

3M™ Electrically Conductive Double-Sided Tape 9732

Product Description

3M™ Electrically Conductive Double-Sided Tape 9732 consists of a conductive nonwoven and an electrically conductive acrylic pressure sensitive adhesive (PSA). It offers excellent grounding performance between substrates and also has high EMI shielding performance.

3M™ Electrically Conductive Double-Sided Tape 9732 is used for grounding and EMI shielding applications. It can be used to replace metal foil EMI shielding and grounding tapes in many application where improved conformability, tear resistance, puncture resistance, etc. may be needed. The metalized nonwoven backing offers the benefits of excellent flexibility and conformability, very light weight, and exceptional strength. The nonwoven backing also offers superior tear resistance.

3M tape 9732 is available in standard and custom widths and lengths. Standard length is 50M. Please contact 3M to review custom width and length options.

Key Features

- Conductive nonwoven offers excellent conformability
- Conductive acrylic adhesive offers high adhesion and good Z-axis conductivity
- Supplied on a 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 Descriptions

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 9732	
Property	Value
Color	Gray
Adhesive Type	Conductive Acrylic Pressure Sensitive Adhesive (PSA)
Carrier Type	Conductive Nonwoven (Cu/Ni metalized)
Tape Thickness	100 µm nominal (typical thickness tolerance 95µm -145µm)
Liner Type & Color	White PCK with “3M Electronics” logo in red

Typical Physical Properties and Performance Characteristics

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes. Final product specifications and testing methods will be outlined in the products Certificate of Analysis (COA) that is shipped with the final commercialized product.

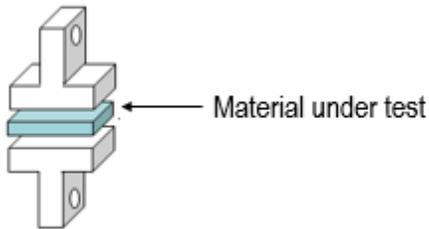
3M™ Electrically Conductive Double-Sided Tape 9732		
Property	Value	Test Method
Pullout Force (dwell 20min@ RT)	≥80N/inch ²	ETM-T block ^a (Adhesion to Aluminum)
Surface Resistance of Adhesive	≤ 0.18Ω/□	ETM-1 ^b
Contact Resistance through Adhesive	≤ 0.06Ω/inch ²	ETM-11 ^c

^{a, b, c} 3M Test Methods as described below.

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ETM-T block Pullout Force Test Method^a

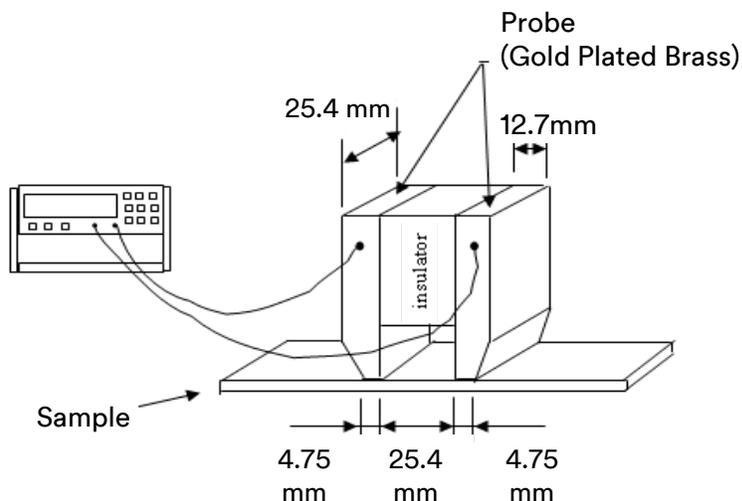
Place one square inch of the tape on the square surface of aluminum T-shaped block, remove the other side liner of tape, and attach it to the second T-shaped block. The tape being tested should be within the geometric center of jig. Keep 2 Kg weight pressing fixture on the jig for one minute, then remove it. Let it dwell at room temperature for 20 minutes, clamp the end of T-shaped block into the jaw of machine and operate the movable jaw at speed of 12 inches/minute until two T-shaped blocks separate from each other and record the maximum data of force.



T-block Pullout Force Test

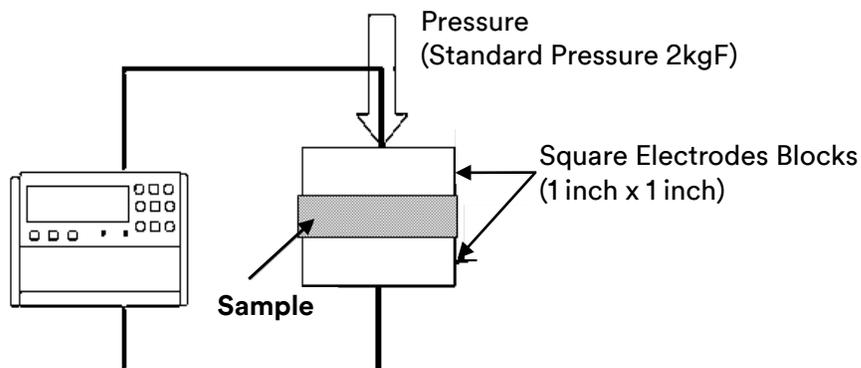
ETM-1, Surface Electrical Resistance Test^b

ETM-1, surface Probe, Surface resistance of a material, SR Unit: Ω/\square .



ETM-11, Contact Electrical Resistance Test^c

ETM-11, maintained at 5 psi ($3.4\text{N}/\text{cm}^2$) measured on 1 square inch surface area, CR Unit: Ω/inch^2 .



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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.

Application Techniques

The bond strength of 3M™ Electrically Conductive Double-Sided Tape 9732 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.

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.

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.

Storage and Shelf Life

The shelf life of 3M™ Electrically Conductive Double-Sided Tape 9732 is 12 months from the date of manufacture when stored in roll form in original packaging at 21°C (70°F) and 50% relative humidity.

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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 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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