FERRITE EMI DISKS AND PLATES

Ferrite Disks and Plates provide a simple, cost-effective solution for radiated and inductively-coupled electromagnetic interference. After the PC board soldering process, a ferrite disk or plate can be installed directly on the source of EMI (such as active devices or unwanted antennas).

Applications:

• Ferrite disks and plates can be utilized either as inductively-coupled components or EMI shields on PC board components and traces. (Inductive coupling occurs when the ferrite affects the conducted wave form leaving the active component. The rise time of the wave form is effectively slowed by the ferrite, and the overshoot and associated ringing are attenuated. EMI shielding occurs when the ferrite absorbs the radiated emissions from active components, effectively protecting other boards or components in the vicinity from radiated contamination).
• Can be used to locate unwanted EMI antennas.
• Flat Flex & Ribbon cables.
• Can also provide retrofit, auxiliary EMI attenuation.

Fig1

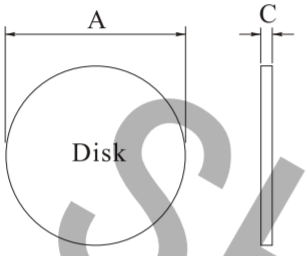
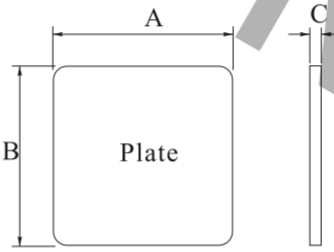


