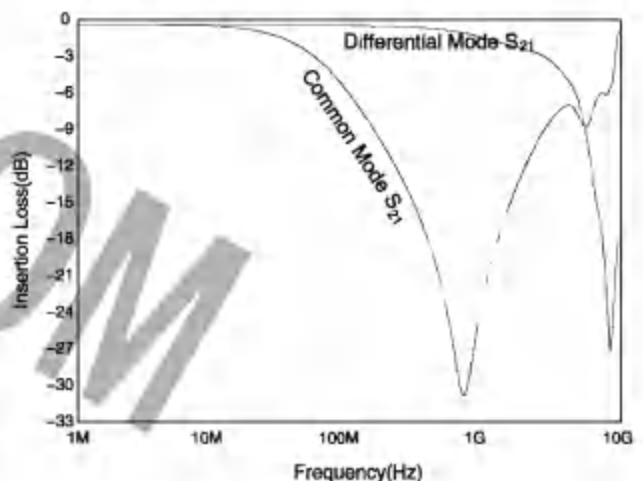
### APPEARANCE AND DIMENSION



### IMPEDANCE CURVES



### TRANSMISSION CHARACTERISTICS (S-PARAMETER)





## SMD MULTI-LAYER COMMON MODE FILTER

### FEATURES

- Effective for suppressing common mode noise and almost no effect for high speed differential data line
- Ultra low profile ( $2.0 \times 1.2 \times 0.8\text{mm}$ )
- Ceramic multilayer type SMD component
- Non-polarized product
- It is a product conforming to RoHS directive
- Operating Temperature Range  $-40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

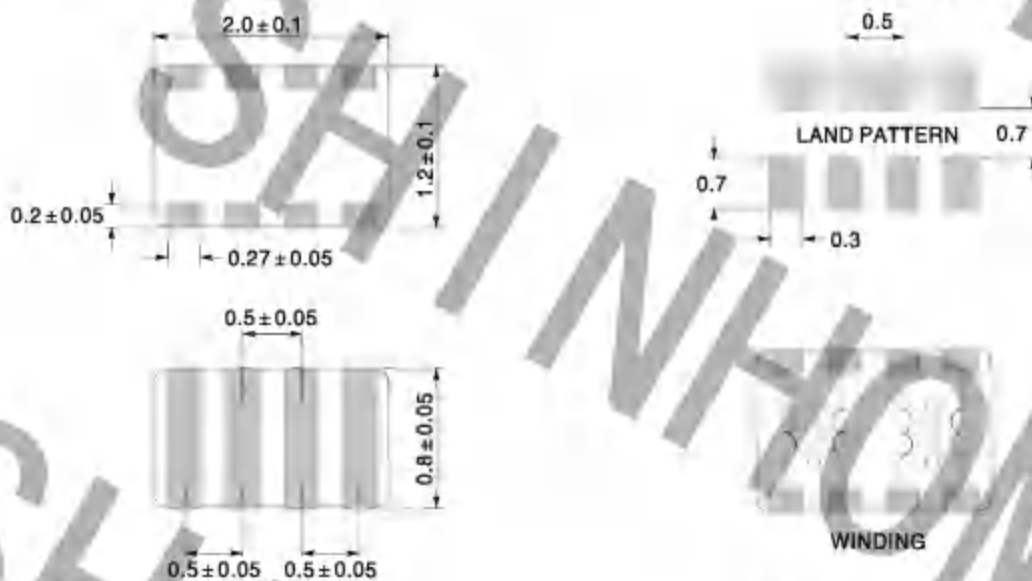
### APPLICATIONS

- LVDS lines in notebook computers
- USB2.0, IEEE1394, DVI, HDMI lines in PDP, LCD TV, DVD Player, PC, Audio player, DSC
- MDDI, MIPI in mobile phone

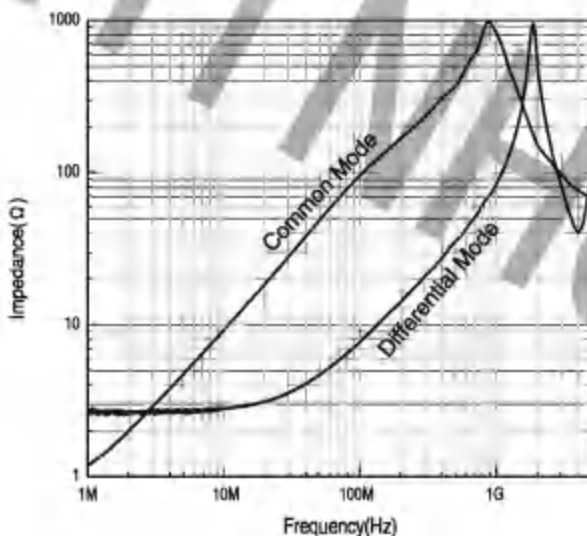
### SPECIFICATION OF ELECTRICAL CHARACTERISTICS

| Part Number   | Common mode Impedance ( $\Omega$ ) @ 100MHz | DCR ( $\Omega$ ) Max | Insulation Resistance (M $\Omega$ ) Min | Rated current (mA) Max | Rated voltage (V) Max | Cutoff frequency (GHz) Typ |
|---------------|---------------------------------------------|----------------------|-----------------------------------------|------------------------|-----------------------|----------------------------|
| SBA0805-4-101 | $100 \pm 25\%$                              | 4.0                  | 10                                      | 100                    | 5.0                   | 3.0                        |

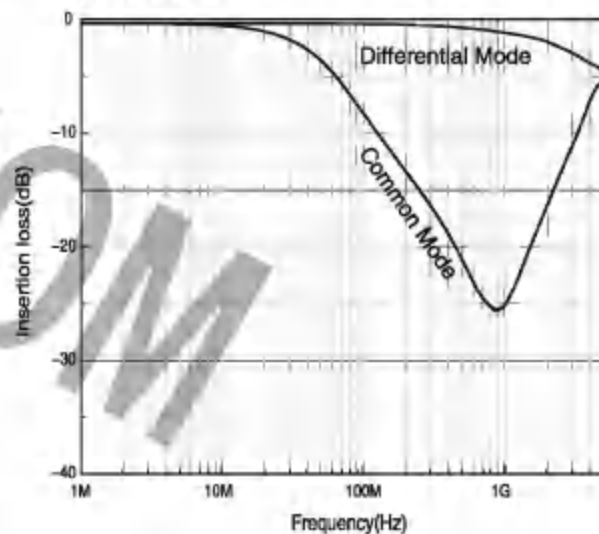
### APPEARANCE AND DIMENSION



### IMPEDANCE CURVES



### TRANSMISSION CHARACTERISTICS (S-PARAMETER)



## 1. Generals

- This specification covers the engineering requirements for the SBA0504ESD-350Y (Common Mode ESD Filter)

## 2. Features

- Effective for suppressing common mode noise and almost no effect for high speed differential data line
- Two common mode filters and four ESD suppression devices integrated
- Ultra low profile (1.27 x 1.00 x 0.60mm)
- Ceramic multilayer type SMD component
- Non-polarized product
- It is a product conforming to RoHS directive.
- 1210(0504) Multilayer array type

## 3. Applications

- LVDS lines in notebook computers
- USB2.0, UBS3.1 Gen 1, IEEE1394, DVI, HDMI lines in PDP, LCD TV, DVD Player, PC, Audio player, DSC
- MDDI, MIPI in mobile phone

## 4. Product specifications

### 4. 1 Part number code

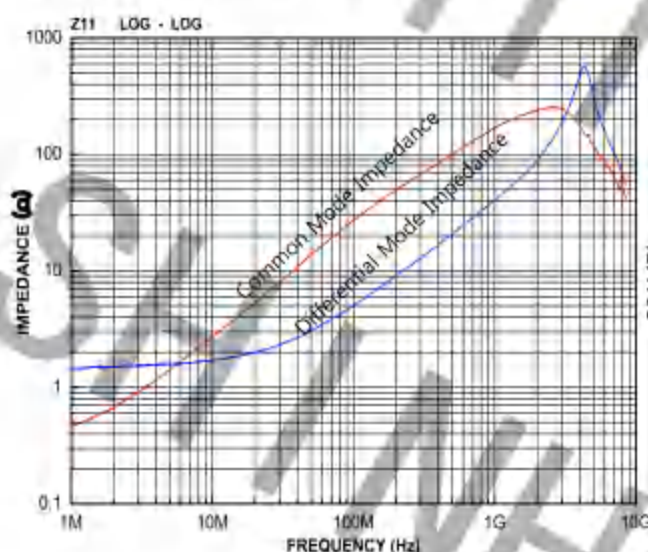
|            |             |            |            |          |
|------------|-------------|------------|------------|----------|
| <u>SBA</u> | <u>0504</u> | <u>ESD</u> | <u>350</u> | <u>Y</u> |
| ①          | ②           | ③          | ④          | ⑤        |

- ① Series name of Common Mode ESD Filter
- ② Dimensions, 1.27mm (L) x 1.0mm (W)
- ③ ESD Filter
- ④ Common Mode Impedance (at 100MHz), 350= 35Ω
- ⑤ Tolerance of common mode impedance, Y= ±25%

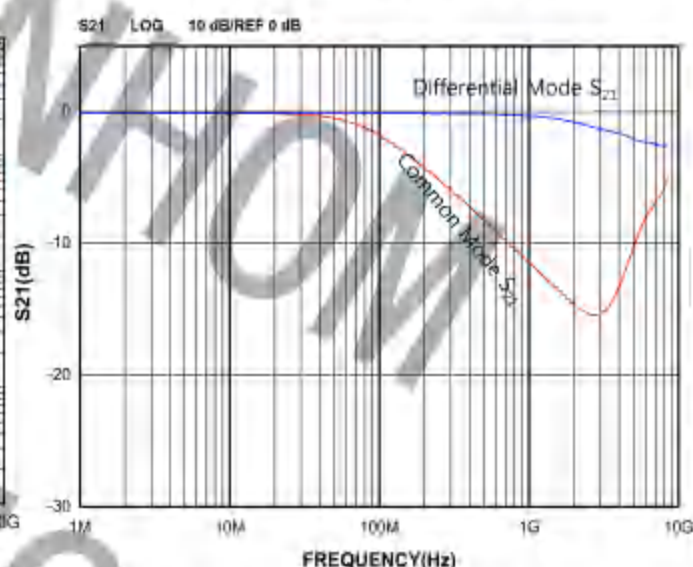
## 4. 2 Specification of electrical characteristics

| Characteristics | Common Mode Impedance | Resistance                 | Leakage Current | Capacitance   | Insulation Resistance | Rated Voltage              | Rated Current              |
|-----------------|-----------------------|----------------------------|-----------------|---------------|-----------------------|----------------------------|----------------------------|
| symbol          | $Z_{CM}$              | $R_{DC}$                   | $I_L$           | $C$           | $IR_{CR}$             | $V_R$                      | $I_R$                      |
| Units           | $\Omega$              | $\Omega$                   | $\mu A$         | pF            | $M\Omega$             | Volt                       | mA                         |
| Test Condition  | @100MHz               | $25^\circ C \pm 2^\circ C$ | 5V              | 0.5Vrms @1MHz | 5V                    | $25^\circ C \pm 2^\circ C$ | $25^\circ C \pm 2^\circ C$ |
| Value           | 35( $\pm 25\%$ )      | Max 4.0                    | Max 1.0         | Max 1.7       | Min 10                | 5                          | Max100                     |

- Impedance Curves



-Transmission characteristics (S-parameter)



## 4. 3 Operating Temperature

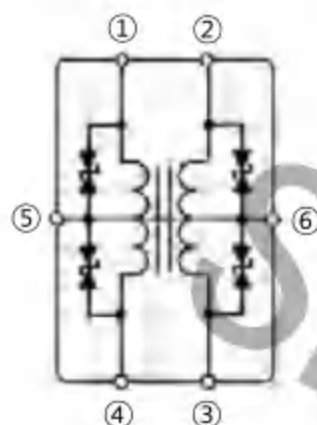
| DESCRIPTION           | REQUIREMENTS                                                        |
|-----------------------|---------------------------------------------------------------------|
| Operating Temperature | $-40^\circ C \sim +85^\circ C$<br>(including self-temperature rise) |

## 5. Equivalent Circuit & Recommended Foot print & Stencil mask

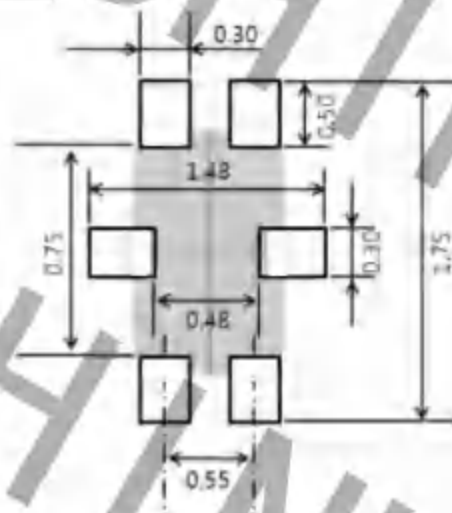
| PIN NUMBER | DESCRIPTION |
|------------|-------------|
| ①~④        | DATA LINE   |
| ⑤, ⑥       | GROUND      |

