

3M™ EMI Absorber AB7000 Series

Product Description

3M™ EMI Absorber AB7000 Series consists of a flexible polymer resin loaded with soft metal flakes. An acrylic pressure-sensitive adhesive allows for easy application.

Features and Benefits

- Flexible, high permeability magnetic sheets
- One-sided acrylic pressure-sensitive adhesive
- Easily die cut into complex shapes

Applications

3M absorber AB7000 series is typically used for applications requiring EMI control and signal integrity improvement in the 50MHz to 10 GHz range. It is a broadband EMI absorber designed to work in near-field applications inside and around electronic devices and assemblies. Common applications include reduction of noise and crosstalk inside mobile electronics, reduction of crosstalk and EMI on ribbon cables and flex cables, reduction of radiated IC noise (applying absorber directly to the noisy IC), damping of radiation and oscillations inside shields and cavities, and increasing signal integrity on high speed data lines through crosstalk reduction.

Attenuation and Power Loss

Many factors determine the true attenuation of an electromagnetic interference absorbing material, including shape and thickness, intimacy of substrate contact, smoothness of application surface, strength and frequency of the EMI signal, etc. Since 3M absorber AB7000 series is a near field absorber, attenuation characteristics tend to be very application specific. Power loss characteristics are measured using a 5cm x 5cm square of 3M absorber AB7000 series placed on a 50Ω microstrip line. The attenuation and noise dampening attained generally increases as the thickness of the material increases.



3M™ EMI Absorber AB7000 Series Typical Physical Properties

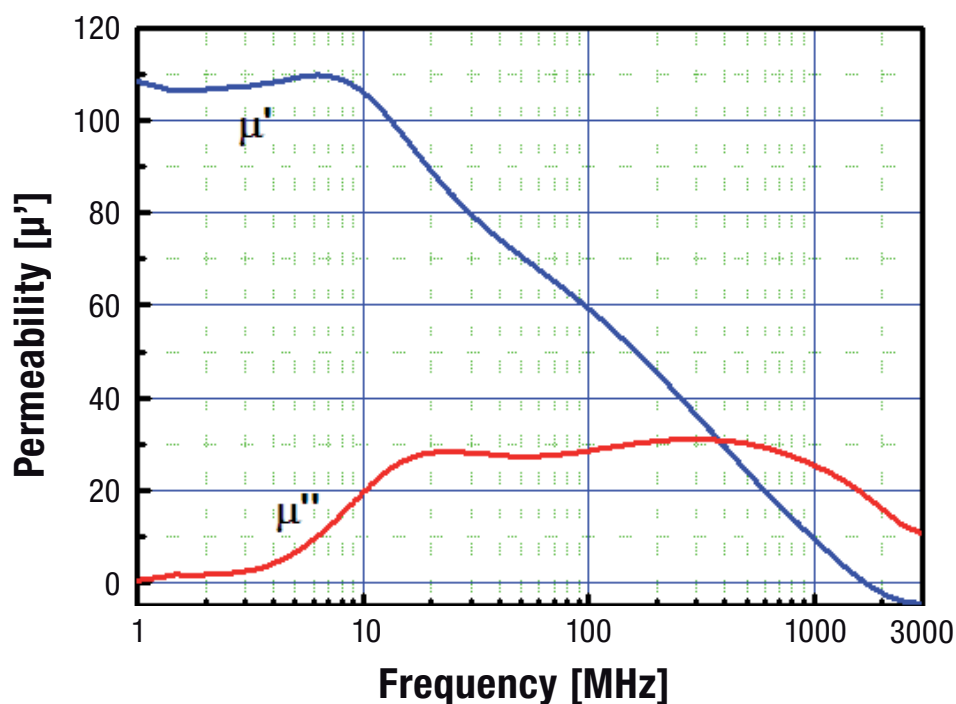
Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Property (Test Method)	Typical Value			
Adhesive	Acrylic non-conductive pressure-sensitive adhesive (PSA)			
Type of Backing	Polymer resin with magnetic metal flake filler			
Product Number	AB7010	AB7020	AB7030	AB7050
Backing Thickness	0.10mm	0.20mm	0.30mm	0.50mm
Adhesive Thickness	0.03mm	0.05mm	0.05mm	0.05mm
Standard Packaging	210mm x 297mm			
Temperature Range	-25 ~ 85°C			
Surface Resistivity (ASTM-257)	$1 \times 10^6 \Omega (\text{min})$			
Initial Permeability¹	110			
Typical Performance²	Refer to S_{11} attenuation and power loss graphs			

¹This value measured at 1MHz 3M TM K RD-EMC-AB-02.

²Attenuation is measured by 7mm coaxial verification kit under short fixed condition. Power loss is measured by a 50 Ω microstrip line method. 3M TM K-RD-EMC-AB-01.