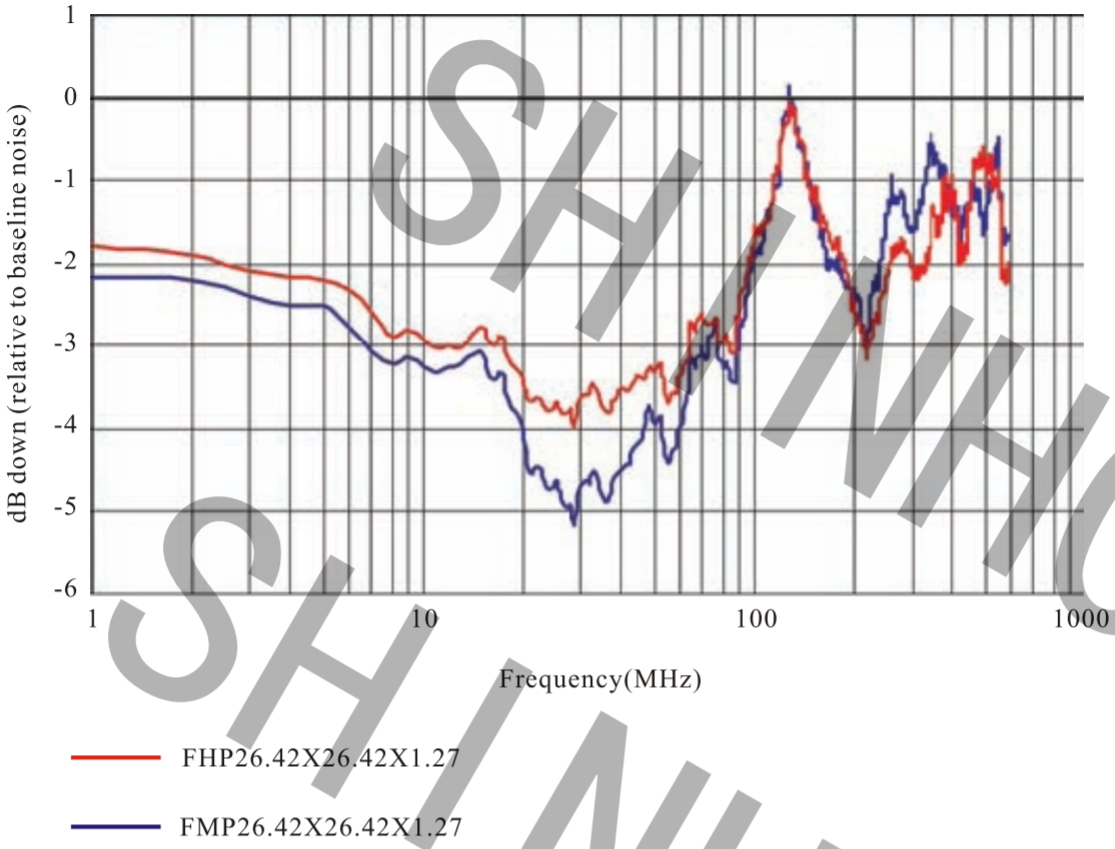
Fig2



Part No.	A(mm)	B(mm)	C(mm)	Fig
FHD20.0X1.27	19.99		1.27	1
FHD20.0X1.91	19.99		1.91	1
FHD35.56X1.91	35.56		1.91	1
FHD35.56X2.54	35.56		2.54	1
FMD16.51X1.27	16.51		1.27	1
FMD20.0X1.27	20.0		1.27	1
FMD20.0X1.91	20.0		1.91	1
FMD35.56X1.91	35.56		1.91	1
FMD35.56X2.54	35.56		2.54	1
FHP26.42X26.42X1.27	26.42	26.42	1.27	2
FHP26.42X26.42X1.91	26.42	26.42	1.91	2
FMP8.0X8.0X2.0	8.0	8.0	2.0	2
FMP26.42X8.89X1.27	26.42	8.89	1.27	2
FMP11.0X11.0X1.96	11.0	11.0	1.96	2
FMP13.0X13.0X2.0	13.0	13.0	2.0	2
FMP21.0X15.0X2.0	21.0	15.0	2.0	2
FMP15.0X15.0X2.0	15.0	15.0	2.0	2
FMP19.3X19.3X1.27	19.3	19.3	1.27	2
FMP26.42X26.42X1.27	26.42	26.42	1.27	2
FMP26.42X26.42X1.91	26.42	26.42	1.91	2
FMP26.42X26.42X2.25	26.42	26.42	2.25	2
FMP38.0X38.0X2.0	38.0	38.0	2.0	2

SHINHOM ELECTRONICS ENTERPRISE CO.,LTD. No.8YanTa Northern Road Zip:710054 Tel:+86-29-87851838 Fax:+86-29-87851840

FERRITE EMI DISKS AND PLATES



Example Application Graph Explanation:

The zero line on the graph represents the base line noise recorded for an unprotected microprocessor. The curves (dB down) represent the performance of the Shinhom' ferrite plates relative to the baseline. The addition of the ferrite plates to the top of the processor in this specific application exhibits up to a 5 dB EMI reduction relative to the unprotected part. In the example application graph above, the ferrite plate FMP1040-100 exhibits up to a 1 dB advantage over the FHP1040-100 from 1-100 MHz, while the FHP1040-100 exhibits a 0.5 dB advantage between 200 and 400 MHz. Performance can vary with different sizes, materials, processors and applications.

F TYPE ABSORBER CORES & FBP TYPE CORES

F TYPE ABSORBER CORES (MATERIALS): R2KF

Dimensions & Effective parameter

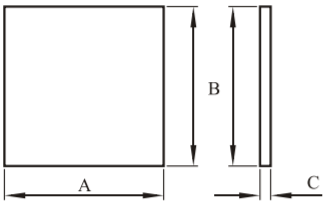


Fig1

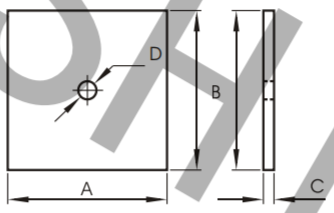


Fig2

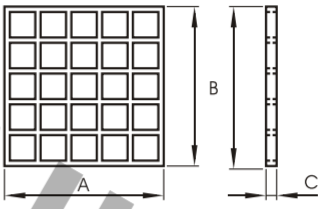
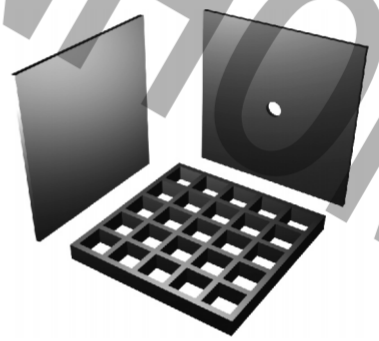


Fig3

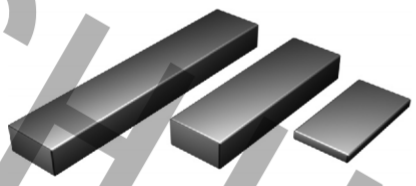
ABSORBERS

CORES TYPE	Dimensions(mm)					
	A	B	C	D	Weight (set/g)	Fig
F100×100×6.7	100±0.3	100±0.3	6.7±0.3		330	1
F100×100×6.7H	100±0.3	100±0.3	6.7±0.3	10±0.1	315	2
F101×101×19.0	101±0.3	101±0.3	19.0±0.3		242	3
F110×110×6.0	100±0.3	100±0.3	6.0±0.3		300	1
F113×112×6.0	113±1.0	112±1.0	6.0±0.4		380	1



FBP TYPE CORES (MATERIALS): R2KF, P2, P3

Dimensions & Effective parameter



CORES TYPE	Dimensions(mm)			Weight (g)
	A	B	C	
FBP-150×25×25	150.0±0.3	25.0±0.2	25.0±0.2	440
FBP-150×15×30	150.0±0.3	15.0±0.2	30.0±0.2	317
FBP-110×15×35	110.0±0.3	15.0±0.2	30.0±0.2	232
FBP-100×15×30	100.0±0.3	15.0±0.2	30.0±0.2	211
FBP-60×30×5	60.0±1.5	30.75±0.75	5.0±1.5	42
FBP-60×30×6.5	60.0±1.5	30.75±0.75	6.75±0.25	55
FBP-60×30×5.75	60.0±1.5	30.75±0.75	6.75±0.25	49
FBP-60×15×4.6	60.0±1.5	15.0±0.3	4.6±0.3	20
FBP-60×15×4.9	60.0±1.5	15.0±0.3	4.9±0.3	21