Unit : mm

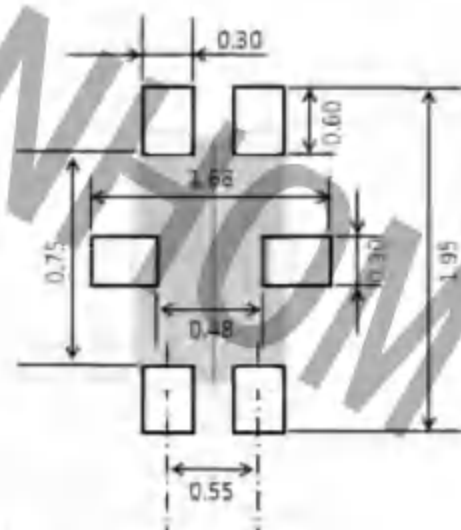
Stencil Mask T : 0.10mm



[ Equivalent circuit ]



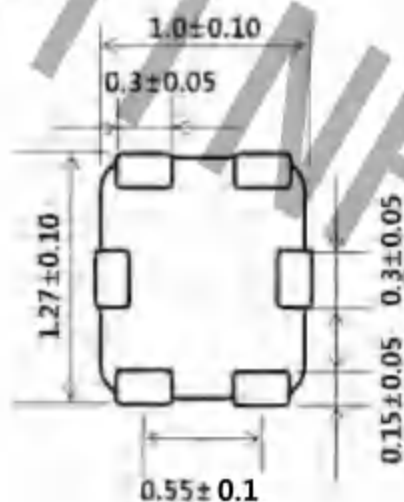
[ Foot print ]



[ Stencil Mask ]

## 6. Appearance and Dimension

Unit : mm



<top>

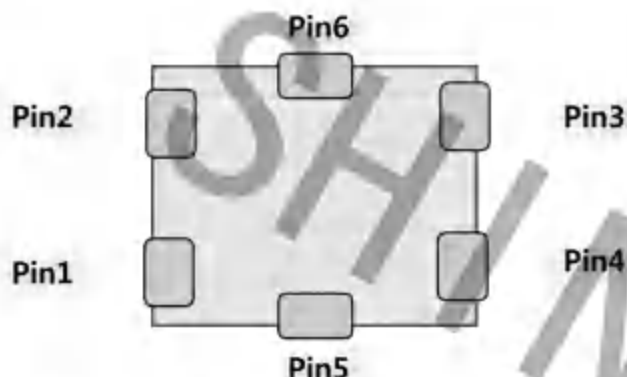


<side>



## 7. Test method of Electrical property

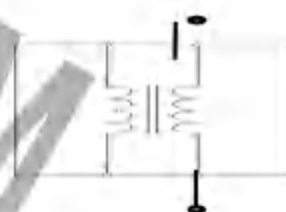
### - PIN INDEX



| ITEM         | DESCRIPTION                      | SOURCE         | EQUIPMENT        |
|--------------|----------------------------------|----------------|------------------|
| Rdc          | Pin 1-4, 2-3                     | 10mA DC Source | Source Meter     |
| CM Impedance | Pin 1-2(Short) to Pin 3-4(Short) | 500mV          | LCR Meter (3GHz) |
| IL           | Pin 5 or 6 to Pin 1, 2, 3, 4     | 5V DC Source   | Source Meter     |
| $IR_{CB}$    | Pin1 -2 or Pin3-4                | 5V DC Source   | Source Meter     |

### 7. 1 Rdc (Model: KEITHLEY 2400)

- Off power and On power.
- Press button ' $\Omega$ ' of MEAS.
- Measure Rdc value using test fixture.

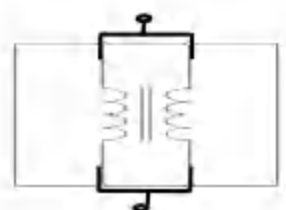


Terminal

Terminal

### 7. 2 Common Mode Impedance (Model: Agilent 4287A)

- Calibrate equipment
- Measure CM Impedance (at 100MHz) using test fixture.

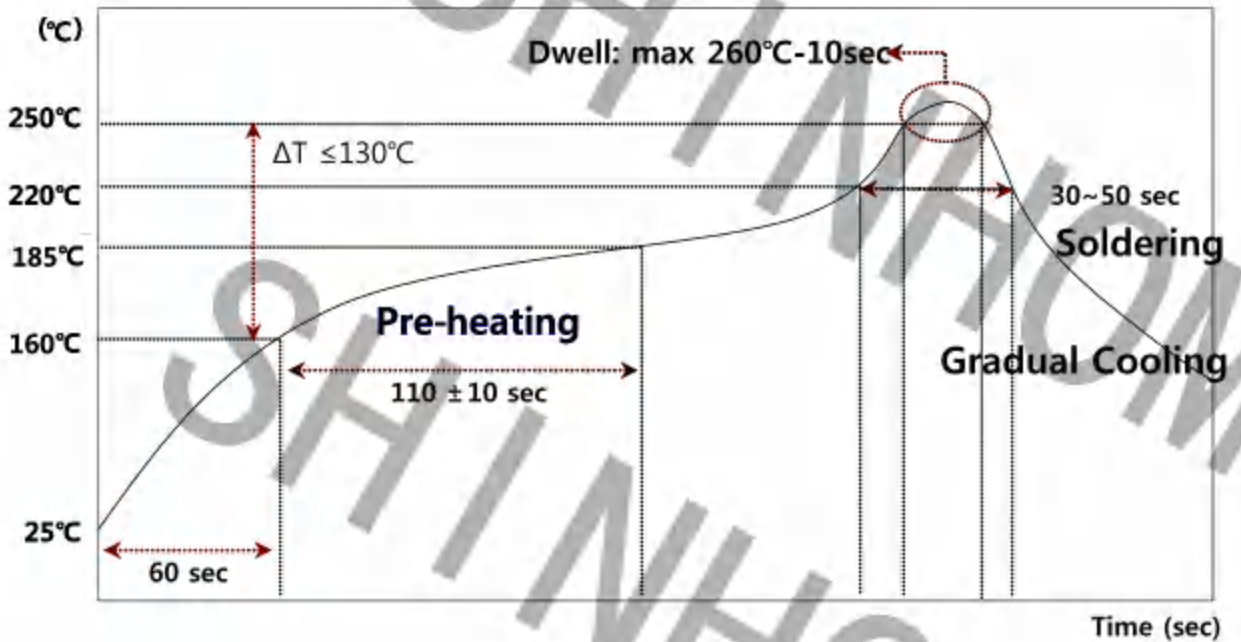


Terminal

Terminal

## 8. Reflow condition

### 8. 1 Recommended soldering profile (Lead-free condition)



### 8. 2 Recommended Lead-free solder paste

- Supplier : Tamura Donghwa
- Main composition : Sn-Ag-Cu
- Ratio of composition : 96.5%-3.0%-0.5%

### 8. 3 Recommended hand solder

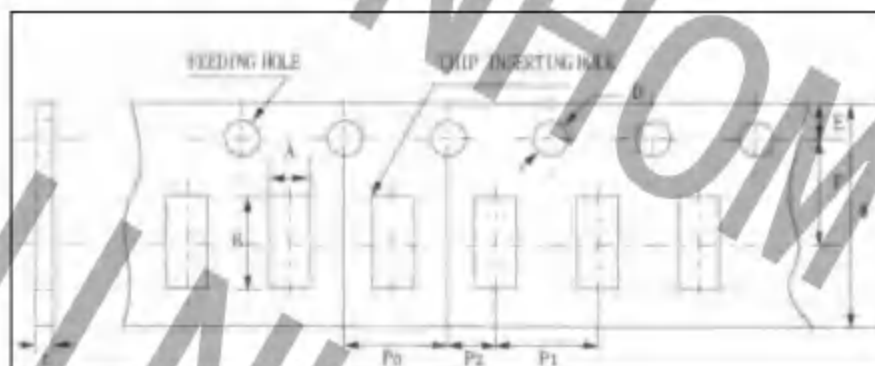
- Max Temperature: Max 380 °C(Max 5sec)

## 9. Packing specification

### 9.1 Taping figure



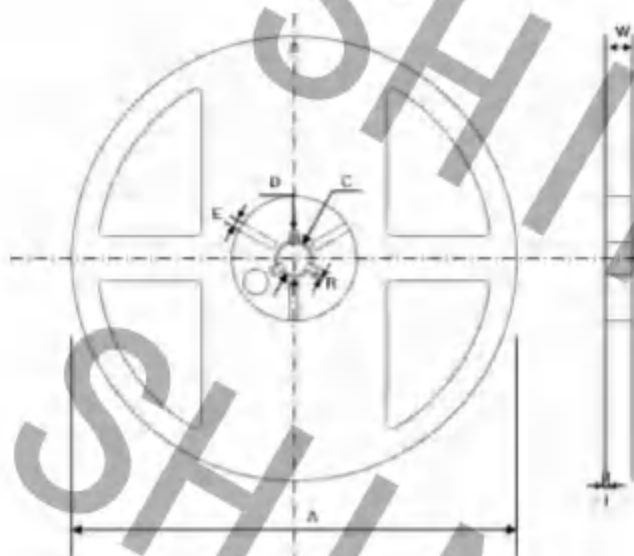
### 9.2 Carrier tape dimensions



Unit : mm

| SYMBOL    |    | A             | B            | W                     | F            | E             | P <sub>1</sub> | P <sub>2</sub> | P <sub>0</sub> | D             | t             |
|-----------|----|---------------|--------------|-----------------------|--------------|---------------|----------------|----------------|----------------|---------------|---------------|
| DIMENSION | 11 | 1.15<br>±0.05 | 1.5<br>±0.05 | 8.0<br>+0.30<br>-0.10 | 3.5<br>±0.05 | 1.75<br>±0.05 | 4.0<br>±0.10   | 2.0<br>±0.05   | 4.0<br>±0.10   | 1.55<br>±0.03 | 0.75<br>±0.05 |

### 9. 3 Reel dimensions



- (1) Reel Materials: Polystyrene
- (2) Label
- (3) Taping
  - Standard Packing Quantity per Reel ( $\phi 178$ )
  - Paper Tape: 4,000pcs

Unit : mm

| CODE      | A                | B              | C                 | D                 | E             | W            | t             | R             |
|-----------|------------------|----------------|-------------------|-------------------|---------------|--------------|---------------|---------------|
| DIMENSION | $\phi 178 \pm 2$ | Min. $\phi 50$ | $\phi 13 \pm 0.5$ | $\phi 20 \pm 0.8$ | $3.0 \pm 0.5$ | $10 \pm 1.5$ | $1.3 \pm 0.2$ | $1.0 \pm 0.2$ |



## SMT DATA LINE EMI FILTERS

### SDF80 SERIES

#### FEATURES:

- Exceptional common mode noise attenuation from 15 MHz to 300 MHz; passes signal line data below 300 MHz with minimal attenuation
- DC current capacity of 500 or 100 mA
- Excellent electrical isolation 300 Vrms for 1 minute



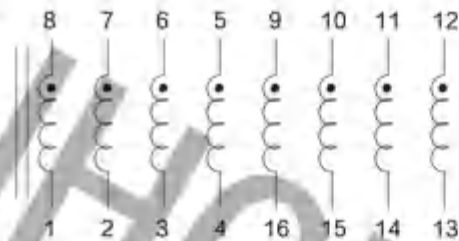
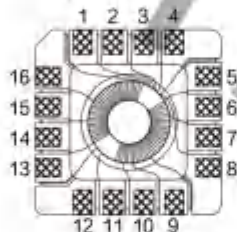
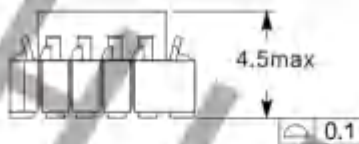
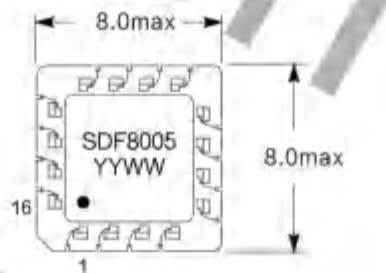
#### ELECTRICAL CHARACTERISTICS@25°C

| Part Number | Inductance (uH) Min @1 MHz | Common mode peak impedance (kΩ) | Cutoff frequency (GHz) | DCR (mΩ) Max | IDC (mA) |
|-------------|----------------------------|---------------------------------|------------------------|--------------|----------|
| SDF8000     | 5.0                        | 0.63@37MHz                      | 0.053                  | 250          | 100      |
| SDF8005     | 5.0                        | 0.52@42MHz                      | 0.053                  | 180          | 500      |

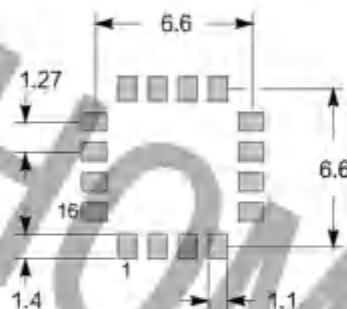
1. Frequency at which the differential mode attenuation equals -3 dB
2. DCR is for each winding.
3. Current rating is for each line.

#### TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS

Dimensions(mm)

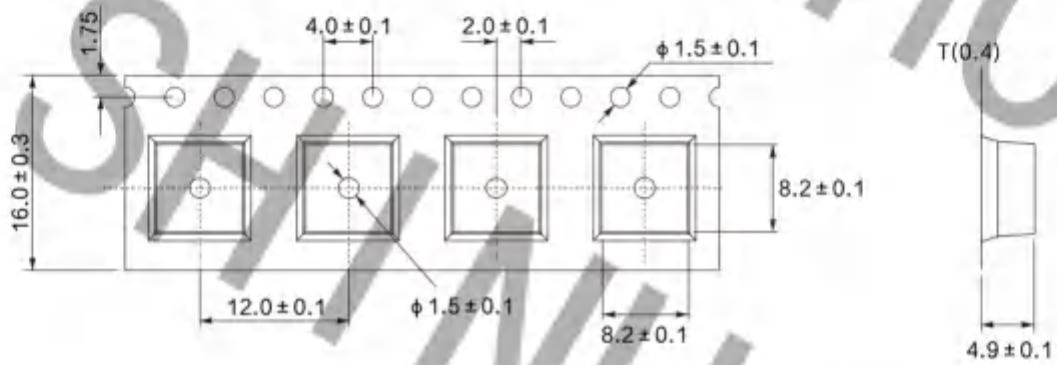
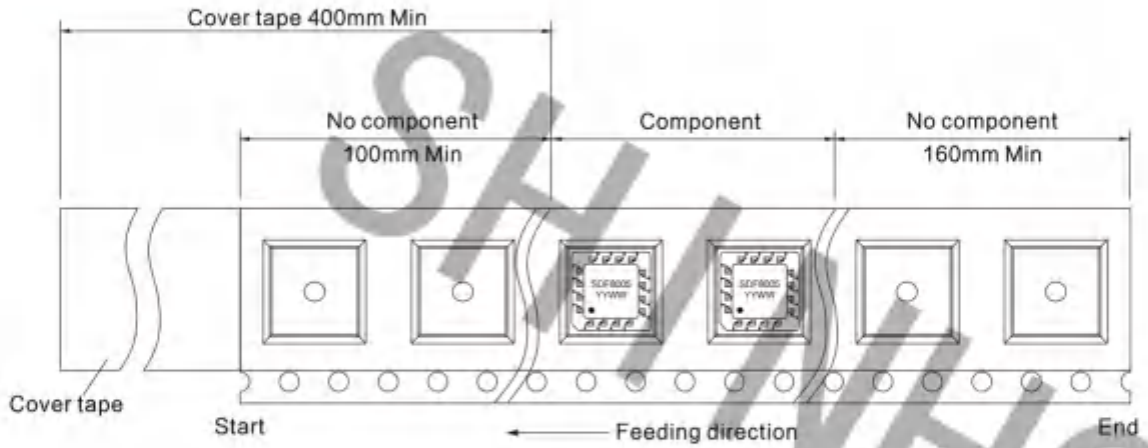


Recommended Land Pattern

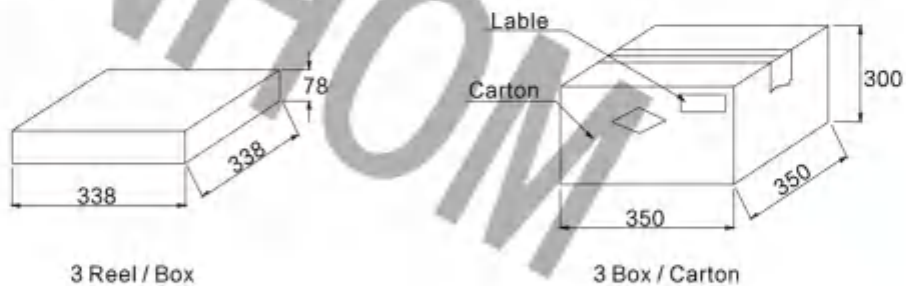


- Ambient temperature -40°C to +85°C
- Storage temperature Component: -40°C to +85°C, Tape and reel packaging: -40°C to +80°C
- Resistance to soldering heat Max three 40 second reflows at +260°C, parts cooled to room temperature between cycles
- Packaging 1000/13" reel Plastic tape: 16 mm wide, 0.46 mm thick, 12 mm pocket spacing, 4.5 mm pocket depth

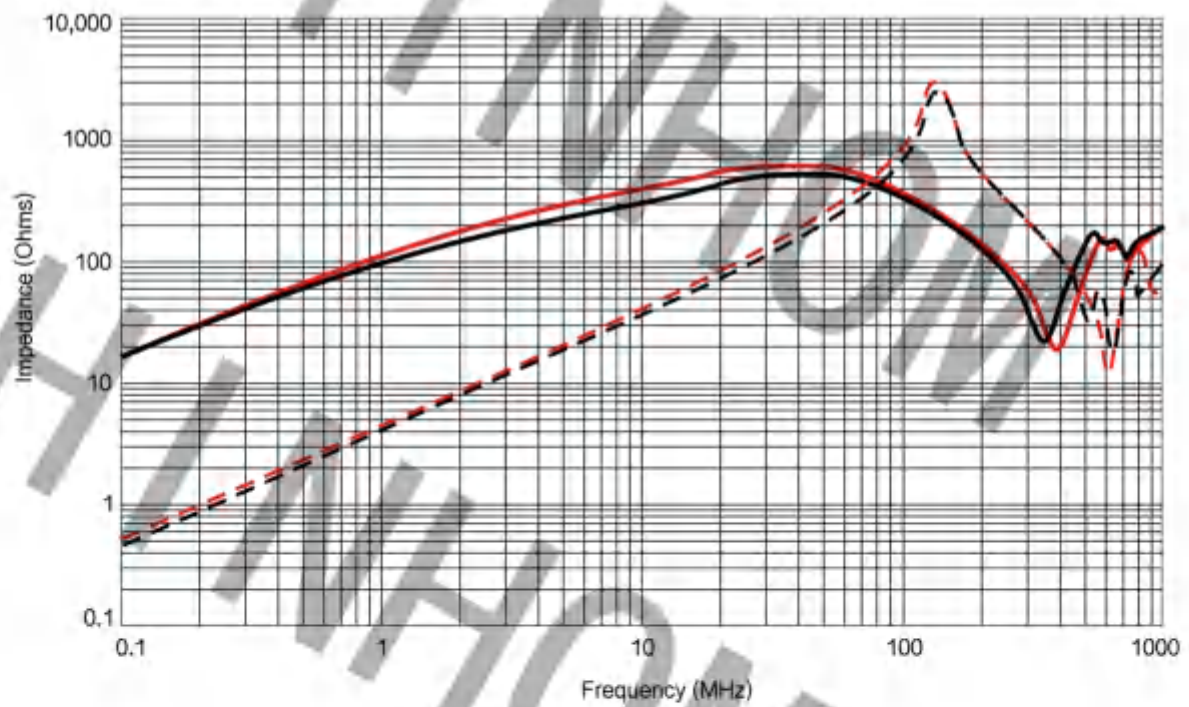
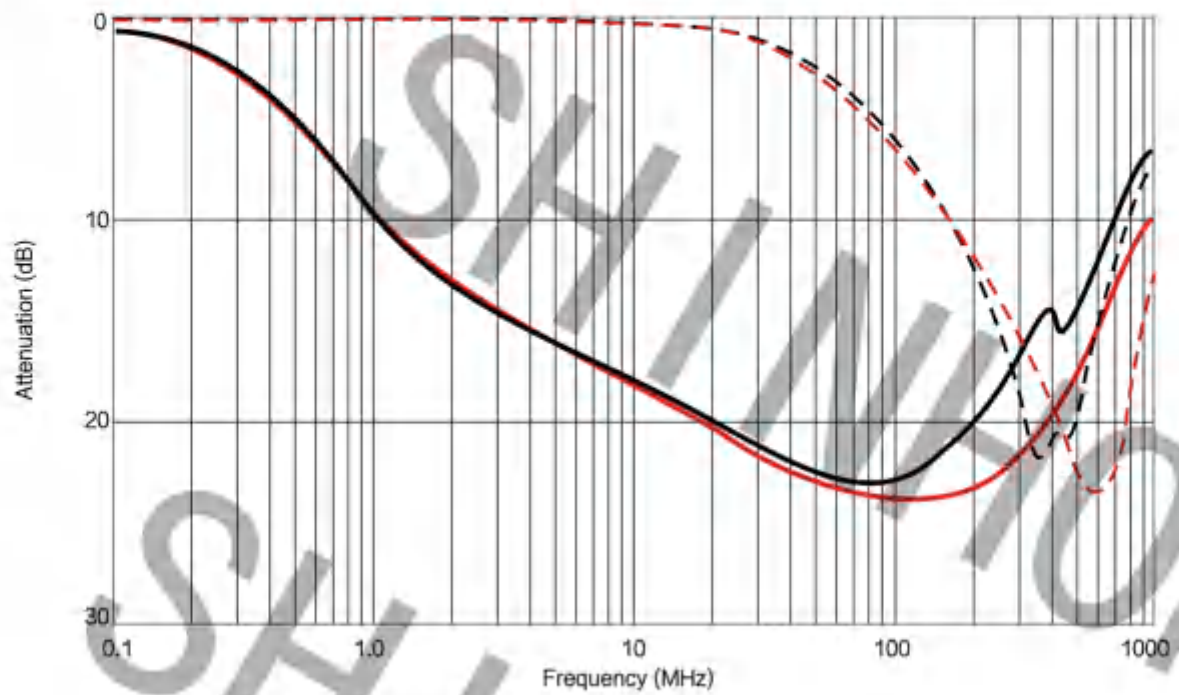
CARRIER PACKAGING UNIT : (mm)



1000PCS/Reel



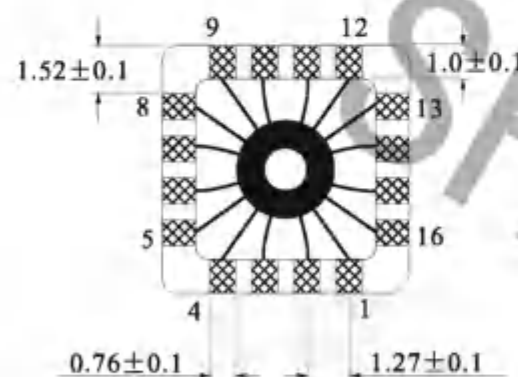
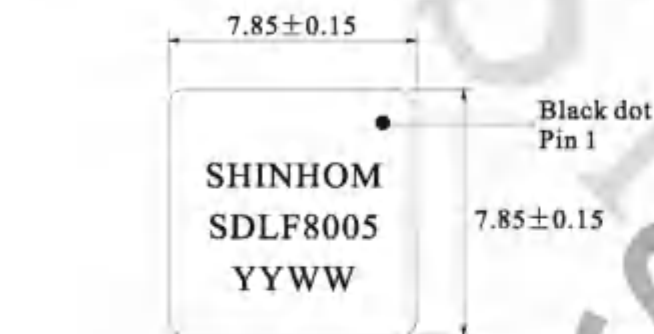
## CHARACTERISTIC CURVE



- SDF8000
- SDF8005
- Common mode
- - - Differential mode

| Rev. | Description | Date       |
|------|-------------|------------|
| A0   | New release | 2020.06.03 |
|      |             |            |
|      |             |            |

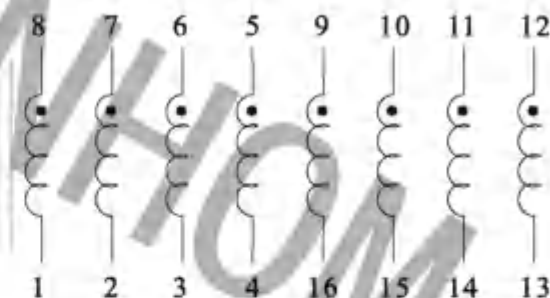
## 1. PHYSICAL CHARACTERISTICS (mm)



