3M™ EMI Absorber AB6000, AB6000S, and AB6000G Series

Product Description
3M™ EMI Absorber AB6000, AB6000S, and AB6000G Series consists of an insulation layer, shielding layer, absorbing layer and non-conductive pressure-sensitive adhesive.

Features and Benefits
- Insulation Layer
- EMI Shielding Layer
- EMI Absorption Layer
- Pressure-sensitive Adhesive (PSA) Layer
- Supplied on a removable release liner for easy handling and die-cutting

Applications
The absorber is typically used for applications requiring both electromagnetic shielding performance and absorption function. It is useful for electrical devises for broadband radio frequency range (mobile phone, PDA, PC, BS/CS tuner, LAN, medical and military devices).

Common applications include attenuation of conduction and radiation noise suppression and filtering (FPCB and chips on circuit, high speed microprocessor) and resonant peak of enclosed cavities (EMI/ESD), and electric/ electronic/ RF components (IC/LSL, PCB, FPC, cable, oscillators, RF modules), mechanical bodies (metal can, frame, body, enclosure).

Attenuation and Power Loss
Many factors determine the true attenuation of electromagnetic shielding and absorbing material, including type and thickness of polymer, adhesive type, intimacy of substrate contact, smoothness of application surface, strength and frequency of the EMI signal, etc. However, using standard tests and fixtures, it is possible to determine a value for the attenuation.
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.

<table>
<thead>
<tr>
<th>Property (Test Method)</th>
<th>Typical Value US units (metric)</th>
<th>Typical Value Metric units (metric)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>AB6000G – Grey</td>
<td>AB6000S – Silver</td>
</tr>
<tr>
<td>Adhesive</td>
<td>Acrylic non-conductive pressure-sensitive</td>
<td></td>
</tr>
<tr>
<td>Type of Backing</td>
<td>Metal shielding layer and Absorption layer</td>
<td></td>
</tr>
<tr>
<td>Total Thickness</td>
<td>AB6005 Total Thickness 4.13 mil (0.105 mm)</td>
<td>AB6005G Total Thickness 4.13 mil (0.105 mm)</td>
</tr>
<tr>
<td>Absorber Thickness</td>
<td>AB6005 Absorber thickness 1.97 mil (0.050 mm)</td>
<td>AB6005G Absorber thickness 1.97 mil (0.050 mm)</td>
</tr>
<tr>
<td>Frequency Range</td>
<td>10MHz – 18GHz</td>
<td></td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-22 - 221°F (-30 - 105°C)</td>
<td></td>
</tr>
<tr>
<td>Shielding Effectiveness¹</td>
<td>Min 40db (30MHz – 1GHz)</td>
<td></td>
</tr>
<tr>
<td>Adhesion Strength²</td>
<td>8.8 oz/in (250gf/25mm)</td>
<td></td>
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</tbody>
</table>

¹Test method ASTM D-4935.
²MIL-STD-202 Method 307 maintained at 5 psi (3.4 N/cm²) measured over in² surface area. Conductive particles in the adhesive provide the electrical path between the application substrate and foil backing.

- Power Loss Property on Microstrip Line (50Ω)
Typical Physical Properties (continued)

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- **Shielding Effectiveness (SE)**

  ![Graph showing Shielding Effectiveness (SE) vs Frequency [MHz]]

- **Structure**

  - **AB6000 Series**
    - Shield Layer
    - Insulation Layer
    - Absorbing Layer
    - Adhesive Layer
    - Release Liner

  - **AB6000S Series**
    - Shield Layer
    - Insulation Layer
    - Absorbing Layer
    - Adhesive Layer
    - Release Liner

  - **AB6000G Series**
    - Shield Layer
    - Insulation Layer
    - Absorbing Layer
    - Conductive Adhesive Layer
    - Release Liner
Storage and Shelf Life
The shelf life of 3M™ EMI Absorber AB6000, AB6000S, and AB6000G 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.

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