

M-S NFC/RFID – MAGNETIC SHEET FOR NFC/RFID APPLICATIONS



DATASHEET



FEATURES

- High Permeability 'u' (400-700) flexible magnetic sheet for NFC/RFID antenna applications. Improves energy transfer and read distance and secures read range to prevent eavesdropping on TAG-Reader Communication.
- Manufactured from iron-based Nano-Crystalline magnetic strips creating an ultra-thin (down to 30µm), high saturation (Bs) magnetic flux density material. This reduces the volume of magnetic material required for effective operation of antenna.
- Supplied in thickness range 0.03-0.3mm in 50mm wide tape format with cover film (PET) and double-sided adhesive with release liner. Can be customized based on the application, operating frequency and magnetic isolation/permeability requirements.
- Flexible material – reduces magnetic flux leakage at the edges, will not deform or break.

APPLICATIONS

- NFC antenna for Mobile Phones, NFC/RFID Card Readers and other Hand-held devices supporting all Contactless Technologies. Primarily used in Contactless Payment and Data Sharing systems.
- RFID antenna for Inventory Management, Data Transfer, Labelling systems.
- NFC for Proximity Smart Card Readers, Security, Access Control and Authentication and Door Entry Systems.
- NFC TAG systems for Asset Control, Personnel Identification / Physical Location.

PROPERTIES	NANO-CRYSTALLINE (NC)	UNIT
Magnetic Induction B800/T	1.25	-
Permeability (@200 KHz) Real μ' Imaginary μ''	400-700 (Adjustable) 20-40 (Adjustable)	-
Permeability (@13.56 MHz) Real μ' Imaginary μ''	300-500 (Adjustable) 100-200 (Adjustable)	-
Coercive Force (Hc)	≤ 1.6	A/m
Curie Temperature	570	°C
Thickness ($\pm 10\%$)	0.03-0.30	mm
Operating Temperature	-40 to +85	°C
ROHS	Compliance	-

NOTES

- Customised shapes are available
- The above performance data is tested in an environment of 70% humidity, temperature 25 °C
- This data is intended for reference purposes only. It is recommended that the material is tested to fully evaluate its performance ensuring it is fit for purpose.

Publish date : 25/10/2019

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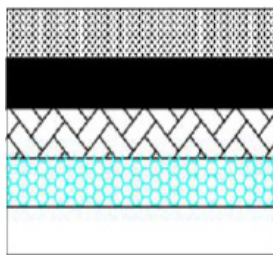


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APPLICATION NOTES – MAGNETIC SHEET FOR NFC/RFID APPLICATIONS:

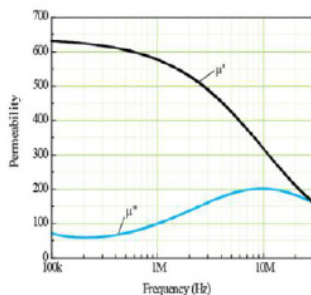
- NFC/RFID information is transmitted through electromagnetic (EM) inductive coupling.
- Any metal that is near to the antenna will significantly reduce EM energy due to Eddy Current losses into the battery or metal parts.
- Placing the Nano-Crystalline magnetic material between the antenna and the metal surfaces will solve this problem, reducing losses and improving read range performance.
- Designed for NFC and RFID applications, optimized to 13.56MHz, to de-couple the NFC antenna from the battery / PCB / metal surfaces by directing the antenna flux fields away from the metal objects.

STRUCTURE:

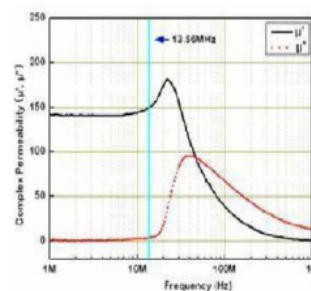


- PET Protective Film
- Black Film
- Magnetic Foil
- Double Sided Adhesive
- Release Liner

MAGNETIC PERMEABILITY SPECTRUM OF NFC/RFID MAGNETIC SHEET



COMPLEX PERMEABILITY SPECTRUM OF NFC/RFID MAGNETIC SHEET



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