Recommended  
Land Pattern



## 2. ELECTRICAL SCHEMATIC



## 3. ELECTRICAL SPECIFICATIONS

Inductance: 5.0uH Min@1.0MHz,0.1V

RDC: 200mΩ Max

Rated current: 500mA Max

Operating temperature: -40℃ to +85℃

Storage temperature: -40℃ to +85℃

Packaging: 1000PCS/13 "Reel

Weight: 1.2Kg/Reel

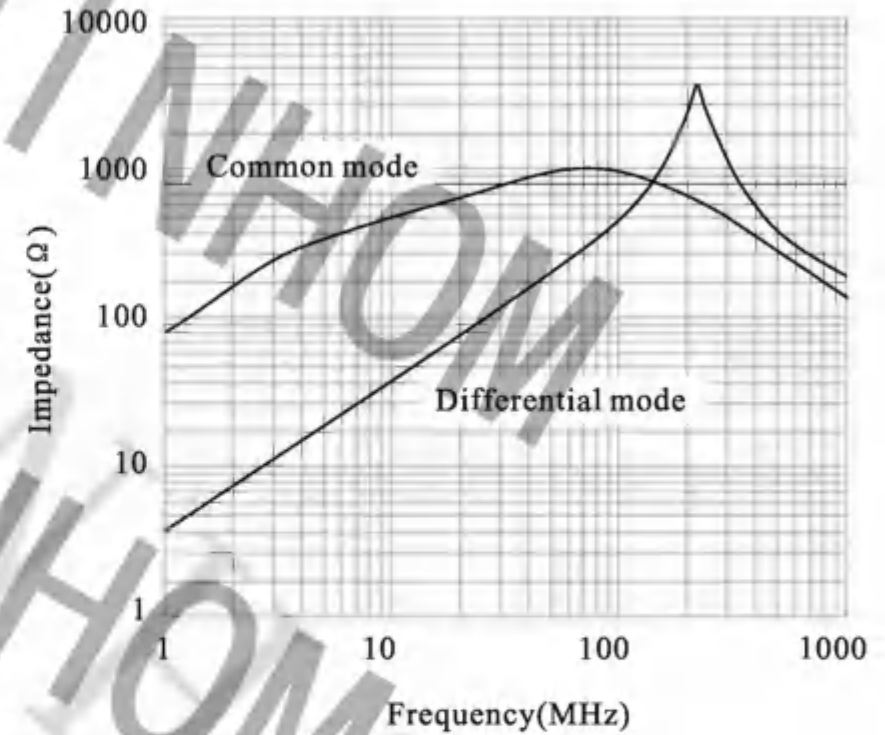
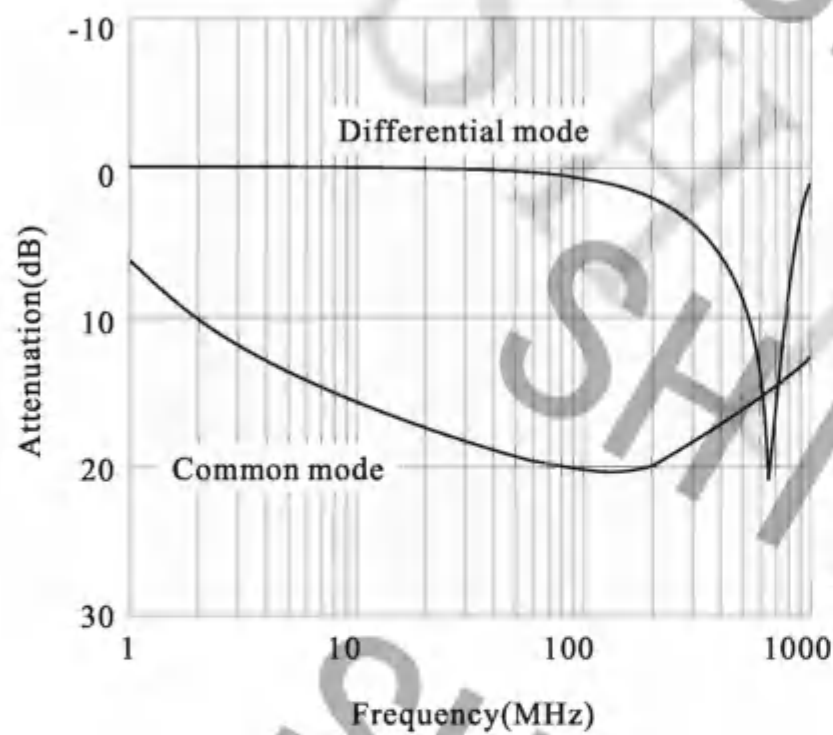
|               |                           |            |            |
|---------------|---------------------------|------------|------------|
| NAME:         | SMT Data Line EMI Filters |            |            |
| CUSTOMER P/N: | CCDLF-8500LD              | DATE:      | 2020-06-03 |
| SHINHOM P/N:  | SDLF8005                  | REV: A0    | PAGE       |
| DRAWN BY      | CHECKED BY                | APPROVE BY |            |



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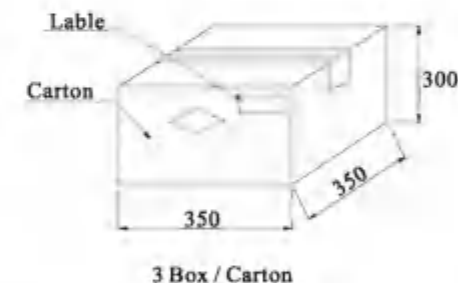
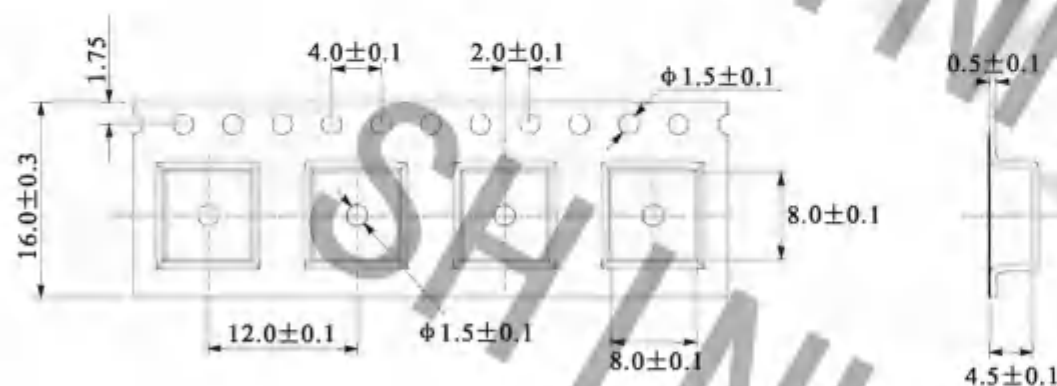
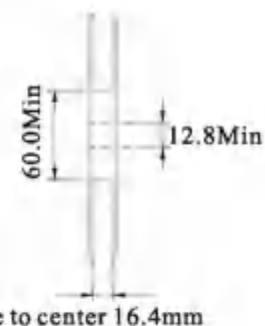
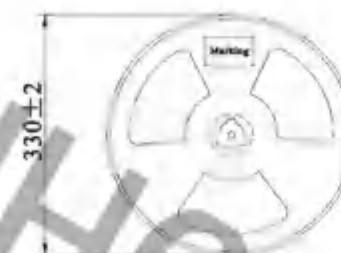
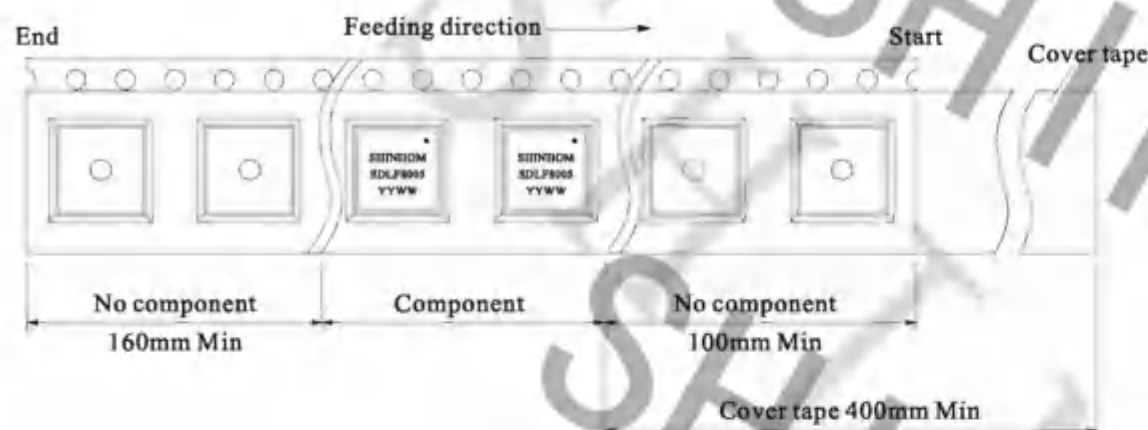


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|               |                           |            |            |
|---------------|---------------------------|------------|------------|
| NAME:         | SMT Data Line EMI Filters |            |            |
| CUSTOMER P/N: | CCDLF-8500LD              | DATE:      | 2020-06-03 |
| SHINHOM P/N:  | SDLF8005                  | REV: A0    | PAGE       |
| DRAWN BY      | CHECKED BY                | APPROVE BY |            |

# CARRIER TAPEING REEL & CARRIER MATERIALS (PAPER PLASTICS) UNIT : (mm)



|               |                           |            |            |
|---------------|---------------------------|------------|------------|
| NAME:         | SMT Data Line EMI Filters |            |            |
| CUSTOMER P/N: | CCDLF-8500LD              | DATE:      | 2020-06-03 |
| SHINHOM P/N:  | SDLF8005                  | REV: A0    | PAGE       |
| DRAWN BY      | CHECKED BY                | APPROVE BY |            |



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# SMT COMMON MODE CHOKES

## AEP18 SERIES

### FEATURES:

- EP18 Platforms
- 19.5x19.8x19.2mm
- 154uH/21A to 400uH/14A
- 1000Vrms Isolation (380Vrms continuous)



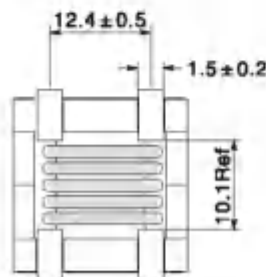
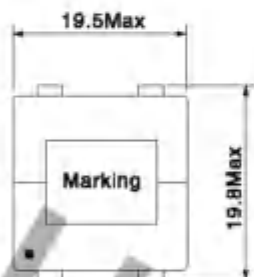
### ELECTRICAL CHARACTERISTICS@25℃

| Part Number    | Inductance (uH) $\pm 40\%$<br>1-2-4-3 | Rated current (A) | LK (uH) Typ<br>1-2(Short 4,3) | Capacitance (pF) Typ.<br>1-4 | SRF (MHz) Typ | Impedance @ SRF (K $\Omega$ ) Typ | DCR (m $\Omega$ ) Max |
|----------------|---------------------------------------|-------------------|-------------------------------|------------------------------|---------------|-----------------------------------|-----------------------|
| AEP18-151Y-21A | 154.0                                 | 21                | 0.7                           | 5.0                          | 3.3           | 0.82                              | 2.2                   |
| AEP18-221Y-20A | 220.0                                 | 20                | 1.0                           | 6.1                          | 3.66          | 1.09                              | 2.6                   |
| AEP18-301Y-17A | 305.0                                 | 17                | 1.5                           | 7.2                          | 3.0           | 1.57                              | 3.85                  |
| AEP18-401Y-14A | 400.0                                 | 14                | 2.0                           | 8.2                          | 2.84          | 1.67                              | 5.5                   |

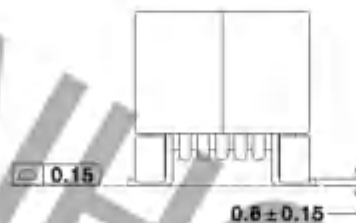
#### Note:

- Inductance test at 10KHz,0.1V
- The current rating (rated) is based upon the temperature rise of the component and represents the rms current which will cause a typical temperature rise of 80℃ with free air cooling
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- Operating temperature range -40℃ to +125℃