SHINHOM ELECTRONICS ENTERPRISE CO.,LTD. No.100YanTa Northern Road Zip:710054 Tel:+86-29-87851838 Fax:+86-29-87851840

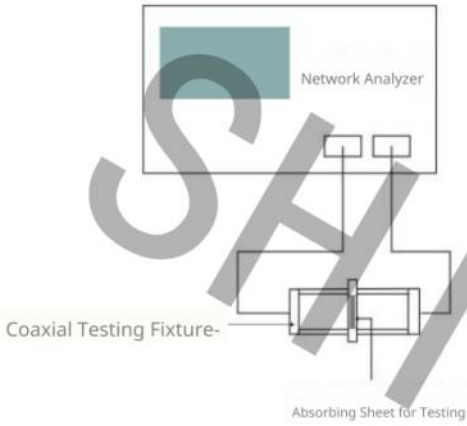
CONTENTS

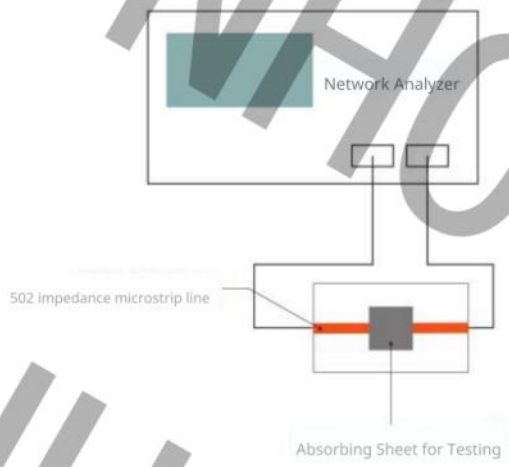
Absorbing material - XB series

Product features

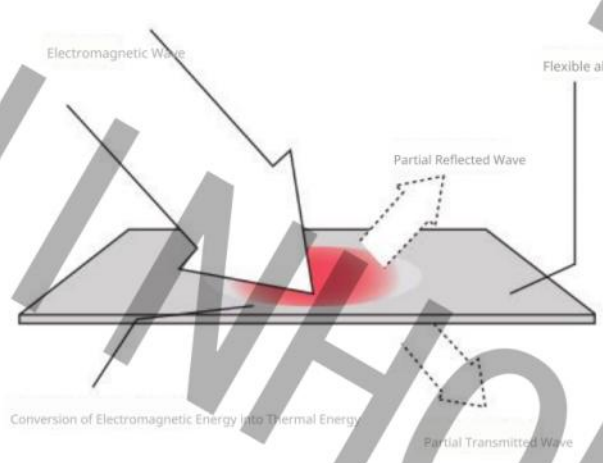
- Thin, flexible high-performance sheets effectively suppress noise;
- Highly insulated with good flexibility;
- High-performance absorbers achieve superior magnetic permeability through high fillingensity;
- Complies with environmental requirements such as halogen-free and RoHS

Testing methods and standards

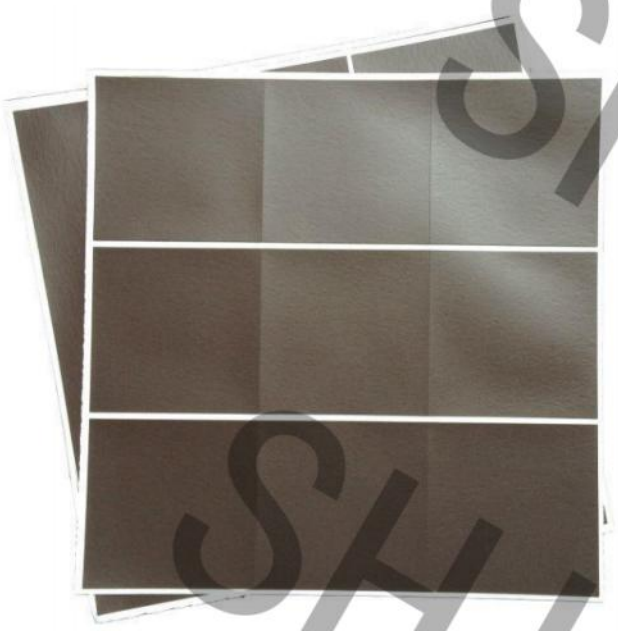




Absorption principle schematic diagram



HF-CB000 Series



Product Structure

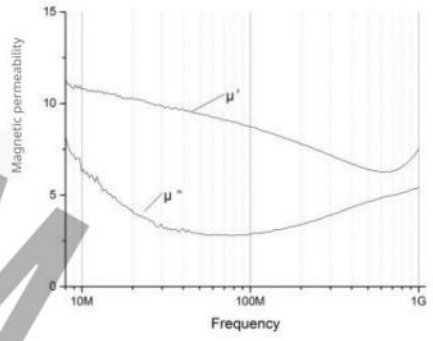
Product Applications

- Smart payment mobile phones, POS machines
- Various smart cards, RFID radio frequency cards, RFID readers, card readers, various smart access controls
- WIFI , antennas, etc.

