

FLEX-SUPPRESSOR[®]

Magnetic Sheet for RFID



Vol.01



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- Please request for a specification sheet for detailed product data prior to the purchase.
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FLEX-SUPPRESSOR® Magnetic Sheet for RFID

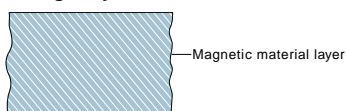


Outline

- BD type and RM1 type features increased flux convergence effect by improving relative magnetic permeability(μ') while maintaining magnetic loss(μ''). These two types are especially effective in improving the communication distance by suppressing the interference between loop antenna and metal in proximity. (Effective carrier frequency: 13.56MHz and below)
- RM2 type features the highest class permeability in the industry, μ' 120 (13.56MHz). It is effective in eliminating null point for RFID at 13.56MHz and below.

Structural Diagram

● Single layer

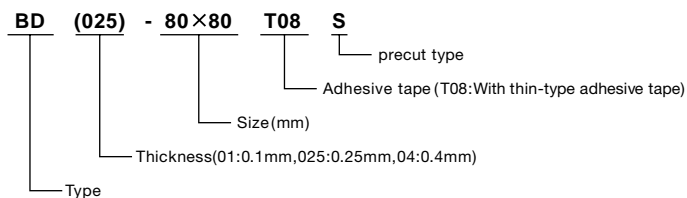


Specifications *1

Features	Standard type (low magnetic loss)	High permeability type (low magnetic loss)	Super high permeability type
Type	BD	RM1	RM2
Structure	Single layer		
Effective carrier frequency	13.56MHz and below		
Operating temperature (°C)	-25 to +85	-40 to +85	-25 to +85
Thickness (mm)	0.25	0.25, 0.4	0.1
Dimensions	Standard (mm)	80×80	
	Maximum (mm)	400×160	240×240
Specific gravity *2	3.9 (typ.)	3.8 (typ.)	
Surface resistance (Ω)	1.0×10 ⁴ (min.)	1.0×10 ⁵ (min.)	1.0×10 ⁴ (min.)
Approved standard	UL94 V-0	Equivalent to UL94 V-0	-
	UL File No.E176124	-	
Environment	RoHS	Compliant	
	Others	PVC Free, Lead Free	
Relative magnetic permeability (13.56MHz)	34(typ.)	48(typ.)	120(typ.)
Remarks	Standard type	High permeability type	Super high permeability type

*1 Above specifications are for Flex-suppressor® alone. (adhesives and etc. not included) *2 Value in 23°C atmosphere

Classification *3



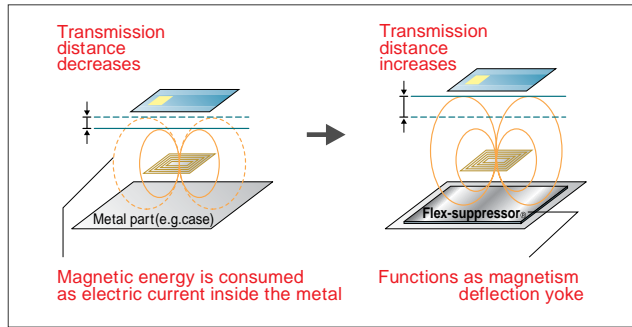
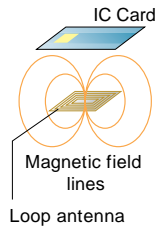
*3 Please contact local sales representative for detailed specification.



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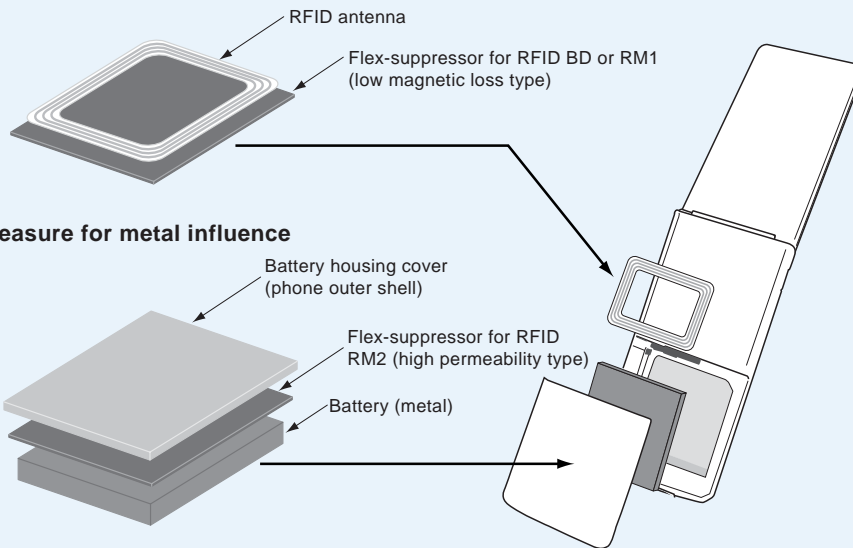
Application example

- Cell phone with RFID function
- Contactless IC card
- RFID reader/writer
- RFID tag



