

FLEX SUPPRESSOR®

Magnetic Sheet for RFID



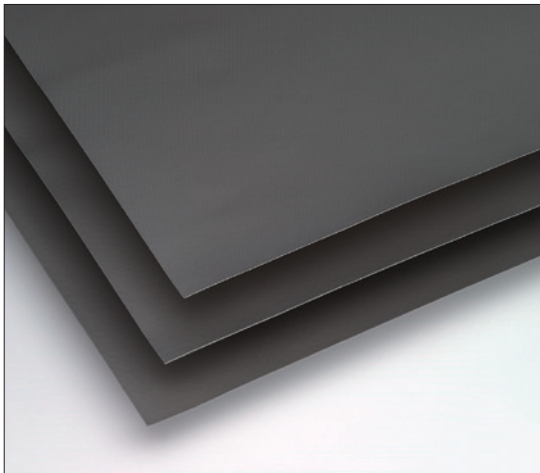
Vol.04



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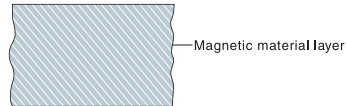
Outline

- Magnetic flux convergence is improved by increasing relative permeability (μ') while keeping the magnetic loss (μ'') low.

Prevents interference between a loop antenna and metallic objects, and effectively improves communication range of RFID.

(Effective carrier frequency: 13.56MHz and below)

Structural Diagram

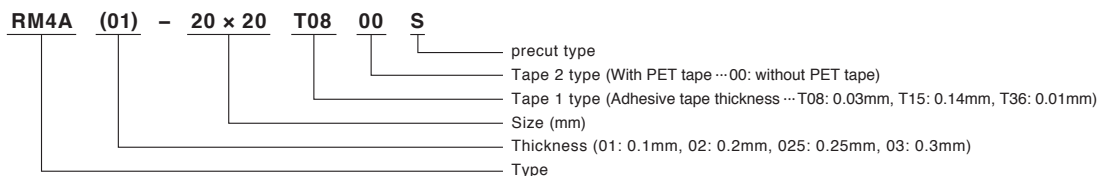


Specifications *1

Features		High magnetic permeability type, Low magnetic loss type
Type		NEW RM4A
Effective carrier frequency		13.56MHz 以下
Operating temperature	(°C)	-40~+85
Thickness	(mm)	0.1、0.2、0.25、0.3
Standard Dimensions	(mm)	220×185
Specific gravity *2		3.6(typ)
Surface resistance	(Ω)	1.0×1.0 ⁶ (min)
Environment	RoHS	Compliant
	Others	Halogen Free, PVC Free, Lead Free
Relative magnetic permeability (13.56MHz)		50(typ.)
Remarks		Lowered impact to the environment. Halogen free.

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

Classification *3



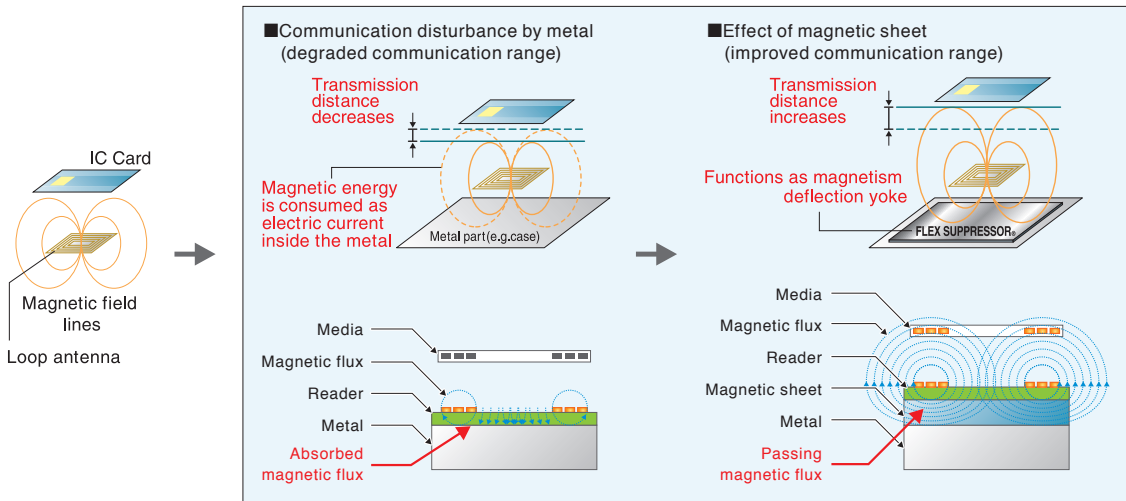
*3 Please contact local sales representative for detailed specification.