Performance Parameters

Model	HF - CB000	Test Method (Description)
Material	Soft Magnetic Alloy Powder + Resin	N/A
Magnetic Permeability μ′	15	Analyzer
Substrate Thickness(mm)	0.20 ,0.30 ,0.40 ,0.50 ,1.0	Caliper
Operating Temperature	- 40 ℃ - 85 ℃	Long-Term
Operating Frequency	Rfid:125k/134K/13.56MHz EMI:10MHz - 18GHz	------
ROHS	Complies with ROHS and halogen-free requirements	
Standard size	150- 300mm roll material, can add shielding layer, etc., accepts customer cu tomization	

Permeability Curve



HF-4XB000 series

Product Structure

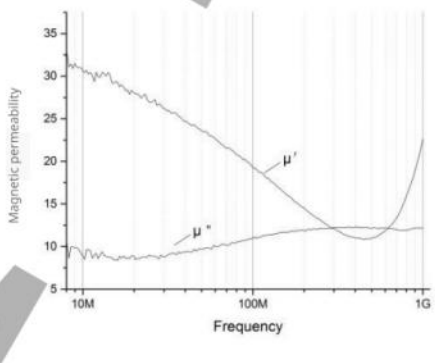
Product Applications

- Smart payment mobile, POS machine
- Various smart cards, RFID radio frequency cards, RFID readers, card readers, various smart access controls
- WIFI, antennas, etc.

Performance Parameters

Model	HF-4XB000	Test Method (Description)
Material	Soft Magnetic Alloy Powder + Resin	N/A
Magnetic Permeability μ′	40±20%	Analyzer
substrate thickness (mm)	0.10, 0.15, 0.20, 0.25, 0.30 ,0.50, 1.0	Caliper
Operating Temperature	-40 ℃ -85 ℃	Long-Term
Operating Frequency	Rfid:125k/134K/13.56MHz EMI:10MHz - 18GHz	——
ROHS	Complies with ROHS and halogen-free requirements	
Standard size	150 - 300mm roll material, can add shielding layer, etc., accepts customer cu tomization	

Permeability Curve



HF-5XB000 series

Product Structure

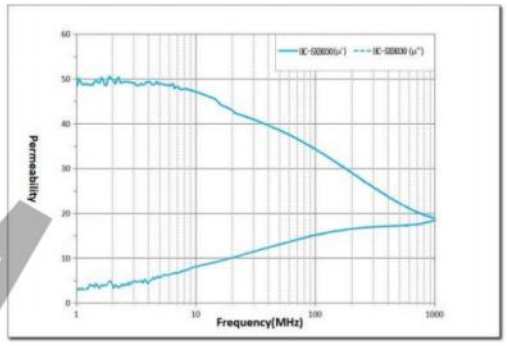
Product Applications

- Smart payment mobile phones, POS machines
- Various smart cards, RFID radio frequency cards, RFID readers, card readers, various smart access controls
- WIFI , antennas, etc.

Performance Parameters

Model	HF - 5XB000	Test Method (Description)
Material	Soft Magnetic Alloy Powder + Resin	N/A
Magnetic Permeability μ′	50±20%	Analyzer
Substrate Thickness(mm)	0.15 , 0.20 , 0.30 , 0.50 , 1.0	Caliper
Operating Temperature	- 40 ℃ - 85 ℃	Long-Term
Operating Frequency	Rfid:125k/134K/13.56MHz EMI:10MHz - 18GHz	
ROHS	Complies with ROHS and halogen-free requirements	
Standard size	150- 300mm roll material, can add shielding layer, etc., accepts customer cu tomization	

Permeability Curve



HF-12XB000 series

Product Structure

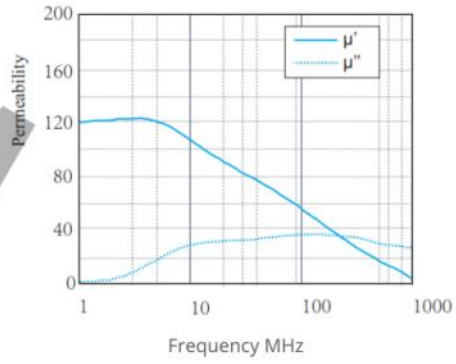
Product Applications

- Smart payment mobile phones, POS machines
- Various smart cards, RFID radio frequency cards, RFID readers, card readers, various smart access controls
- WIFI , antennas, etc.