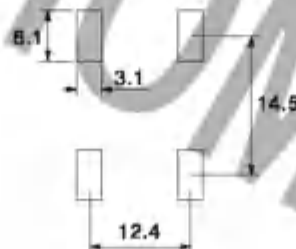
### TECHNICAL INFORMATION & WINDING



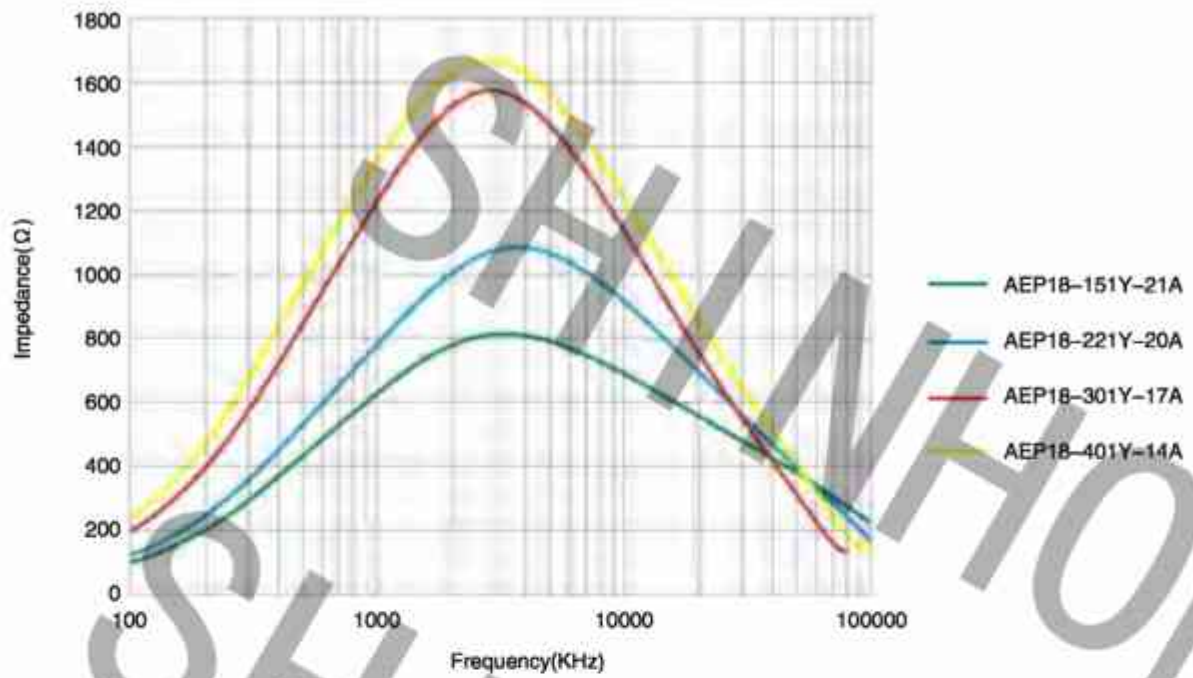
#### Winding



#### Suggest layout



Tape & Reel: 70PCS/Reel





# SMT COMMON MODE CHOKES

## AEP22 SERIES

### FEATURES:

- EP22 Platforms
- 23.5x24.3x22.7mm
- 110uH/32A to 470uH/18A
- 1000Vrms Isolation (380Vrms continuous)



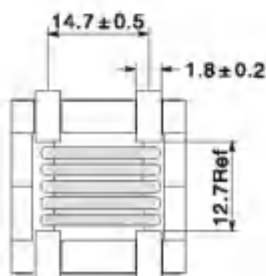
### ELECTRICAL CHARACTERISTICS@25°C

| Part Number    | Inductance (uH) $\pm 40\%$<br>1-2-4-3 | Rated current (A) | LK (uH) Typ<br>1-2(Short 4,3) | Capacitance (pF) Typ.<br>1-4 | SRF (MHz)Typ | Impedance @ SRF (K $\Omega$ )Typ | DCR (m $\Omega$ )Max |
|----------------|---------------------------------------|-------------------|-------------------------------|------------------------------|--------------|----------------------------------|----------------------|
| AEP22-111Y-32A | 110                                   | 32                | 0.7                           | 6.5                          | 2.82         | 0.5                              | 1.1                  |
| AEP22-191Y-30A | 190                                   | 30                | 0.9                           | 8                            | 3.35         | 0.7                              | 1.35                 |
| AEP22-261Y-26A | 260                                   | 26                | 1.3                           | 5.3                          | 2.82         | 1.05                             | 2.1                  |
| AEP22-361Y-22A | 360                                   | 22                | 1.8                           | 6                            | 2.1          | 1.55                             | 2.9                  |
| AEP22-471Y-18A | 470                                   | 18                | 2.0                           | 5.7                          | 1.96         | 1.95                             | 4.2                  |

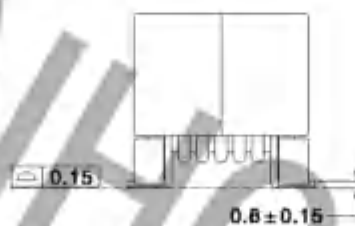
#### Note:

- Inductance test at 10KHz,0.1V
- The current rating (Irated) is based upon the temperature rise of the component and represents the rms current which will cause a typical temperature rise of 60°C with free air cooling
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- Operating temperature range -40°C to +125°C

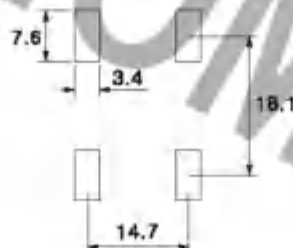
### TECHNICAL INFORMATION & WINDING



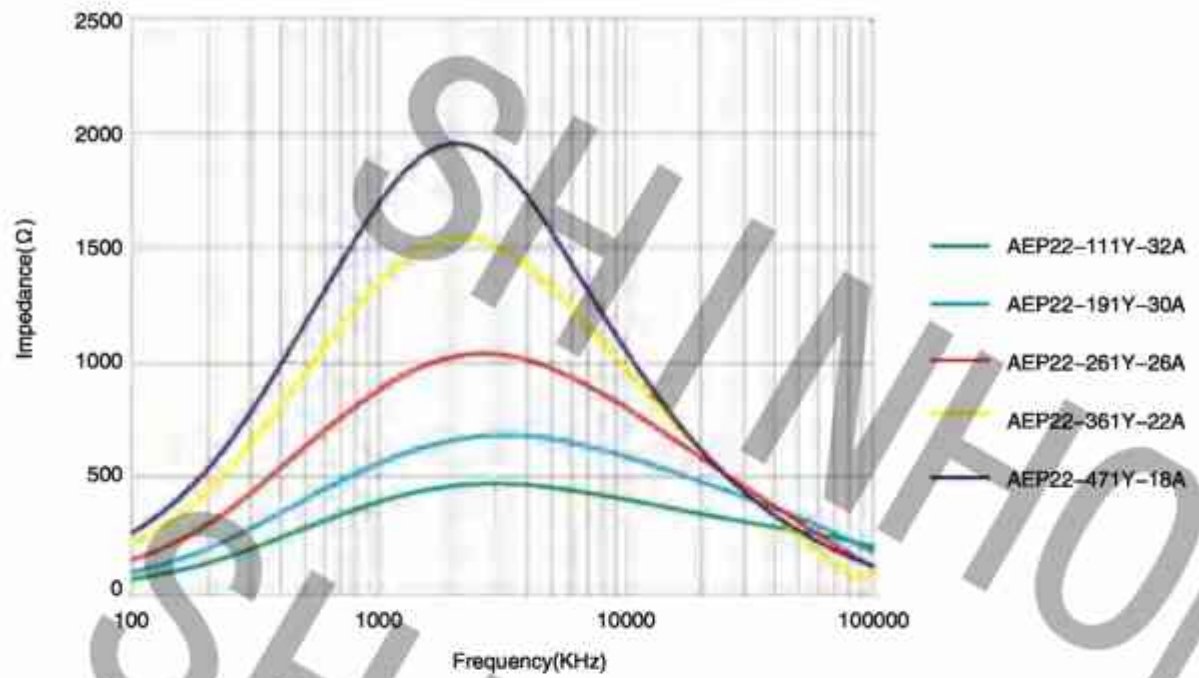
#### Winding



#### Suggest layout



Tape & Reel: 45PCS/Reel





## SMD Line Filter LQH2010D SERIES

### FEATURES:

- Current rating up to 6 A
- Impedance range: 100 to 1400MHz
- RoHS compliant

### APPLICATIONS:

- EMI suppression
- Power line equipment
- Portable equipment

### ELECTRICAL CHARACTERISTICS:@25°C

| Part Number   | Inductance (uH)Ref | Impedance Z(Ω) Typ 100MHz | Rated current (mA) | DCR (mΩ) | Rated voltage (Vdc) |
|---------------|--------------------|---------------------------|--------------------|----------|---------------------|
| LQH2010D-101Y | 0.4                | 100                       | 6000               | 9 ± 40%  | 50                  |
| LQH2010D-251Y | 0.8                | 250                       | 5000               | 14 ± 40% | 50                  |
| LQH2010D-501Y | 1.5                | 500                       | 4000               | 19 ± 40% | 50                  |
| LQH2010D-102Y | 2.7                | 1000                      | 2000               | 24 ± 40% | 50                  |
| LQH2010D-142Y | 3.5                | 1400                      | 1500               | 40 ± 40% | 50                  |

### PHYSICAL CHARACTERISTICS:

### WINDING:



### GENERAL SPECIFICATIONS:

Dielectric Withstanding Voltage: 125 Vdc  
 Insulation resistance: 10M Ω Min  
 Temperature Rise: 20 °C at rated current  
 Operating Temperature: -40 °C to +125 °C (Temperature rise included)  
 Storage Temperature: -40 °C to +125 °C  
 Solderability: 250 °C for 5 sec.

Note: All specifications subject to change without notice.



## SMD Line Filter LQH2020D SERIES

### FEATURES:

- Current rating up to 5 A
- Inductance range: 0.60 to 6.0 uH
- Frequency range to 1200 MHz
- RoHS compliant

### APPLICATIONS:

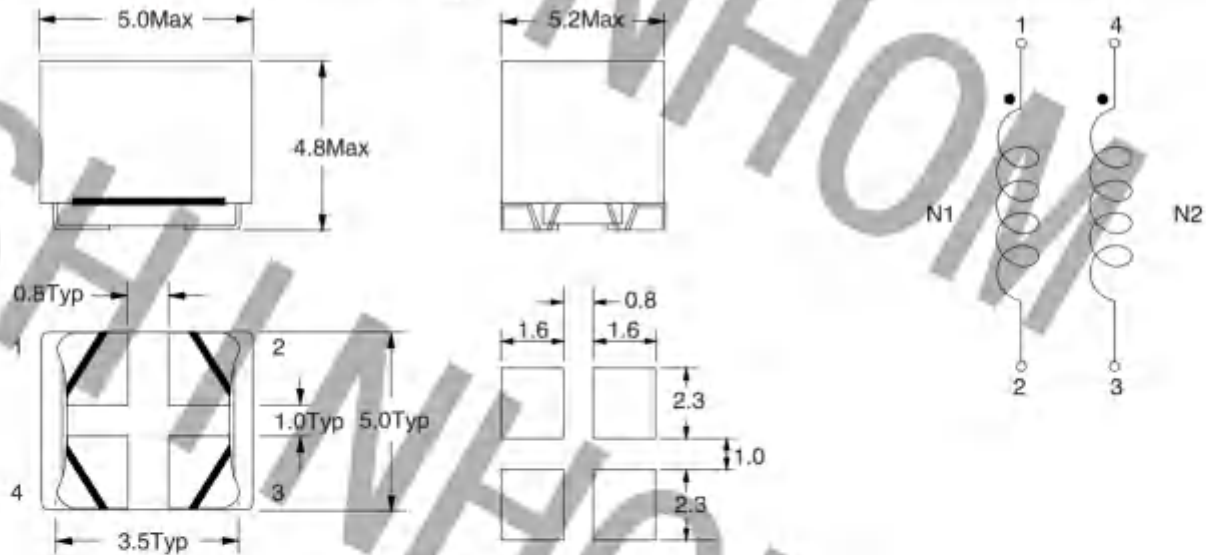
- EMI suppression

### ELECTRICAL CHARACTERISTICS:@25°C

| Part Number   | Inductance (uH)ref 100KHz,0.1V | Impedance Z(Ω) 100MHz | DCR Max. (mΩ). | Rated current (mA) |
|---------------|--------------------------------|-----------------------|----------------|--------------------|
| LQH2020D-191Y | 0.6                            | 190 ± 35%             | 20             | 5000               |
| LQH2020D-351Y | 1.1                            | 350 ± 35%             | 40             | 2000               |
| LQH2020D-102Y | 2.7                            | 1000 ± 35%            | 60             | 1500               |
| LQH2020D-152Y | 3.6                            | 1500 ± 35%            | 100            | 1000               |
| LQH2020D-302Y | 6.0                            | 3000 ± 35%            | 200            | 500                |
| LQH2020D-402Y | 2.8                            | 4000 ± 35%            | 300            | 200                |

### PHYSICAL CHARACTERISTICS:

### WINDING:



### GENERAL SPECIFICATIONS:

Rated Voltage : 50 Vdc  
 Dielectric Withstanding Voltage: 125 Vdc  
 Temperature Rise: 20 °C at rated current  
 Operating Temperature: -40 °C to +125 °C (Temperature rise included)  
 Storage Temperature: -40 °C to +125 °C  
 Solderability: 250 °C for 5 sec.

