

Amorphous Magnetic Shielding Sheet Parts SS/DS series

Our magnetic shielding parts have higher shielding effect and permeability than magnetic powder sheet in the low frequency range of some ten to hundreds kHz. They are applied to shielding parts to absorb leakage of magnetic flux from coils and magnetic components. And they can make themselves into thin sheet-like cores of inductors and transformers because they have high permeability.

1. Features

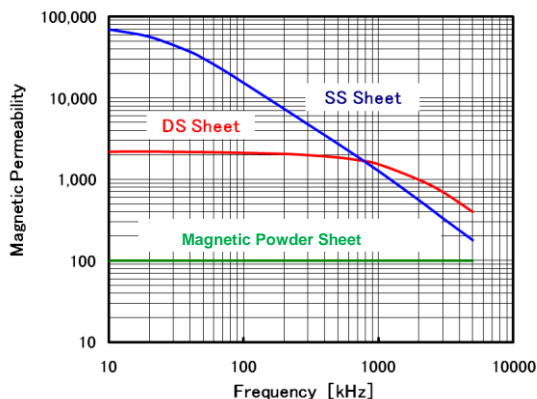
- We have two types of shielding parts; one is high permeability type (SS series) and the other is high Q factor type (DS series).
 - ◆ SS series have an excellent shielding effect as they have high relative permeability of 18,000 at 100 kHz.
 - ◆ DS series have an excellent Q factor as they have a low loss characteristic and have a relative permeability of 2,000 at around some hundreds kHz.
- Both types use 16 μm thin amorphous magnetic material. PET protective films are applied to their both sides having adhesive layers between them. The sheets are as thin as 0.09 mm.
- We can offer our sheets in many shapes up to 46 mm by maximum width other than rectangular sheet
- We can deliver them mounted on a carrier tape. Shielding parts with other type of laminated structures are also available.
- Co based Amorphous's hardly ever rusts unlike Fe based materials and it is suitable for mounting on the board of precision machines.



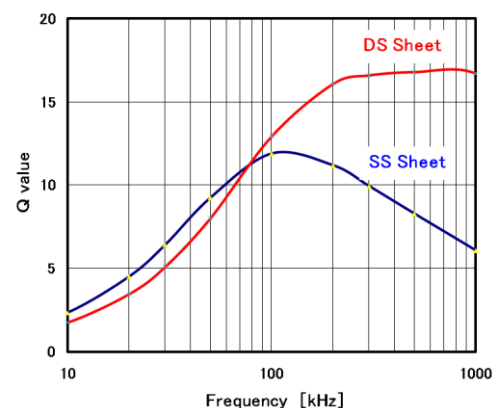
2. Applications

- Magnetic shielding for low-frequency devices
 - Wireless Power Transmitter, smart keys and low frequency radio devices including wave clocks, RFID
- Cores for planer inductors and transformers

3. Characteristics (Typical Value)




【Frequency Characteristics of Magnetic Permeability】



【Frequency Characteristics of Q factor】

*Measuring Shape = Toroidal core

4. Specifications

Type No.	Material	Layer	Size [mm]	Appearance	Photo of products
S/O-40x130CF	SS sheet (High Shielding Type)	1	60Wx130Lx0.09t	Both-side coated by PET films	
D/O-40x130CF	DS sheet (Low Loss Type)	1	60Wx130Lx0.09t	Both-side coated by PET films	

* Please contact our sales windows if you have inquiry for shape, number of layers, or lamination finishing method.

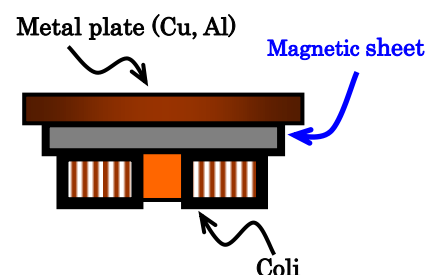
5. Examples of Effect

【Shielding】

f=100kHz

Test Sample	Thickness of Magnetic Layer [um]	Inductance [μ H]		Shielding L' / L
		without Metal Plate L [uH]	with Metal Plate L' [uH]	
Coil (without sheet)	—	7.57	1.15	0.15
SS sheet (1 layer)	20	13.23	12.86	0.97
DS sheet (1 layer)	20	12.05	11.37	0.94
Magnetic Powder Sheet	100	10.22	8.34	0.82

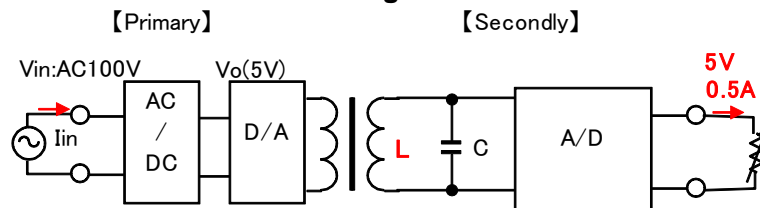
【Example of the application】



【Efficiency】 125kHz / 2.5W

Test Sample	Q factor	Efficiency η [%]
SS sheet (2 layers)	16.6	47
DS sheet (2 layers)	26.2	53

【Testing Circuit】



$$\text{Efficiency } \eta = \text{Pin} / \text{Pout} \times 100 \quad [\%]$$

Primary/Secondary: electromagnetic induction with contactless coil.
There is metal plate on the secondary coil.

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