

3M™ Electrically Conductive Double-Sided Tape 9766B

Product Description

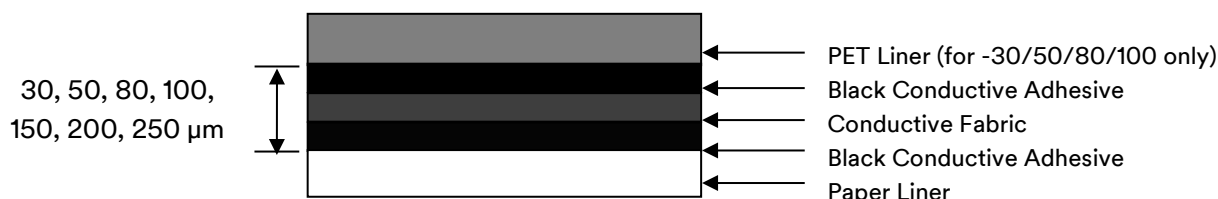
3M™ Electrically Conductive Double-Sided Tape (ECDST) 9766B consists of conductive fabric coated with black conductive acrylic pressure sensitive adhesive (PSA), offering excellent grounding performance between substrates and high adhesion performance. This tape has excellent handling characteristics and conductivity through the thickness (Z-axis) and in the plane (XY planes). It is available in standard and custom widths and lengths. Standard length is 50 M. Please contact your local 3M technical representative to review custom width and length options.

Key Features

- Conductive polyester fabric with double-sided adhesive provides high adhesion
- 3M conductive acrylic pressure sensitive adhesive has high adhesion and good XYZ-axis conductivity
- Removable liner for easy handling and die-cutting
- Halogen Free*

* Halogen Free is defined as having maximum 900 ppm bromine, maximum 900 ppm chlorine, and maximum 1500 ppm total bromine and chlorine, per IEC 61249-2-21.

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Product Construction/Material Description

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

3M™ Electrically Conductive Double-Sided Tape 9766B	
Property	Value
Adhesive Type	Black conductive acrylic pressure sensitive adhesive (PSA)
Carrier Type	Conductive polyester fabric
Tape Thickness Nominal (Thickness Tolerance)	30 (25-35 μm), 50 (45-55 μm), 80 (72-88 μm), 100 (85-115 μm), 150 (135-165 μm), 200 (175-225 μm) , 250 (225-275 μm)
Liner Type & Color	Tight side white PCK with “3M” logo in red Easy side PET (for -30/50/80/100 only)

Applications

- Conductive connection of ESD grounding
- EMI shielding
- Attach foam core EMI gaskets to electronic cabinetry
- Combine with other materials to provide a customized shielding solution

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Application Techniques

Note: Carefully read and follow the manufacturer’s precautions and directions for use when working with solvents. Tape application below 10°C (50°F) is not suggested. Once properly applied, low temperature holding power is generally satisfactory.

The bond strength of 3M™ Electrically Conductive Double-Sided Tape 9766B depends on the amount of adhesive-to-surface contact developed during application and substrate type and surface conditions.

- 1. Firm application pressure helps develop better wet-out and adhesive contact and may lead to improved bond strength as well as electrical conductivity. Pressure must be applied to the bond area after assembly to ensure sufficient wet-out of the adhesive to the substrates and to engage the conductive acrylic adhesive fillers with the substrates to make electrical connection. Mechanical pressure (roller, metal bar) or finger pressure at 5-15 psi. (Optimally the application conditions are determined via a set of Design of experiments (DOE) using a range of application pressure, dwell time and temperatures (suggested initial range might include 5-15 psi, 2-5 seconds, 21°C-38°C).
- 2. Heat may be applied simultaneously with pressure to improve wetting, final bond strength and electrical conductivity. Suggested temperature range to evaluate is in the 38°C-60°C range.
- 3. To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane.
- 4. Adhesion builds with time, up to 24 to 72 hours may be required to reach final adhesion values.