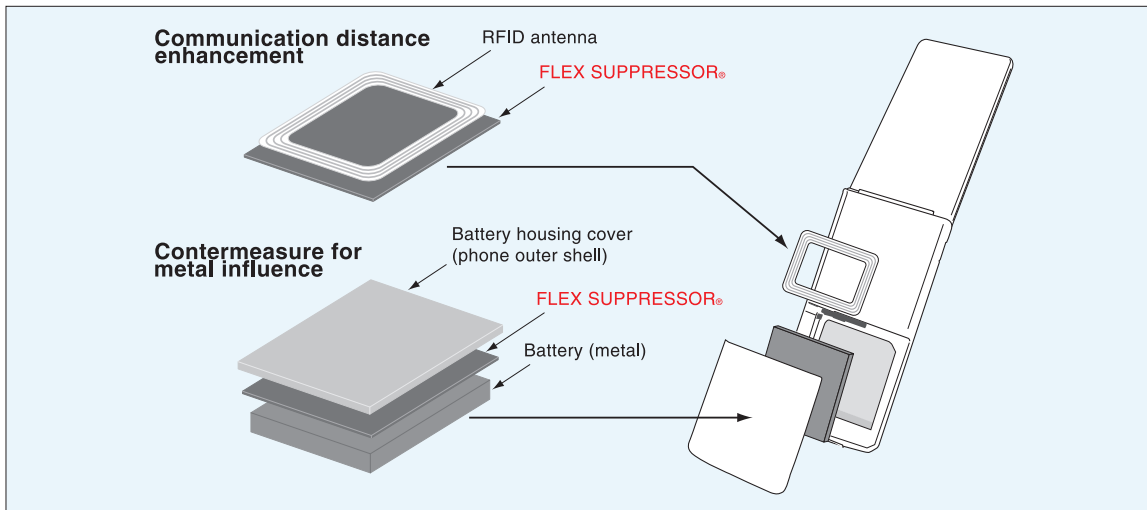
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Application example

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



Application example in the cell phone with RFID function



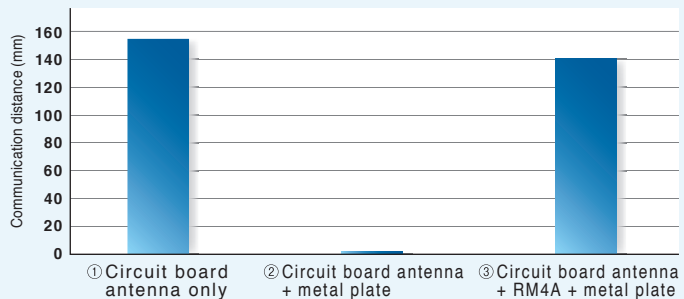
Communication distance evaluation of RFID antenna in the cell phone

● RFID circuit board antenna for mobile phones (About 40mm×30mm)

- ① Circuit board antenna only (in open space)
- ② Circuit board antenna with a metal plate in its proximity
- ③ RM4A installed between the circuit board and a metal plate

● ISO/IEC 18092 compatible Contactless reader/writer

Measurement of the maximum communication distance of both of the above (3 levels)



* This data does not represent guaranteed values.



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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[®] 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 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.
- Export Control
For customers outside Japan
TOKIN products should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles), or any other weapons.
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For products which are controlled items subject to the "Foreign Exchange and Foreign Trade Law" of Japan, the export license specified by the law is required for export.
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Information on environmentally influential substances

The FLEX SUPPRESSOR[®] does not contain substances listed below:

(1) Ozone depleting substance

- CFC (chlorofluorocarbon)
- Halon
- Carbon tetrachloride
- 1,1,1-Trichloroethane
- HCFC (hydrochlorofluorocarbon)
- HBFC (hydrobromfluorocarbon)
- 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 Product Management Department (Japan)

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

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