

3M™ Flux Field Directional Materials AB5026RF and AB5026RF-B

Product Description

3M™ Flux Field Directional Materials AB5026RF and AB5026RF-B use magnetic ferrite tuned for radio frequency identification applications, with a different structure for different mounting purpose, that are designed to have high magnetic permeability at 13.56MHz.

3M FFDM AB5026RF and AB5026RF-B are available in standard 115mm x 115mm sheets.

Features and Benefits

- Designed for RFID and NFC applications to de-couple the NFC or RFID antenna from metal surfaces by directing the antenna flux fields away from the metal object or surface.
- Products can also be evaluated for Wireless Power systems to enhance power transfer efficiency between primary sending and pick-up antenna coils.

Applications

3M FFDM AB5026RF and AB5026RF-B are typically used for the 13.56MHz NFC antenna tag or reader applications. The FFDM materials are normally attached to the NFC antenna and positioned between the antenna and the metal or other conductive surface that the antenna/FFDM is attached to. By inserting the 3M FFDM AB5026RF or AB5026RF-B between the antenna and conductor surface, it is possible to significantly limit occurrences of eddy current and correct for resonant frequency shifts to the antenna, which are caused by the interaction of the antenna and the conductor surface (i.e. metal surface).

An NFC antenna near a metal surface can induce eddy currents in the metal surface, which in turn can degrade the antenna performance for read range. The FFDM material redirects the flux field of the antenna away from the metal surface and limits the eddy current generation and associated negative performance impact.

Typical Properties

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Properties	Typical Value
Type of Absorber Material	Sintered ferrite sheet
Product Structure	AB5026RF: Ferrite sheet with top & bottom side adhesive tape
	AB5026RF-B: Ferrite sheet with top PET cover & bottom D/C adhesive tape
Total Thickness	0.26mm (0.20mm ferrite sheet, Top & bottom 0.03mm adhesive layer)
Magnetic Permeability¹	105 (at 13.56MHz)
Standard Size	115mm x 115mm
Resistivity²	$1 \times 10^6 \Omega$
Operating Temperature	-30 ~ +115°C

¹This value was measured with Agilent E4991A RF Impedance/Material analyzer.

²Test method is ASTM D257.

Storage and Shelf Life

The shelf life of 3M™ Flux Field Directional Materials AB5026RF and AB5026RF-B is 12 months from the shipment date from the manufacturing location when stored in original packaging at 21°C (70°F) and 50% relative humidity.

Safety Data Sheet

Please consult the product Safety Data Sheet before use.

Regulatory

For regulatory information about this product, contact your 3M representative.

Technical Information

The technical information, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use

Many factors beyond 3M's control and uniquely within user's knowledge and control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer

Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. 3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OF TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability

Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.



Electronics Materials Solutions Division

3M Center, Building 225-3S-06
St. Paul, MN 55144-1000
1-800-251-8634 phone
651-778-4244 fax
www.3M.com/electronics

3M is a trademark of 3M Company.
Please recycle.
© 3M 2014. All rights reserved.
60-5002-0712-5