Typical Physical Properties and Performance Characteristics

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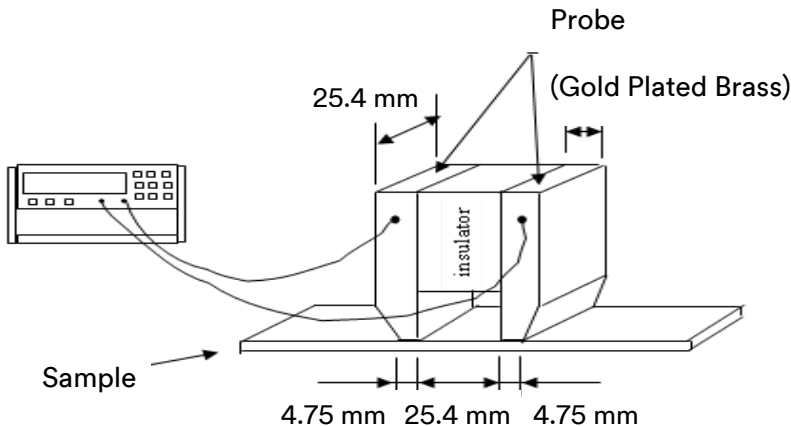
3M™ Electrically Conductive Double-Sided Tape 9766B				
Property	Method	9766B-30/50	9766B-80/100/150	9766B-200/250
180° peel adhesion (dwell 20 min @ RT)	ASTM D3330* (Adhesion to SUS)	0.6 N/mm	0.8 N/mm	1.0 N/mm
Surface resistance of adhesive	3M ETM-1**	≤ 0.10 Ω/□	≤ 0.15 Ω/□	≤ 0.20 Ω/□
Contact resistance through adhesive	3M ETM-11**	≤ 0.015 Ω/inch ²	≤ 0.020 Ω/inch ²	≤ 0.030 Ω/inch ²

*Methods listed as ASTM are tested in accordance with the ASTM method noted

**3M test methods as described below

3M Test Method ETM-1: Surface Electrical Resistance Test*

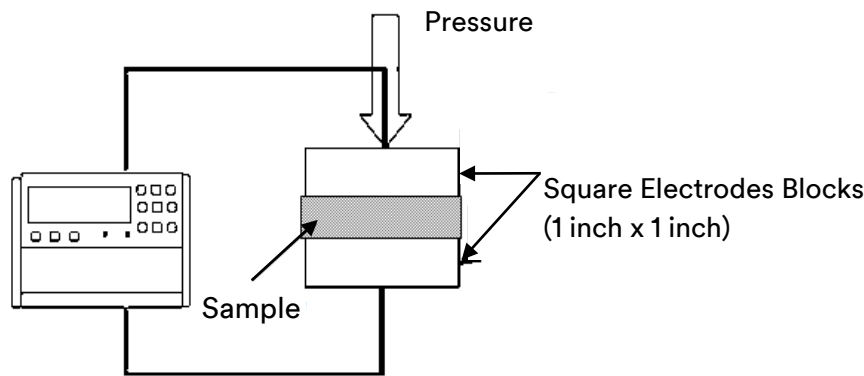
MIL-G-83528 surface probe, surface resistance of a material, SR Unit: Ω/□.



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3M Test Method ETM-11: Contact Electrical Resistance Test*

MIL-STD-202 Method 307 maintained at 5 psi (3.4 N/cm²) measured on 1 square inch surface area, CR Unit: Ω/inch².



Typical Operating Temperature Range***	Long Term (days-weeks): 85°C (185°F) Short Term (minutes-hours): 121°C (250°F)	3M Test Method
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***It is not suggested for excessive high or low temperature excursions where the application performance might be compromised. The user is recommended to conduct application evaluation to determine the fit-for-purpose of tape in their design.

Storage and Shelf Life

The shelf life of 3M™ Electrically Conductive Double-Sided Tape 9766B is 12 months from the date of manufacture when stored in the original packaging materials and stored at 21°C (70°F) and 50% relative humidity.

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is commercially available from 3M. The commercially available product will have a COA specification established. The COA contains the 3M specifications and test methods for the products performance limits that the product will be supplied against. The 3M product is supplied to 3M COA test specifications and the COA test methods. Contact your local 3M representative for this product’s COA.

This technical data sheet may contain preliminary data and may not match the COA specification limits and/or test methods that may be used for COA purposes.

Final product specifications and testing methods will be outlined in the products Certificate of Analysis (COA) that is shipped with the commercialized product.

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Safety Data Sheet: Consult 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 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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