3M™ XYZ-Axis Electrically Conductive Acrylic eCAP Pads 7830N

Product Description

3M™ XYZ-Axis Electrically Conductive Acrylic eCAP Pads 7830N represent a breakthrough in PSA tape and conductive gasket technology. 3M eCAP products are self-stick EMI gaskets or adhesive transfer tapes which provide good electrical conductive path for EMI shielding and grounding in electronic devices. Developed with 3M proprietary technology, 3M eCAP achieves a unique filler distribution in three-dimensional structures throughout the adhesive matrix. This filler distribution in a high performance 3M adhesive makes the tape have good xyz-axis electrical conductivity and good adhesion performance. 3M eCAP products are an excellent choice of EMC designers for initial to final stages of EMC design for electronic components and assemblies.

Product Features

- Competitive price with low conductive filler content
- No burr
- Various thickness
  - Standard thickness of 7830N: 0.2, 0.3, 0.4, 0.5 mm
- Easy application in die-cut or in roll form
- No need for additional process for PSA coating
- Single-sided
- Good XYZ-axis electrical conductivity
- Good shock absorption and damping performance
- Good adhesive and cohesive strength
- Rework – easy removal without adhesive residue

Applications

3M eCAP Pads are a combination of established 3M adhesive technology with state-of-the-art conductive technology. The PSA matrix is filled with conductive fillers which allow interconnection between substrates through the adhesive thickness (the “Z-axis”), and also helps provide electrical conductivity and EMI shielding in the plane of the adhesive (“X-Y Axis”). 3M eCAPs are ideal for EMI/RFI shield and EMI/RFI gasket to metal surfaces and also electrical bonding and grounding. 3M eCAP Pads can be applied as die cut parts or in roll form and offers excellent cutting properties in various converting process.

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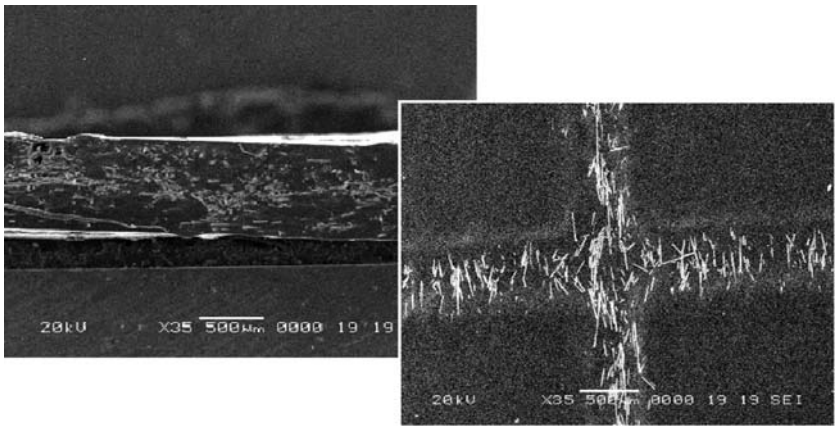


Electrically conductive fillers distributed in z and x,y-axis (Left) and exposed on the adhesive surface(Right) of 3M™ XYZ-Axis Electrically Conductive Acrylic Pads (eCAP)

Physical Properties

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

3M™ XYZ-Axis Electrically Conductive Acrylic eCAP Pads 7830N, a conductive gasket line with single-sided adhesion, consists of a high performance 3M acrylic adhesive loaded with conductive fillers and a conductive fabric laminate. 3M eCAP 7830N is the best choice for gasket in 0.1 ~ 0.45 mm gap in electronic components and devices.

Product Description of 3M eCAP 7830N

Conductive Fabric	
Color	Dark Grey
Woven Material	PET Woven Fabric
Pleated Material	Copper - Nickel
Thickness	0.05 mm

Conductive Acrylic Adhesive	
Color	Black
Conductive Filler	Nickel-Coated Graphite Fiber
Adhesive	Acrylic Pressure-Sensitive Adhesive

Typical Properties

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

Product Number	3M™ Electrically Conductive Acrylic eCAP Pads 7830N	Test Method
Pad Thickness	0.2, 0.3, 0.4, 0.5 mm	3M TM
180° Peel Adhesive	700 ~ 100 gf / inch	3M TM
Surface Resistance on Fabric Surface	10 Ω/	3M TM
Z-axis Resistance	0.5 Ω	3M TM
Compression Deflection[1]	15 kg/in^2	3M TM
Compression Set[2]	14%	3M TM

[1] Compression Deflection: Measured at 25% compression (12 mm/min)

[2] Compression Set: Compressed 25% for 22 hrs at 70°F, expressed as a percentage of the original thickness, as follows:

