

CRT RFN_x(RFID IMPROVING) SHEET

Isolator for HF and NFC Application

Product Description

RFN_x is magnetic sheet for radio frequency application. RFN_x is designed to have a high magnetic permeability and low magnetic loss at 13.56MHz. This product effectively solve the metal interference effect of tag and reader when the metal surrounding atmosphere. It consists of dark color magnetic material layer and pressure-sensitive adhesive.

Applications

RFN_x is typically used for the 13.56MHz RFID reader and tag be mounted directly upon a highly conductive surface. This might be the reader antenna surrounded by metallic body or tag mounting on conductive substrate such as gas bottles. However, it is not possible to communicate each other under this metallic

Atmosphere. The magnetic fluxes through the conductive surface induce eddy current within the conductor, which oppose the field responsible for their creation. It reduces the magnetic field in the surface of the conductor to such a degree that communication between reader and tag is no longer possible. By inserting the sheet between the antenna and conductor surface it is possible to largely prevent the occurrences of the eddy currents. This makes it possible to mount the antenna on metal surfaces.

RFN_x Effectiveness

Many factors determine the true communication range such as antenna size, sensitivity, field intensity, modulation algorithm and environment.

To maximize the performance, it is necessary to take into account the fact that the inductance of antenna may be increased by RFN_x. So, it is necessary to adjust the resonance frequency by the change of capacitance and inductance value.

RFN_x-Typical Properties

Properties	Typical Value				
Type of absorber material	Magnetic power embedded in polymer resin		Ferrite Sintered Sheet		
Product structure	Absorber sheet with one side double coated adhesive tape				
Product Number	RFN	RFNb	RFNi	RFNk	RFNL
Thickness(Backing)	0.10mm~0.20mm		0.10mm~0.14 mm		
Thickness(Adhesive)	0.03mm~0.05mm		0.01~0.02mm(including)		
Magnetic permeability ₁ u'(u'')	30(1)	60(2)	135(2)	150(3)	165(3.5)
Standard size	210mmx297mm		120mmx120mm		
Resistivity ₂	Min. 1x10 ⁶ Ω				
Operating temperature	-20~+85°C				

1. This value was measured with Agilent E4991A RF Impedance/Material analyzer
2. Test method is ASTM D257
3. Test method is JIS K6251