Note: All specifications subject to change without notice.



## PLANAR PLATFORMS SMT COMMON MODE CHOKES TPER19/25 SERIES

### FEATURES:

- ER19 and ER25 Planar Platforms
- 24.9x21.6x16.9mm and 30.5x27x18mm Max
- Up to 39Arms rated current
- Up to 1500V ISOLATON
- RoHS compliant



### ELECTRICAL CHARACTERISTICS@25°C

| Part Number                    | Inductance (uH) $\pm 35\%$<br>10KHz,0.1V<br>2,3-5,6 | LK (uH)Typ.<br>100KHz,0.1V<br>2,3-5,6 | DCR (m $\Omega$ )Max | Rated current (A) | SRF (MHz)Typ<br>2,3-5,6=10,11-7,8 | Impedance @SRF (K $\Omega$ )Typ |
|--------------------------------|-----------------------------------------------------|---------------------------------------|----------------------|-------------------|-----------------------------------|---------------------------------|
| <b>TPER19-24.9x21.6x16.9mm</b> |                                                     |                                       |                      |                   |                                   |                                 |
| TPER19-121Y                    | 120                                                 | 0.4                                   | 2.5                  | 20                | 1.65                              | 0.73                            |
| TPER19-201Y                    | 200                                                 | 0.5                                   | 3.5                  | 17                | 1.79                              | 1.08                            |
| TPER19-281Y                    | 280                                                 | 0.9                                   | 4.8                  | 14                | 1.57                              | 1.6                             |
| TPER19-361Y                    | 360                                                 | 1.3                                   | 5.3                  | 12                | 1.56                              | 1.72                            |
| TPER19-481Y                    | 480                                                 | 1.5                                   | 7.8                  | 10                | 1.42                              | 15                              |
| <b>TPER25-30.5x27x18mm</b>     |                                                     |                                       |                      |                   |                                   |                                 |
| TPER25-161Y                    | 160                                                 | 1.5                                   | 1.4                  | 39                | 1.6                               | 0.4                             |
| TPER25-251Y                    | 250                                                 | 2.0                                   | 1.9                  | 32                | 2.0                               | 0.6                             |
| TPER25-351Y                    | 350                                                 | 3.0                                   | 3.5                  | 23                | 1.2                               | 1.5                             |
| TPER25-491Y                    | 490                                                 | 4.0                                   | 4.0                  | 21                | 1.1                               | 2                               |
| TPER25-641Y                    | 640                                                 | 6.0                                   | 5.6                  | 19                | 1.1                               | 2.5                             |
| TPER25-811Y                    | 810                                                 | 6.0                                   | 6.3                  | 18                | 1.1                               | 3.4                             |
| TPER25-102Y                    | 1000                                                | 6.0                                   | 7.0                  | 17                | 1.1                               | 4.3                             |
| TPER25-142Y                    | 1400                                                | 6.0                                   | 13.0                 | 12                | 0.95                              | 5.5                             |

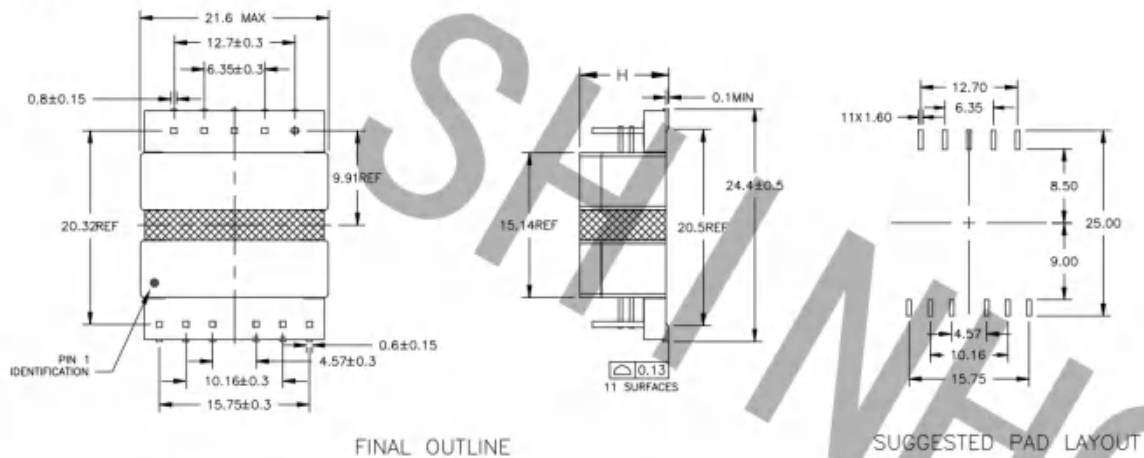
#### Note:

- All test data is referenced to 25°C ambient.
- TPER25 Operating temperature -40°C to +150°C.
- The rated current is based upon the temperature rise of the component and represents the rms current which will cause a typical temperature rise of 50°C with free air cooling.
- The temperature of the component (ambient plus temperature rise) must be within the stated operating temperature range.
- Shinhom complies to industry standard tape and reel specification EIA481.
- 1500Vrms for TPER25, 1000Vrms for TPER19.

Note: All specifications subject to change without notice.

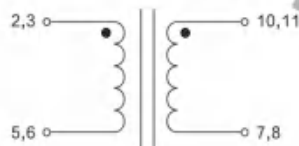
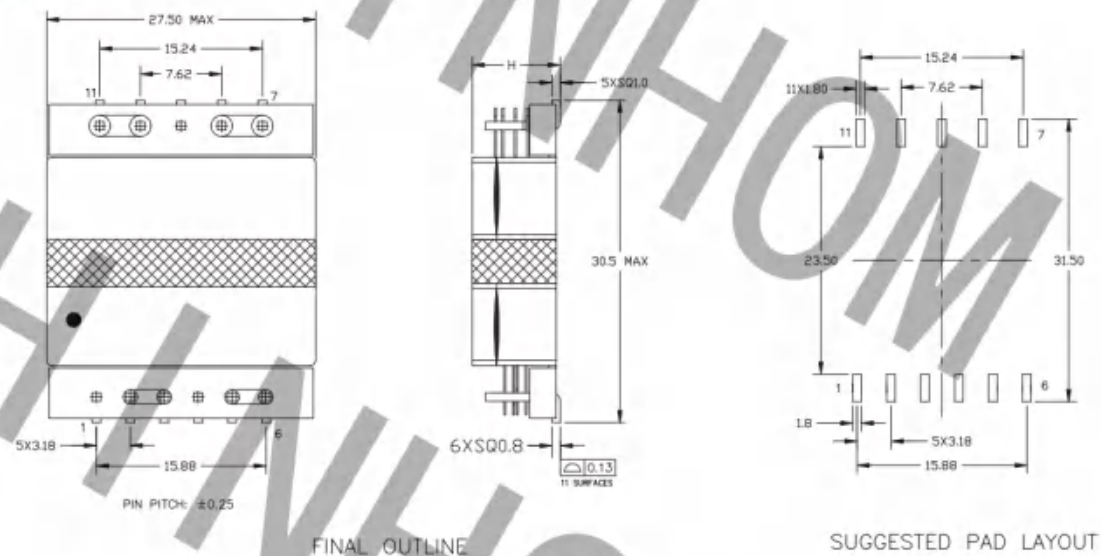
## TECHNICAL INFORMATION & WINDING

### TPER19



| Part No.    | Height | Weight |
|-------------|--------|--------|
| TPER19-121Y | 15.0   | 17     |
| TPER19-201Y | 15.0   | 18     |
| TPER19-281Y | 16.2   | 19     |
| TPER19-361Y | 17.1   | 20     |
| TPER19-481Y | 17.1   | 20     |

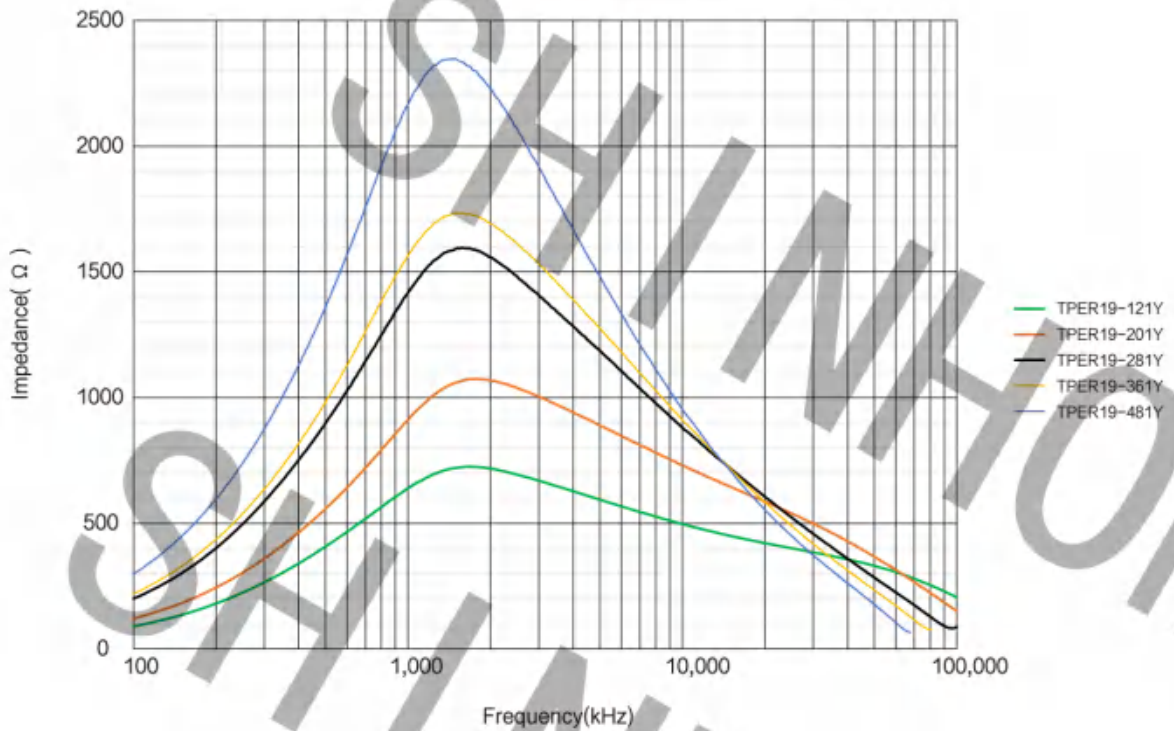
### TPER25



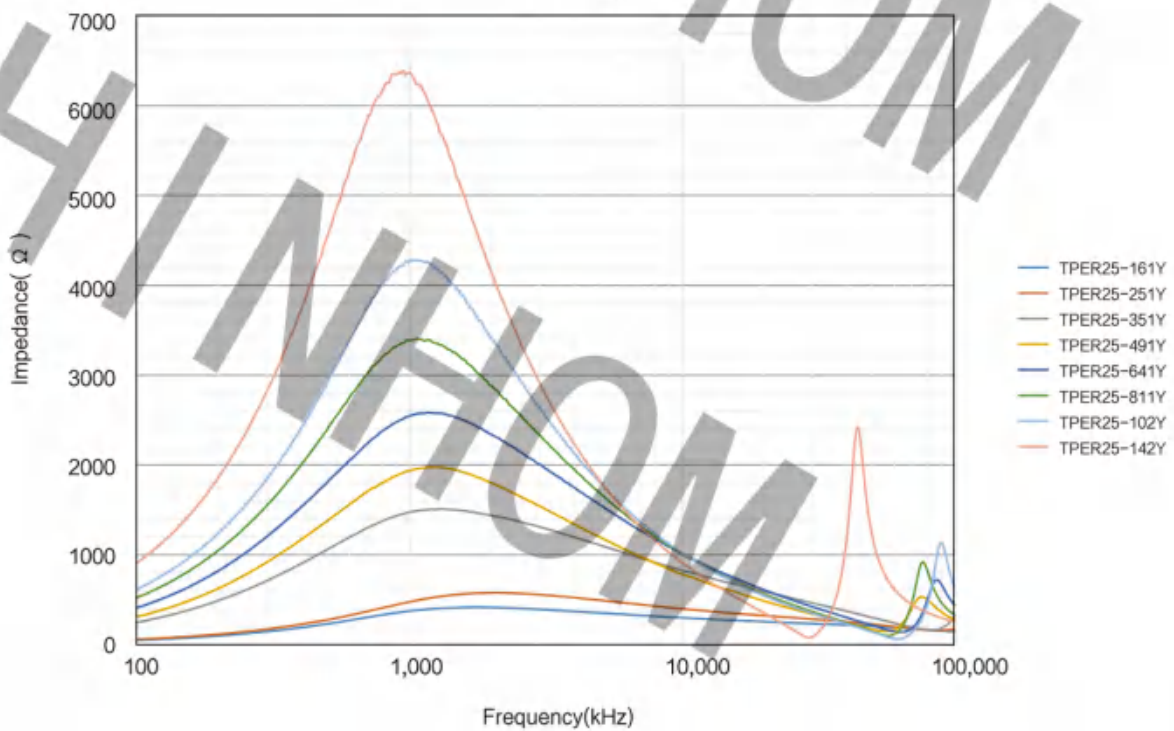
| Part No.    | Height | Weight |
|-------------|--------|--------|
| TPER25-161Y | 15.0   | 30     |
| TPER25-251Y | 15.0   | 31     |
| TPER25-351Y | 17.0   | 34     |
| TPER25-491Y | 18.0   | 36     |
| TPER25-641Y | 18.0   | 36     |
| TPER25-811Y | 18.0   | 37     |
| TPER25-102Y | 18.0   | 36     |
| TPER25-142Y | 18.0   | 35     |