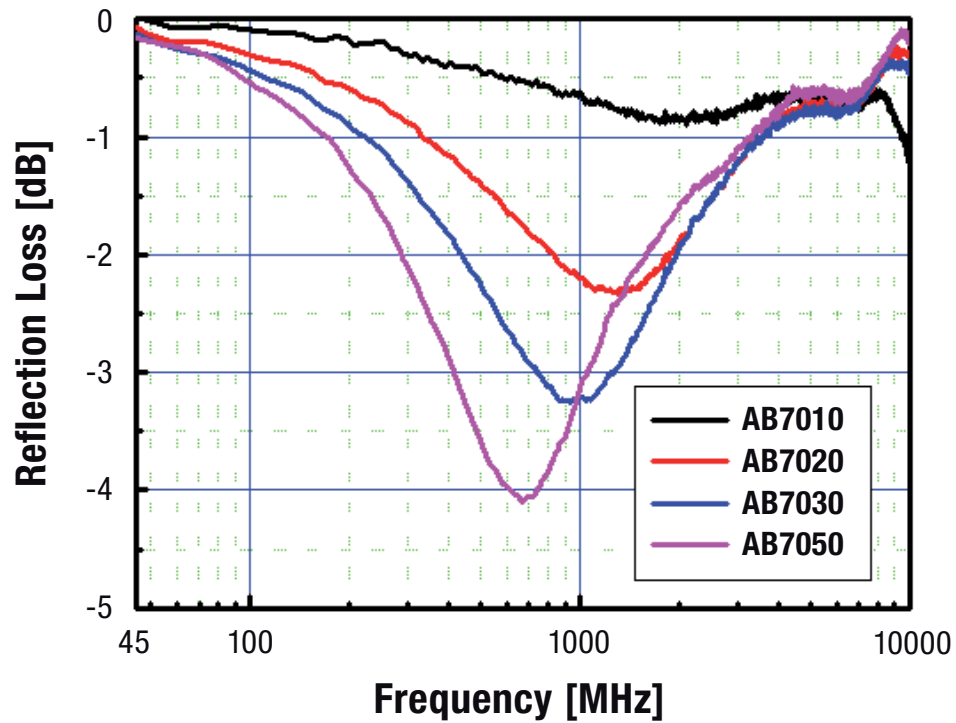
• Permeability



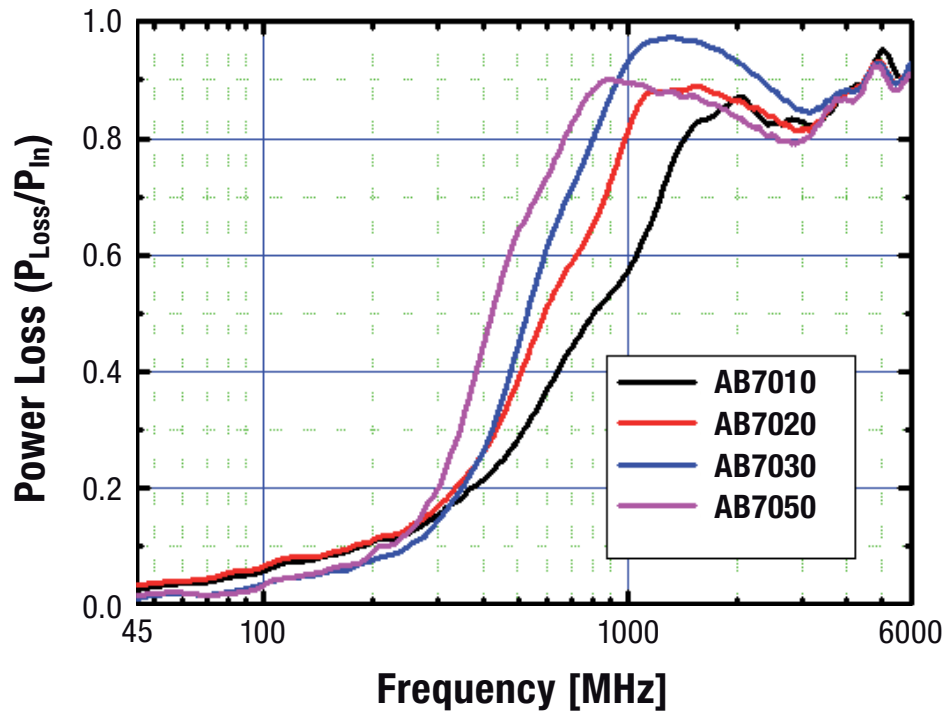
3M™ EMI Absorber AB7000 Series Typical Properties (continued)

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

• Reflection Loss



• Power Loss



Storage and Shelf Life

The shelf life of 3M™ EMI Absorber AB7000 Series 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 Safety Data Sheet prior to 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.

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