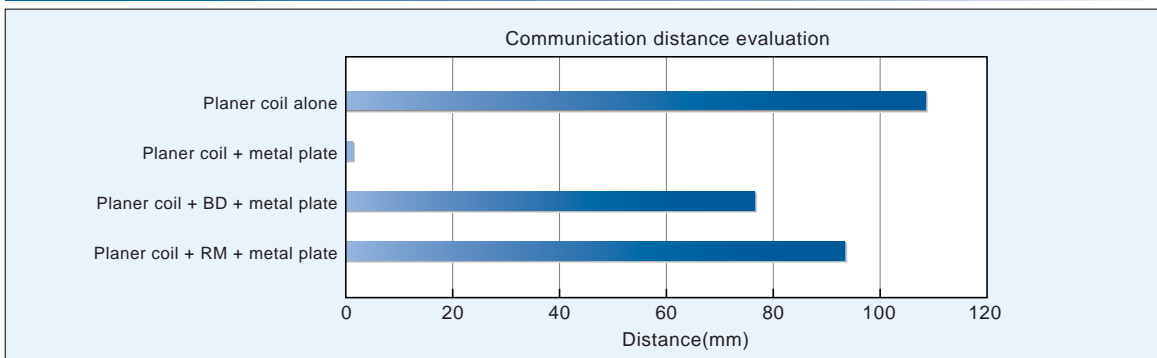
Application example in the cell phone with RFID function

Communication distance enhancement



Countermeasure for metal influence

Communication distance evaluation of RFID antenna in the cell phone



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Precautions

● Handling precautions

- Avoid high-temperature, humidity and direct sunlight. Storage environment should be below 40°C and below 70% relative humidity.
- The surface resistance value listed in this catalog is a reference value of the circuit parameter to indicate noise suppression. The value does not mean the product's insulation characteristics. The value may become lower if an excess pressure is applied to the product.
- Products in this catalog are not insulators. Please handle them as conductors. When in actual use, please be careful so that conductive material does not contact the surface or the edge of Flex-Suppressor® or Film Impedor® sheet. Insulation process should be performed when contact to conductive material is probable.
- Depending upon the processing procedure, powdery substance may drop out from sheet surface or edge if the cutting of the sheet is performed at the customer side. Please be careful as this powder may effect the component's performance depending on the location.
- Clean away any dust, oil or moisture from the surface of the installing area when attaching the sheet using adhesive tape.

● Guarantee of characteristic value

- Descriptions in this catalog regarding product characteristics and quality are based solely on discrete components. When using these components, be sure to check the specifications with the component in question mounted on the products.
- The names of the products and the specifications in this catalog are subject to change without notice for the sake of improvement. The manufacturer also reserves the right to discontinue any of these products. At the time of delivery, please ask for specifications sheets to check the contents in order to use the products properly and safely.

● Handling of the products

- The manufacturer's warranty will not cover any disadvantage or damage caused by improper use of the products that deviates from the characteristics, specifications, or conditions for use described in this catalog.
- The products in this catalog are intended for use in ordinary electronic products. We withhold the selling of the products if any of them are to be used in special applications requiring extremely high reliability where product defects might pose a safety risk and human life.
- Though the manufacturer has taken all possible precautions to ensure the quality and reliability of its products, improper use of products may result in bodily injury, fire, or similar accident. If you have any questions regarding the use of the products in question, please consult your NEC TOKIN sales representatives.
- Please be advised that the manufacturer accepts no responsibility for any infraction by users of the manufacturer's products on third party patents or industrial copyrights. The manufacturer is responsible only when such infractions are attributable to the structural design of the product and its manufacturing process.
- Should any of these products come under the category of strategic goods or services (according to Japan's foreign trade and foreign exchange regulations), the sender must obtain an export license from the Japanese Government before said products can be exported outside Japan.
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Information on environmentally influential substances

The Flex-suppressor® and the Film Impedor® does not contain substances listed below:

(1) Ozone depleting substance

- CFC (chlorofluorocarbon)
- Halon
- Carbon tetrachloride
- 1,1,1-Trichloroethane
- HCFC (hydrochlorofluorocarbon)
- HBFC (hydrobromofluorocarbon)
- Methyl bromide

(2) Substances regulated by RoHS order

- Lead and lead compound
- Mercury and mercury compound
- Cadmium and cadmium compound
- (content of plastics are below 5ppm)
- Hexavalent chromium and hexavalent chromium compound
- PBB (polybrominated biphenyl) and its kind
- PBDE (polybrominated diphenylether)

(3) Other environmentally influential substances (examples)

- PCB (polychlorinated biphenyl)
- Polychlorinated naphthalene
- Hexachlorobenzene
- Organotin compounds (tributyl tin, triphenyl tin)
- Asbestos
- Azo compound
- Chlorinated paraffin and its kind
- (paraffin chloride, Chlorinated paraffin and chloroparaffin)
- Radioactive substance
- PVC

*Please contact our sales person for details

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For inquiry, Please call Sales Promotion Department (Japan)

Phone: 81-3-3515-9220 Fax: 81-3-3515-9221

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- Should any of these products be considered as strategic goods, and thereby governed by foreign exchange or foreign trade regulations, the Government of Japan will require an export license before said products can be exported outside Japan.
- This catalog is current as of April 2008.

<http://www.nec-tokin.com>



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