Performance Parameters

Model	HF - 12XB000	Test Method (Description)
Material	Soft Magnetic Alloy Powder + Resin	N/A
Magnetic Permeability μ′	120±20%	Analyzer
Substrate Thickness(mm)	0.15 , 0.20 , 0.30 , 0.50	Caliper
Operating Temperature	- 40 ℃ - 120℃	Long-Term
Operating Frequency	Rfid:125k/134K/13.56MHz EMI:10MHz - 18GHz	----
ROHS	Complies with ROHS and halogen-free requirements	
Standard size	150- 300mm roll material, can add shielding layer, etc., accepts customer cu tomization	

Permeability Curve



HF-15XB000 series

Product Structure

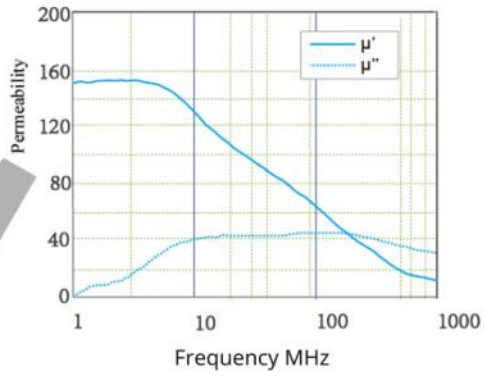
Product Applications

- Smart payment mobile phones, POS machines
- Various smart cards, RFID radio frequency cards, RFID readers, card readers, various smart access controls
- WIFI , antennas, etc.

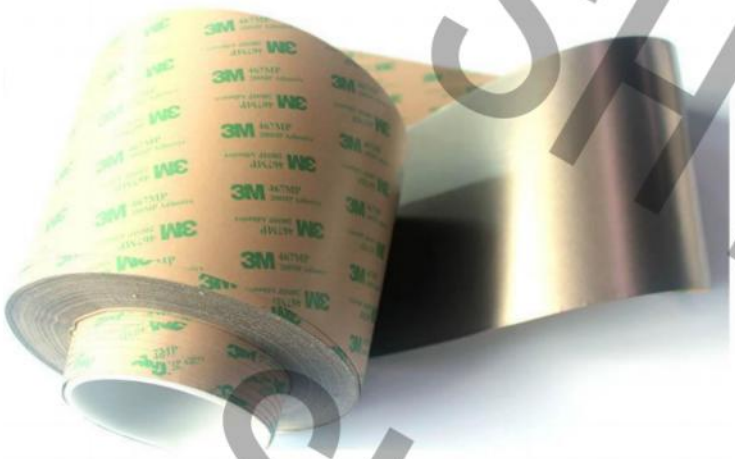
Performance Parameters

Model	HF - 15XB000	Test Method (Description)
Material	Soft Magnetic Alloy Powder + Resin	N/A
Magnetic Permeability μ′	150±20%	Analyzer
Substrate Thickness(mm)	0.05 , 0.10 , 0.20, 0.30	Caliper
Operating Temperature	-40℃ - 120℃	Long-Term
Operating Frequency	Rfid:125k/134K/13.56MHz EMI:10MHz - 18GHz	
ROHS	Complies with ROHS and halogen-free requirements	
Standard size	150- 300mm roll material, can add shielding layer, etc., accepts customer cu tomization	

Permeability Curve



HF-18XB000 Series



Product Structure

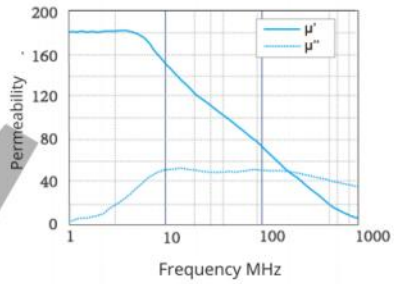
Product Applications

- Smart payment mobile phones, POS machines
- Various smart cards, RFID radio frequency cards, RFID readers, card readers, various smart access controls
- WIFI , antennas, etc.

Performance Parameters

Model	HF - 18XB000	Test Method (Description)
Material	Soft Magnetic Alloy Powder + Resin	N/A
Magnetic Permeability μ′	180±20%	Analyzer
Substrate Thickness(mm)	0.05 , 0.10 , 0.20	Caliper
Operating Temperature	- 40 ℃ - 120 ℃	Long-Term
Operating Frequency	Rfid:125k/134K/13.56MHz EMI:10MHz - 18GHz	
ROHS	Complies with ROHS and halogen-free requirements	
Standard size	150- 300mm roll material, can add shielding layer, etc., accepts customer cu tomization	

Permeability Curve



HF-25XB000 Series

Product Structure

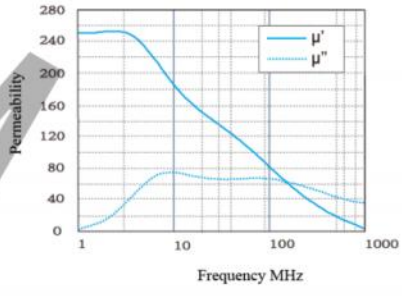
Product Applications

- Smart payment mobile phones, POS machines
- Various smart cards, RFID radio frequency cards, RFID readers, card readers, various smart access controls
- WIFI , antennas, etc.