## IMPEDANCE VS FREQUENCY

TPER19 impedance vs frequency



TPER25 impedance vs frequency





## SURFACE MOUNT DATA LINE EMC FILTER

# DLF SERIES

DLF-02,04,06,08



### FEATURES:

- Extended frequency range
- For noise reduction
- Common Mode up to 1GHz

### APPLICATIONS:

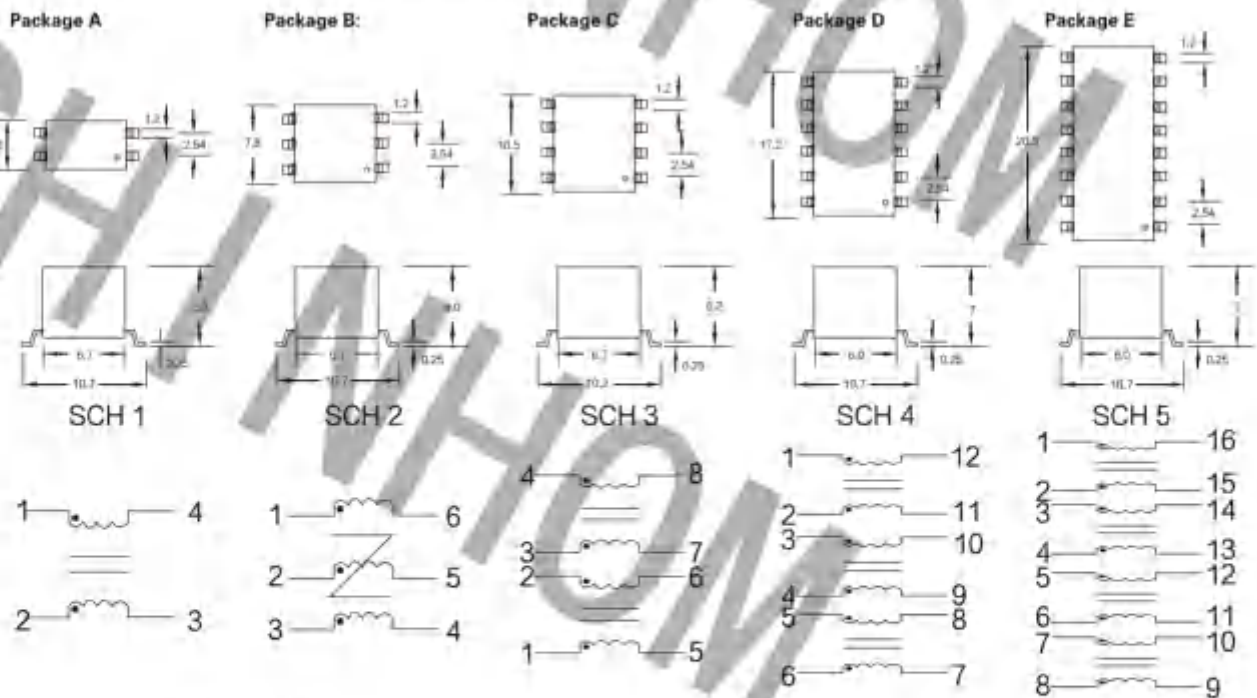
- Digital Communication EMI Suppression
- Data Line Filtering

## STANDARD SPECIFICATIONS

| Part Number | No. of Lines | Inductance-100KHz,0.1V (μH Min) | Common Mode Attenuation(dB Min) |      |       |       |       |        |        |        |      | DCR (Ω Max) | SCH   | Package |
|-------------|--------------|---------------------------------|---------------------------------|------|-------|-------|-------|--------|--------|--------|------|-------------|-------|---------|
|             |              |                                 | 100KHz                          | 1MHz | 10MHz | 30MHz | 50MHz | 100MHz | 300MHz | 500MHz | 1GHz |             |       |         |
| DLF-02-470  | 2            | 47                              | 11                              | 27   | 40    | 44    | 42    | 36     | 26     | 17     | -    | 0.40        | 1/2/3 | ABCDE   |
| DLF-04-101  | 4            | 100                             | 14                              | 33   | 44    | 48    | 49    | 44     | 34     | 29     | 20   | 0.60        | 1/2/3 | ABCDEF  |
| DLF-04-240  | 4            | 24                              | 8                               | 21   | 32    | 36    | 37    | 36     | 30     | 20     | -    | 0.25        | 1/2/3 | ABCDE   |
| DLF-04-330  | 4            | 33                              | 2                               | 14   | 20    | 19    | 19    | 18     | 14     | 8      | 3    | 0.20        | 1/2/3 | ABCDE   |
| DLF-06-210  | 6            | 21                              | 8                               | 19   | 28    | 34    | 35    | 36     | 34     | 29     | 1    | 0.35        | 1/2/3 | ABCDE   |
| DLF-06-660  | 6            | 66                              | 8                               | 22   | 29    | 30    | 30    | 29     | 24     | 19     | -    | 0.20        | 1/2/3 | ABCDE   |
| DLF-08-360  | 8            | 36                              | 8                               | 24   | 36    | 39    | 35    | 39     | 18     | 11     | -    | 0.35        | 4/5   | ABCDE   |
| DLF-08-630  | 8            | 66                              | 8                               | 24   | 30    | 39    | 27    | 24     | 16     | 11     | -    | 0.20        | 4/5   | ABCDE   |

Note:1. K=±10%,M=±20%

## TECHNICAL INFORMATION & PHYSICAL CHARACTERISTICS



- Inductance measured at 100KHz 0.1 VRMS.
- Soldering methods: Wave, Reflow
- Operating Temperature: 0°C to 70°C
- Storage Temperature: -55°C to 125°C

Note: All specifications subject to change without notice.

Dimension: mm



# 1:1:1:1 CMC Filters

Http://www.shinhot.com www.shinhottech.com

8 Pin DIL and 8 & 16 Pin SMD Packages

## DLF Series

### Features:

- CMC Filters for Data Communications and Telecom Applications
- Compatible with IEEE 802.3 and 802.5
- Hi-Pot 500Vrms
- Turns Ratio ( $\pm 3\%$ ): 1:1:1:1
- UL Recognized Components



### Single

| Part Number  | Package | PoE | OCL<br>( $\mu\text{H}$ typ.) | LL<br>( $\mu\text{H}$ max.) | Cw/w<br>(pF max.) | DCR<br>( $\Omega$ max.) | Impedance/Freq.<br>Curve (typ.) |
|--------------|---------|-----|------------------------------|-----------------------------|-------------------|-------------------------|---------------------------------|
| DLF-0086FLF  | DIL     | N   | 8                            | 0.10                        | 10                | 0.20                    | A                               |
| DLF-0166FLF  | DIL     | N   | 16                           | 0.15                        | 15                | 0.25                    | B                               |
| DLF-0246FLF  | DIL     | N   | 24                           | 0.20                        | 18                | 0.25                    | C                               |
| DLF-0366FLF  | DIL     | N   | 36                           | 0.25                        | 20                | 0.25                    | D                               |
| DLF-0246NTLF | NT      | N   | 24                           | 0.20                        | 18                | 0.40                    | C                               |
| DLF-0366NTLF | NT      | N   | 36                           | 0.20                        | 20                | 0.45                    | D                               |
| DLF-RP36NTLF | NT      | Y   | 36                           | 0.20                        | 20                | 0.40                    | C                               |

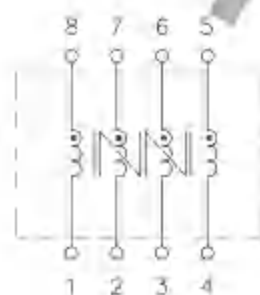
### Dual

| Part Number  | Package | PoE | OCL<br>( $\mu\text{H}$ typ.) | LL<br>( $\mu\text{H}$ max.) | Cw/w<br>(pF max.) | DCR<br>( $\Omega$ max.) | Impedance/Freq.<br>Curve (typ.) |
|--------------|---------|-----|------------------------------|-----------------------------|-------------------|-------------------------|---------------------------------|
| DLF-0346N1LF | N1      | N   | 35                           | 0.20                        | 25                | 0.30                    | C                               |
| DLF-0366N1LF | N1      | N   | 36                           | 0.20                        | 20                | 0.45                    | D                               |

#### Notes:

1. Pb-Free parts are RoHS 6/6 compliant.
2. Please contact the factory or representative for individual datasheets or additional information.
3. Parts on this datasheet can be used in  $-40$  to  $+85^\circ\text{C}$  applications.

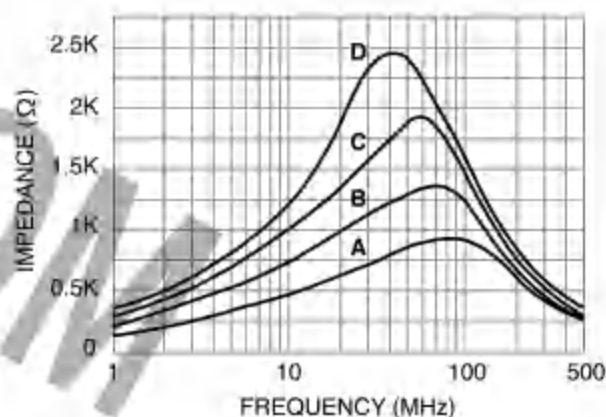
### F/NT Schematic



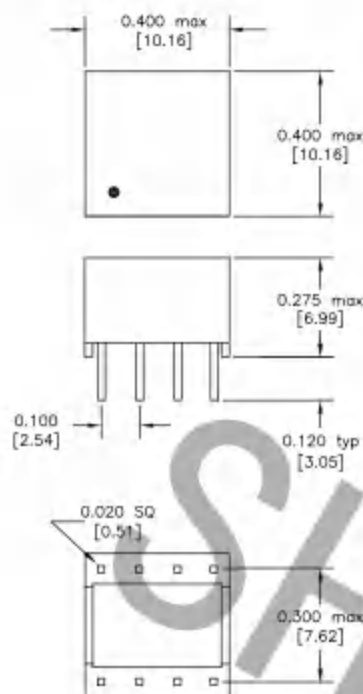
### N1 Schematic



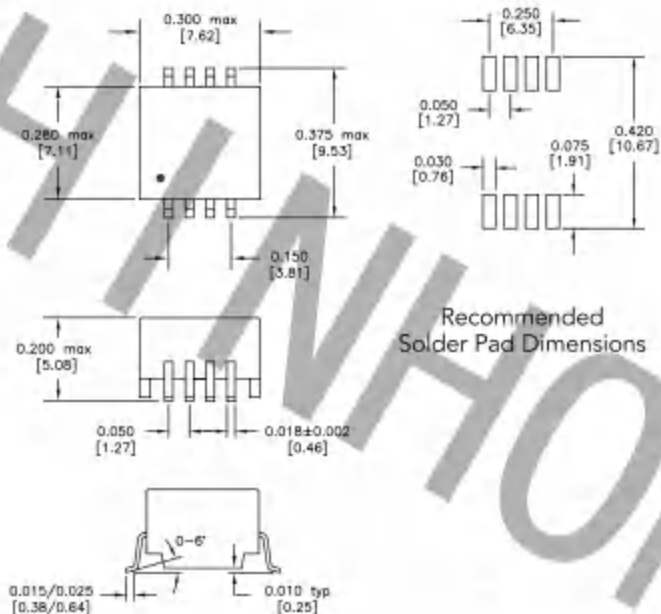
### Impedance/Freq. Curve



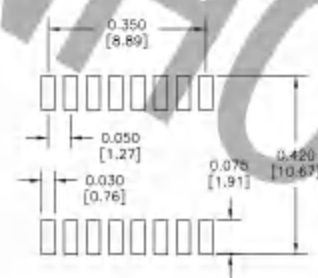
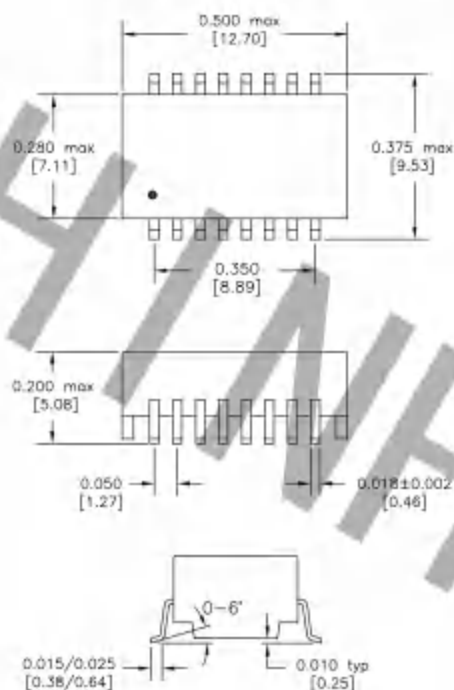
## F Package (DIL)