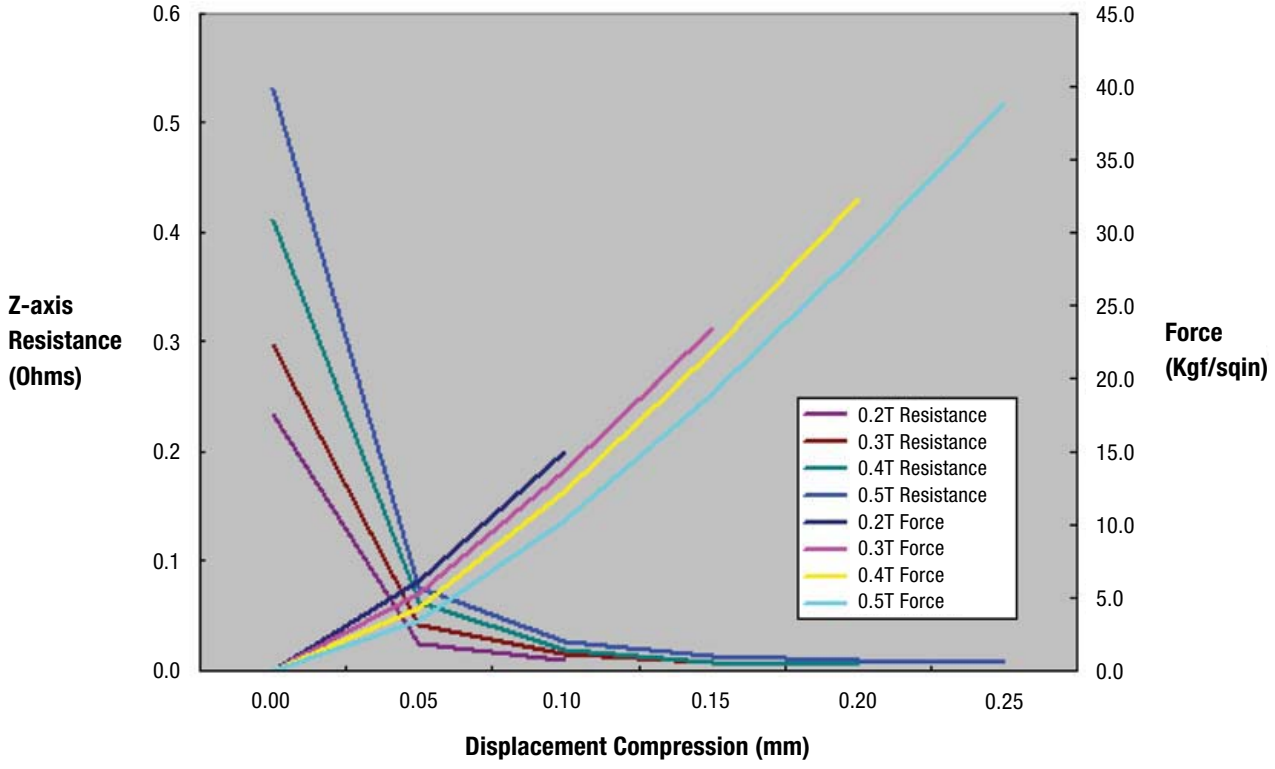
$Cd = [(t_o - t_f) / t_o \times 100]$

Cd = compression set expressed as a percent of the original thickness

t_o = *original thickness of test specimen*

t_f = *final thickness of test specimen*

Force Displacement Resistance Curve of 3M™ Electrically Conductive Acrylic eCAP Pads 7830N 0.2 ~ 0.5T:



Certification/Recognition

MSDS: 3M has not prepared a MSDS for this product which is not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. 1910.1200(b)(6)(v). When used under reasonable conditions or in accordance with the 3M directions for use, the product should not present a health and safety hazard. However, use or processing of the product in a manner not in accordance with the directions for use may affect its performance and present potential health and safety hazards.

TSCA: This product is defined as an article under the Toxic Substances Control Act and therefore, it is exempt from inventory listing requirements.

RoHs Complaint/REACH Compliant: This product complies with the European Union's "Restriction of Hazardous Substances" (RoHs) initiative and with European REACH regulations 2002/95/EC and 2005/618/EC.

For Additional Information

To request additional product information or to arrange for sales assistance, call toll free 1-800-251-8634. Address correspondence to: 3M, Electronics Markets Materials Division, 3M Center, Building 225-3S-06, St. Paul, MN 55144-1000. Our fax number is 651-778-4244 or 1-877-369-2923. In Canada, phone: 1-800-364-3577. In Puerto Rico, phone: 1-787-750-3000. In Mexico, phone: 52-70-04-00.

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