

3M™ Electrically Conductive Double-Sided Tape 9722S Series

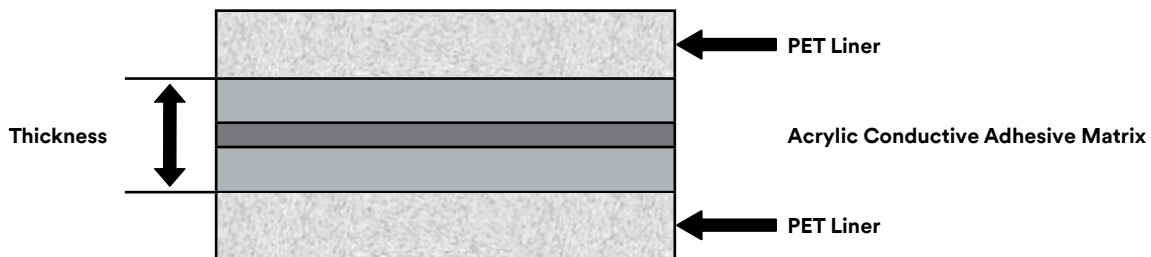
Product Description

3M™ Electrically Conductive Double-Sided Tape 9722S series is an isotropic electrical conductive tape. It consists of a conductive woven fabric coated with a unique acrylic electrically conductive pressure sensitive adhesive (CPSA) that provides high adhesion and good electrical conductivity. 3M tape 9722S offers excellent handling characteristics and conductivity through the thickness (Z-axis) and in the plane of the adhesive (X, Y planes).

3M tape series 9722S series is used for conductive connection in applications such as ESD grounding, EMI shielding and EMI gasket grounding, as well as adhesive attachment to various device substrates. 3M tape series 9722S may be used as a grounding tape for electrical modules, or combined with many types of foil or fabric backings to make customized EMI shields or grounding tapes. It may also be used to attach conductive fabric/foam cores for EMI gaskets to various electronic cabinetry.

3M tape series 9722S includes product numbers 9722S-30, 9722S-50, 9722S-80, 9722S-100, 9722S-130 and 9722S-140 and is available in standard and custom widths and lengths. Standard length is 50M. Contact your local 3M representative for custom options.

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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.

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Property	Value
Adhesive Type	Conductive acrylic pressure sensitive adhesive (PSA)
Carrier Type	Conductive fabric carrier (Ni/Cu plated polyester)
Tape Thickness	See “Typical Physical Properties and Performance Characteristics” chart
Liner Type & Color	Transparent PET liner on both sides of 3M tape series 9722S

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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 provided once the product is approved by 3M for general commercialization and development work is completed.

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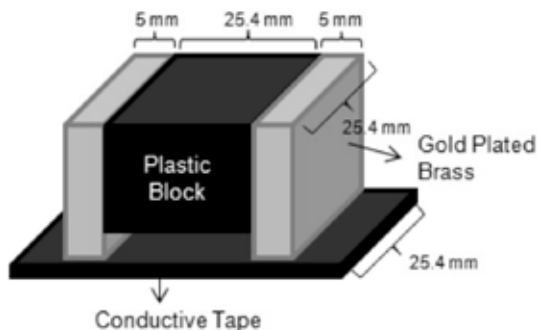
Products	9722S-30	9722S-50	9722S-80	9722S-100	9722S-130	9722S-140	Test Method
Thickness (µm)	30	50	80	100	130	140	ASTM D1000 ¹
Adhesion to SUS (gf/inch)	1200 (both sides)	1500 (both sides)	2200 (both sides)	1800 (both sides)	2000 (both sides)	1300 (both sides)	ASTM D1000 ¹
Resistance through Adhesive (Ω)	0.1 (both sides)						ETM-1 ²
Resistance through Adhesive (Ω)	0.2 (both sides)						ETM-2 ³
Z-axis Resistance (Ω)	0.01						ETM-11 ⁴

¹Tested in accordance with ASTM D1000 test method.

^{2,3,4} 3M Test Methods as described below.

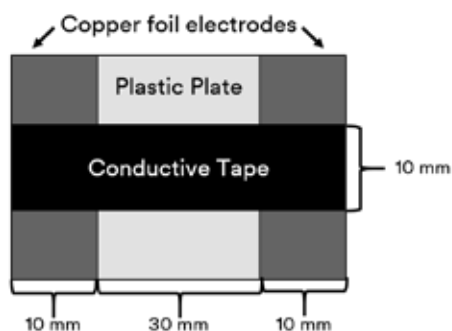
ETM-1 Surface Electrical Resistance Test²

Place the gold plated block jig (250 g weight) onto the backing or adhesive side of conductive tape, then start measuring the DC resistance between the electrodes with micro-ohm meter and record the resistance after 60 seconds.



ETM-2 DC Resistance Test³

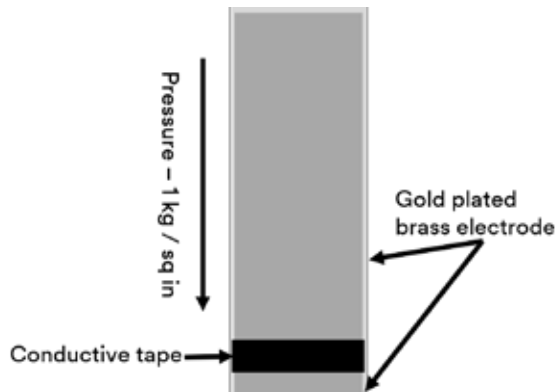
Place a strip of the single (double) side conductive tape in 10 mm x 40 mm with adhesive side down between the copper foil test surfaces that have been pre-applied to a plastic surface. After initial hand lamination to provide for a 10 mm x 10 mm contact area between the tape and copper foil, apply a 2kg rubber roller across the tape one time. Application method simulates a typical manufacturing process that might be used to apply the tapes to a surface. After 20 minutes of dwell time, the DC resistance between the copper foil strips are measured with a micro-ohm meter. The resistance results are recorded after 30 seconds for initial resistance.



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ETM-11 Contact Electrical Resistance Test⁴

Place a conductive tape in 25.4 mm x 25.4 mm on the bottom gold plated electrode and get 2kg rubber roller to shuttle once on the electrodes. Then place the 1kg gold plated electrode onto the tape and start measuring the DC resistance between the electrodes with micro-ohm meter and record the resistance after 30 seconds.



Typical Operating Temperature Range

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.

Long Term (days-weeks): 85°C (185°F)	3M Test Method
Short Term (minutes-hours): 121°C (250°F)	

Application Guide

The bond strength of 3M™ Electrically Conductive Adhesive Double-Sided Tape 9722S 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 5-15psi, 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.

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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. Inquire with 3M for the COA for this product.

The TDS data contains preliminary data and is not 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 provided once the product is approved by 3M for general commercialization and development work is completed.

Storage and Shelf Life

The shelf life of 3M™ Electrically Conductive Adhesive Double-Sided Tape 9722S series is 12 months from the date of manufacture when stored in roll form in original cartons at 21°C (70°F) and 50% relative humidity.

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.

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