## NT Package (SMD)



## N1 Package (SMD)



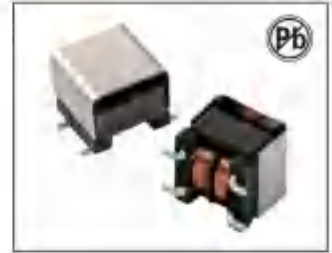
## Recommended Solder Pad Dimensions

Dimensions: inch [mm]  
Co-Planarity: 0.004 [0.10]

## COMMON MODE CHOKE COIL SLFE8.3 SERIES

### FEATURES:

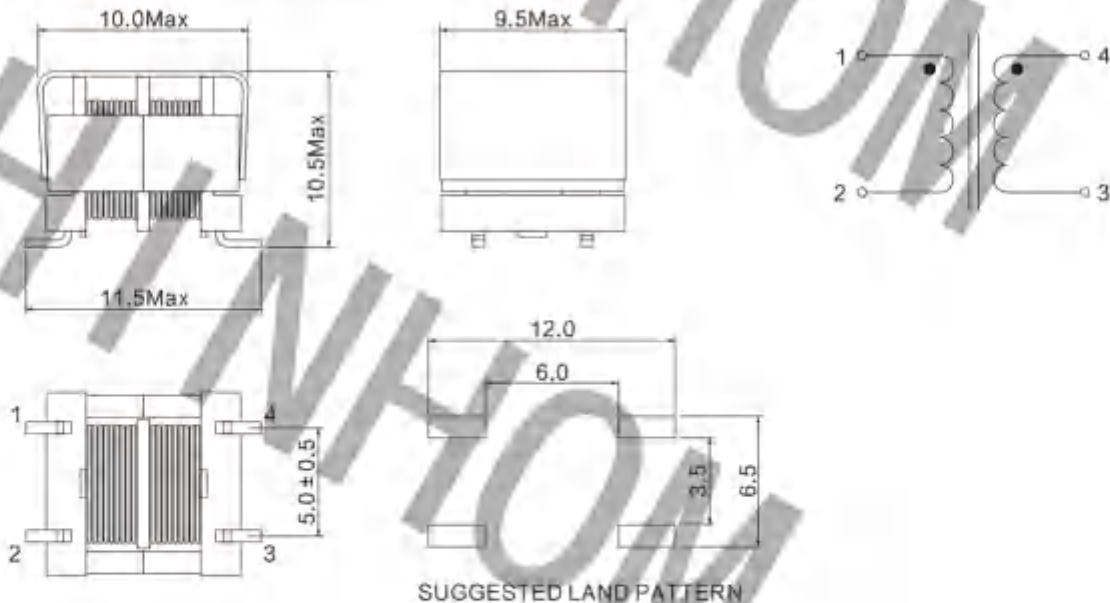
- Inductance range 1mH-50mH
- Footprint: 10X9.5X10.5mm Max
- Hi-pot Isolation: 1500 Vdc, 3sec
- Wire wound constructure common mode choke with best EMI suppression effect high impedance but very high rated current and low DCR.
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C



### ELECTRICAL CHARACTERISTICS@25°C

| Part Number  | Inductance (mH)+50%/-30%<br>N1=N2 | Test frequency | DCR (Ω)Max | IDC (A)Max |
|--------------|-----------------------------------|----------------|------------|------------|
| SLFE8.3-102Y | 1.0                               | 1.0KHz/0.3V    | 0.32       | 0.9        |
| SLFE8.3-502Y | 5.0                               | 1.0KHz/0.3V    | 0.68       | 0.3        |
| SLFE8.3-103Y | 10                                | 1.0KHz/0.3V    | 0.77       | 0.2        |
| SLFE8.3-153Y | 15                                | 1.0KHz/0.3V    | 0.82       | 0.2        |
| SLFE8.3-203Y | 20                                | 1.0KHz/0.3V    | 1.36       | 0.18       |
| SLFE8.3-253Y | 25                                | 1.0KHz/0.3V    | 1.54       | 0.18       |
| SLFE8.3-303Y | 30                                | 1.0KHz/0.3V    | 2.4        | 0.14       |
| SLFE8.3-353Y | 35                                | 1.0KHz/0.3V    | 2.6        | 0.14       |
| SLFE8.3-403Y | 40                                | 1.0KHz/0.3V    | 3.4        | 0.1        |
| SLFE8.3-503Y | 50                                | 1.0KHz/0.3V    | 4.8        | 0.06       |

### PHYSICAL CHARACTERISTICS & WINDING



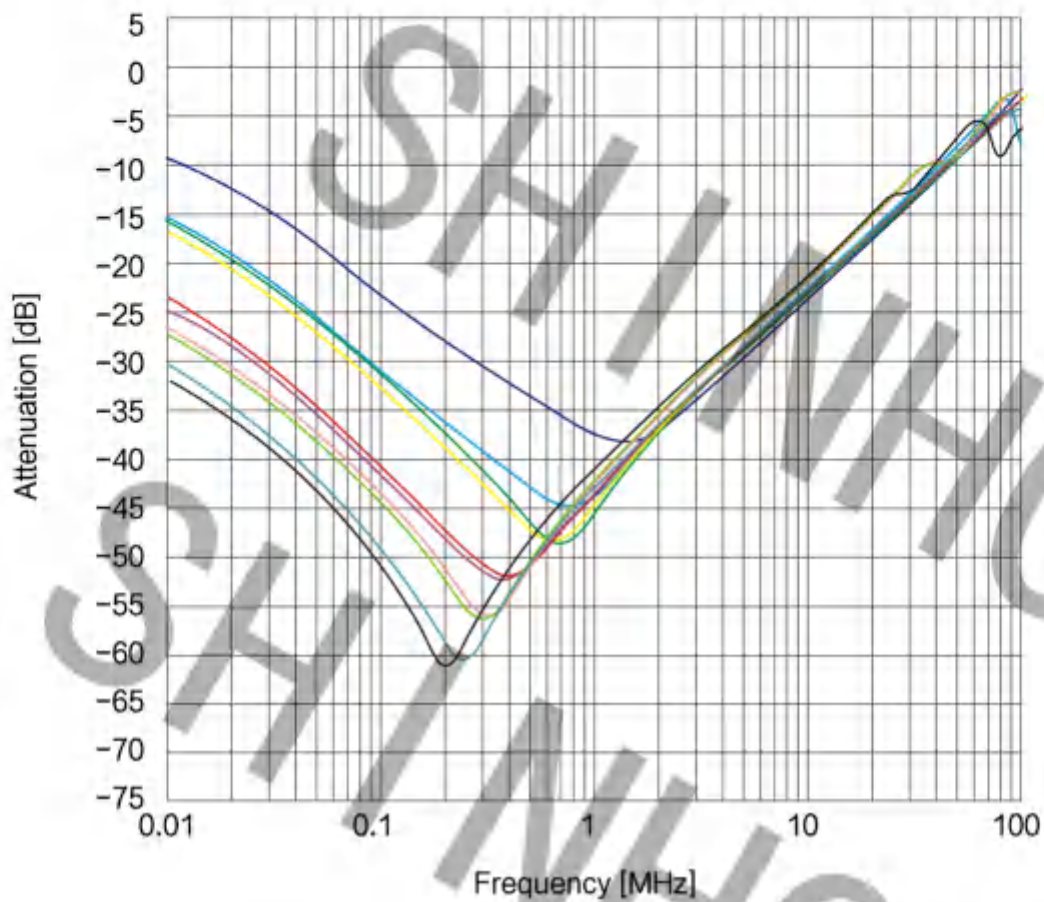
### Note:

- Test with HP4284A or E5071C
- Operating temperature: -40°C to +105°C
- Storage Temperature: -40°C to +105°C
- Resistance to soldering heat: 260°C for 10 seconds

Note: All specifications subject to change without notice.



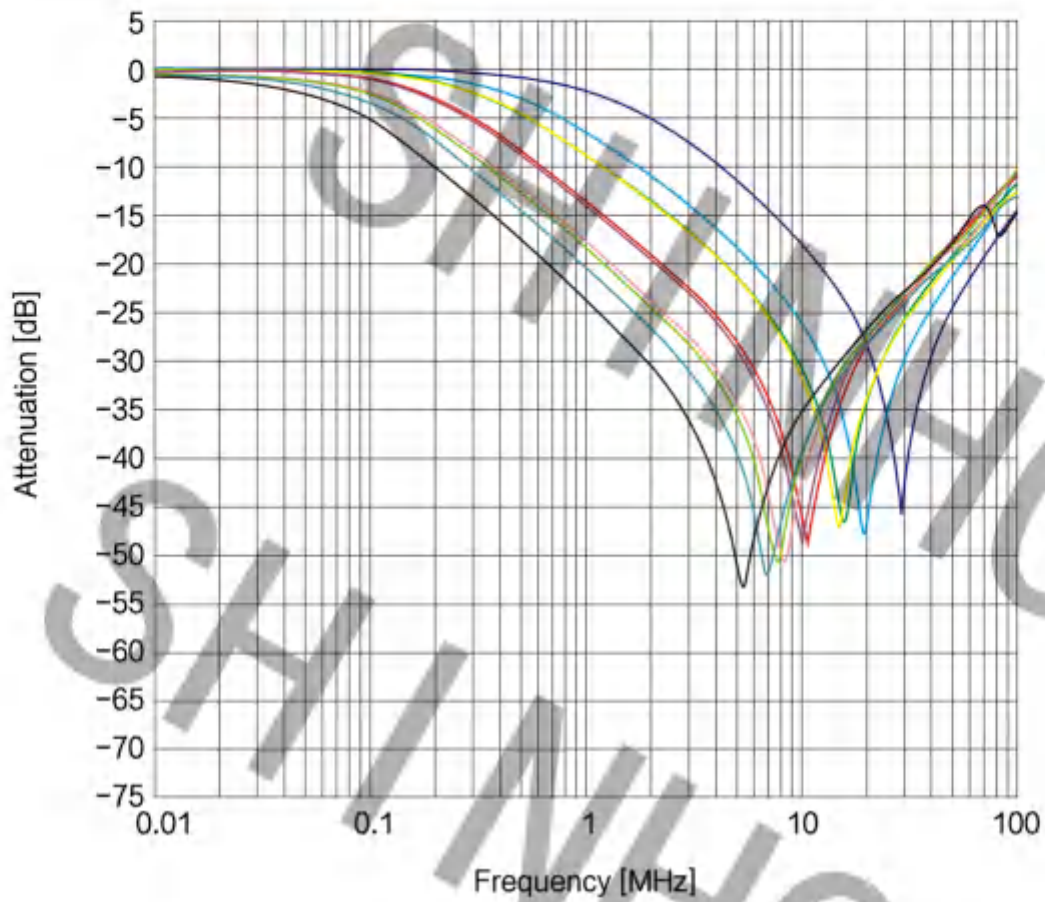
## ATTENUATION & FREQUENCY(COMMON MODE)



- SLFE8.3-102Y
- SLFE8.3-502Y
- SLFE8.3-103Y
- SLFE8.3-153Y
- SLFE8.3-203Y
- SLFE8.3-253Y
- SLFE8.3-303Y
- SLFE8.3-353Y
- SLFE8.3-403Y
- SLFE8.3-503Y



# ATTENUATION & FREQUENCY(DIFFERENTIAL MODE)



- SLFE8.3-102Y
- SLFE8.3-502Y
- SLFE8.3-103Y
- SLFE8.3-153Y
- SLFE8.3-203Y
- SLFE8.3-253Y
- SLFE8.3-303Y
- SLFE8.3-353Y
- SLFE8.3-403Y
- SLFE8.3-503Y