Performance Parameters

Model	HF - 25XB000	Test Method (Description)
Material	Soft Magnetic Alloy Powder + Resin	N/A
Magnetic Permeability μ′	250±20%	Analyzer
Substrate Thickness(mm)	0.05 , 0.10 , 0.20	Caliper
Operating Temperature	- 40 ℃ - 120 ℃	Long-Term
Operating Frequency	Rfid:125k/134K/13.56MHz EMI:10MHz - 18GHz	------
ROHS	Complies with ROHS and halogen-free requirements	
Standard size	150- 300mm roll material, can add shielding layer, etc., accepts customer cu tomization	

Permeability Curve

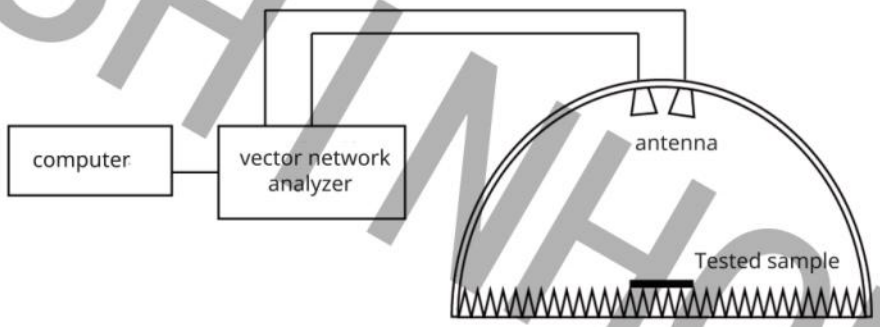


Absorbing material-HB series

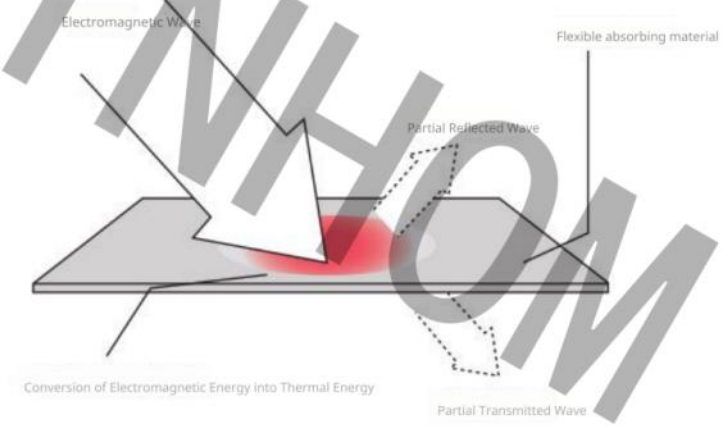
Product features

- Applicable frequency 1GHz-40GHz
- Made of rubber-flled absorbing agent
- Thin and soft, can be installed in small spaces
- The product is an insulating material and needs to be bonded or pressed onto the metal base plate to achieven good results.
- Has good tolerance and can be used in outdoor, humid, and salt spray environments.
- Comply with environmental protection requirements such as RoHs

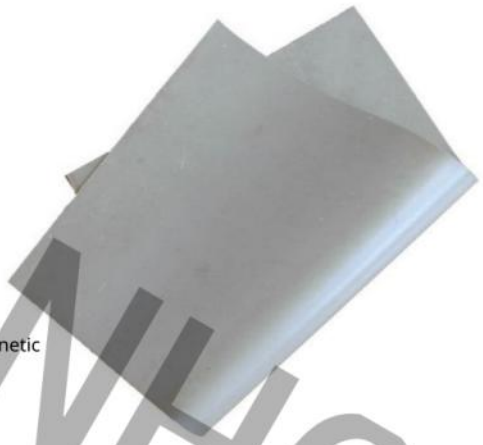
Testing methods and standards



Absorption principle schematic diagram



HF-HB100



Product Applications

- Suitable for high frequencyt 1GHz-8GHz
- Suppress electromagnetic wave interference, improve antenna direction, improve n radar direction finding and ranging accuracy
- Prevent electromagnetic interference from microwave devices and equipment, electromagnetic Wave radiation, etc. WIFt, antenna, etc.

Performance Parameters

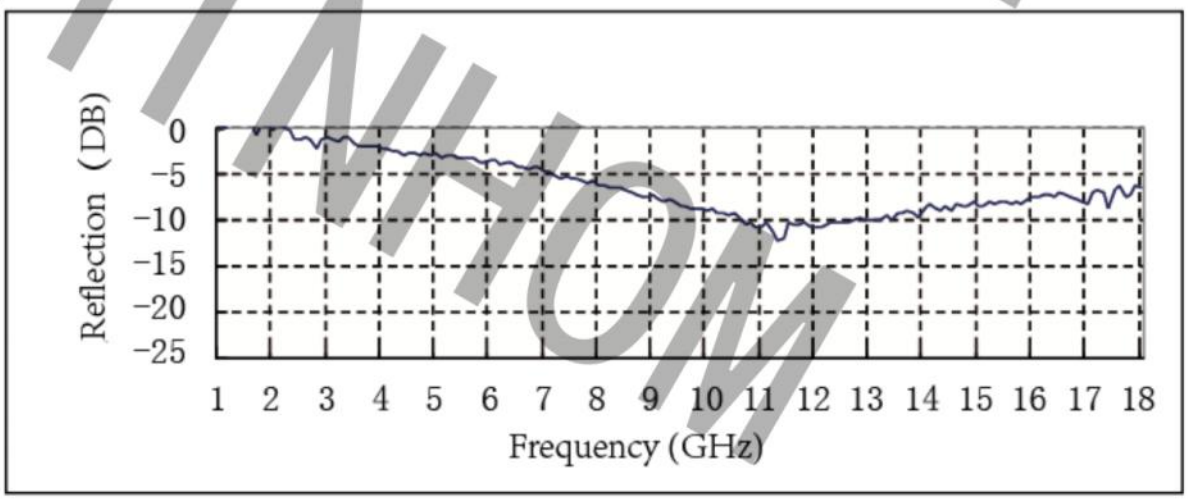
Characteristics	Representational Value	Testing Method （Description）
Material	Rubber + Absorbing Agent	N/A
Color	Gray	Visual estimate
Reflectivity	>12db	Test equipment
Substrate thickness	1.0mm±0.15	Caliper measurement
Frequency of use	1GHz~8GHz	Representational Value
Use temperature	-55~120℃	long time
RoHS	conform to RoHS	

Remarks:

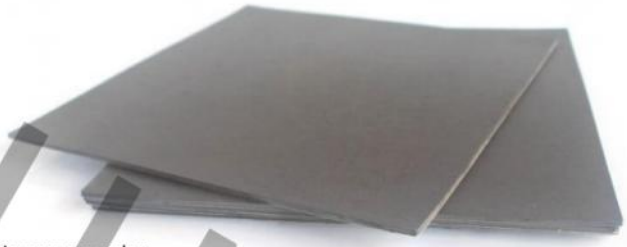
Can be backed with self-adhesive

according to customer's requirements. Can be punched and cut according to customer's requirements.

Absorption Curve



HF-HB200



Product Applications

- Suitable for high frequencyt 1GHz-6GHz
- Suppress electromagnetic wave interference, improve antenna direction, improve n radar direction finding and ranging accuracy
- Prevent electromagnetic interference from microwave devices and equipment, electromagnetic Wave radiation, etc. WIFt, antenna, etc.

Performance Parameters

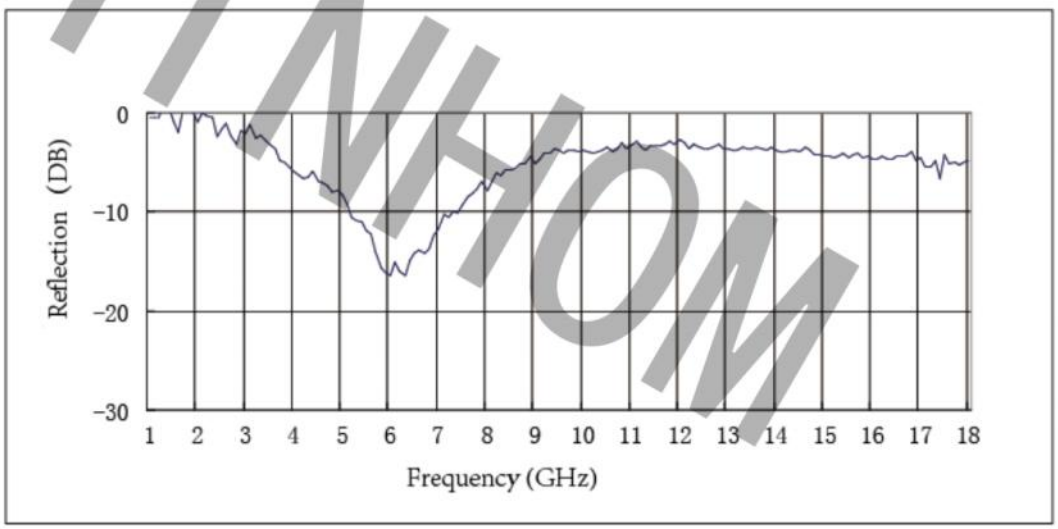
Characteristics	Representational Value	Testing Method （Description）
Material	Rubber + Absorbing Agent	N/A
Color	Gray	Visual estimate
Reflectivity	>6db	Test equipment
Substrate thickness	2.0mm±0.15	Caliper measurement
Frequency of use	1GHz~6GHz	Representational Value
Use temperature	-55~120℃	long time
RoHS	conform to RoHS	

Remarks:

Can be backed with self-adhesive

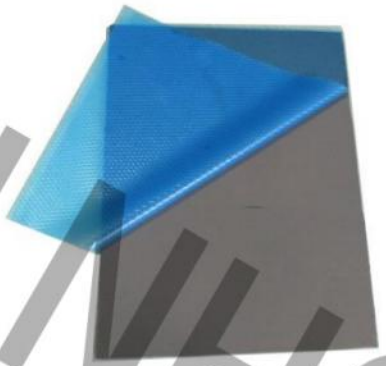
according to customer's requirements. Can be punched and cut according to customer's requirements.

Absorption Curve



Product Overview

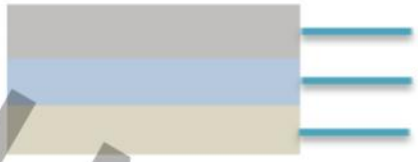
Thermal conductive materials wave materials are based on electromagnetic wave sup pression and absorption,changing the hardness of the product itself, increasing thermal cond uctivity, and can be directly appliedbetween metal casings, effectively dissipating heat. At the same time, they have electromagnetic shieldingand electromagnetic interference absorption performance, providing good solutions for electronic communication products in blocking the rmal transmission inter erence,absorbing radiation interference, conducting thermal energy, and electromagnetic shielding.



Product features

- Good thermal conductivity
- Flexibility, high compressibility
- Self-adhesive
- Easy to cut, easy to use
- Good insulation properties

Product Structure



Product Applications

- FPC 、 IC 、 CPU 、 MOS 、 LED
- Laptops, heating components, routers, computers, televisions, etc.
- Optical communication, power amplifier systems, etc.

Performance Parameters

Item	Parameters	Testing Standards
Color	Dark gray	Visual estimate
Thickness mm	0.5 ~ 3.0	N/A
Hardness (Shore C)	40(±5)	ASTM D2240
Density (g/cc)	3.2(±0.25)	ASTM D792
Temperature Resistance (℃)	-45 ~ 150	N/A
Permeability μ' (@1MHz)	15±5	N/A
Breakdown voltage KV (@1mm)	≥ 8	ASTM D149
Volume resistivity (Ω.cm)	$\geqslant 10^8$	ASTM D257
Thermal conductivity (W/m.k)	2.0	ASTM D5470
Flame retardant level	V0	UL -94
Raw material size	210*295mm	

Product features

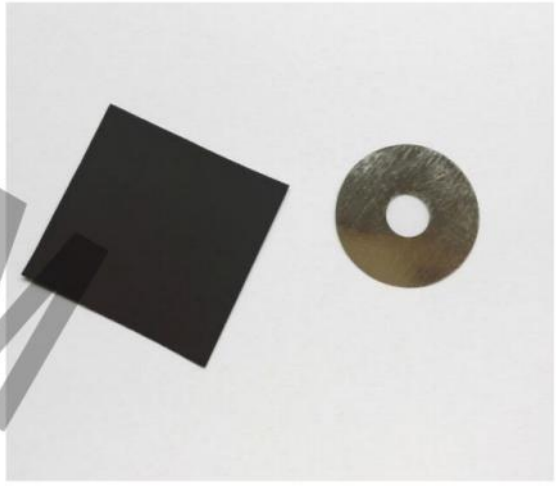
- Nano materials are magnetic materials formed through special processes that create very small crystal grain structures,
- with grain sizes of only 10 - 20 nanometers;
- Nano materials possess characteristics such as high saturation magnetic induction strength, high permeability, and low losses.
- At the same time, it has good stability;
- As a soft magnetic material, it has the best performance-to-price ratio
- Lightweight and soft, suitable for narrow spaces
- Meets RoHs and other environmental requirements

Product Applications

- RFID/NFC (Near Field Communication) anti-metal
- Wireless charger
- EMIsuppresses electromagnetic interference
- Magnetic isolation prevents sleep magnet sheets
- Lightweight and soft, suitable for narrow spaces

Performance Parameters

Characteristics	Representational Value
Saturation magnetic flux density Bs（T）	1.25
Initial permeability μ'	≥10^4
Curie temperature Tc (℃)	570
Crystallization temperature Tx (℃)	515
Resistivity (μΩ *cm)	2.85



Product features

- High magnetic permeability, low loss;
- Lightweight, thin, flexible, saving space for mobile structure and antenna;
- Effectively suppress electromagnetic wave interference, altering magnetic flux paths to avoid interference with other components
- Effective prevention of resonance and suppression of coupling phenomena
- Complies with RoHs and other environmental protection requirements

Product Applications

- RFID/NFC (Near Field Communication) anti-metal
- Wireless charger
- EMIsuppresses electromagnetic interference

Performance Parameters

Characteristics		Representational Value	Testing Method (Description)
Material		Nickel-zinc ferrite	N/A
Magnetic permeability (13.56MHz)	μ′	150	Test equipment
	μ"	3	Test equipment
Thickness (mm)		0.08, 0.1, 0.2	Caliper
Operating Temperature		-40℃ ---- 85℃	long time
Frequency of use		13.56MHz	Representational Value
Standard Size		125*125mm Sheet	
RoHS		Complies with RoHS	

Absorption Curve