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3M™ Electrically Conductive Double-Sided Tape 9793KW Series

Product Description

3M™ Electrically Conductive Double-Sided Tape 9793KW Series are an XYZ electrically conductive pressure sensitive adhesive (PSA) tapes matrix. 3M tape 9793KW series consist of a porous conductive matrix carrier and PSA that is electrically conductive and used as a PSA attachment to the grounding surface. The product is an acrylic based adhesive solution and offers adhesion and grounding performance to many surface types. 3M tape 9793KW series provides electrical grounding performance with small size contacts and PSA attachment for EMI shielding designs.

Key Features

- 3M™ Electrically Conductive Double-Sided Tape 9793KW with porous conductive matrix
- Conformable CPSA design
- Enhanced grounding
- High adhesion properties
- Available multiple thickness variations

Product Construction

Release Liner

Acrylic adhesive with porous conductive matrix

Release Liner

Product Construction / Materials 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 9793KW Series*	
Color	Face Side: Grey metallic Back Side: Grey metallic
Conductive Adhesive Type	Acrylic adhesive with metalized porous conductive matrix
Release Liner	Face Side: Transparent PET release liner Back Side: Transparent PET release liner

Note: *The product is available in 1050 mm x 100 meter. Please contact your local 3M representative for more information.

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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 product's Certificate of Analysis (COA) that is shipped with the commercialized product.

3M™ Electrically Conductive Double-Sided Tape 9793KW Series									
Property	**Target value**								**Test Method**
9793KW-xxx	**9793KW-150**	**9793KW-200**	**9793KW-250**	**9793KW-300**	**9793KW-350**	**9793KW-400**	**9793KW -500**	**9793KW -600**	
Thickness	155 µm	200 µm	250 µm	300 µm	350 µm	400 µm	500 µm	600 µm	ASTM D1000[a]
Adhesion to SUS Face Side (gf/inch)	1200	1600	1600	2000	2000	2000	2000	2000	ASTM D1000[a]
Adhesion to SUS Back Side (gf/inch)	1600	1600	1600	2000	2000	2000	2000	2000	ASTM D1000[a]
Electrical Resistance through Z-Axis	0.02Ω~0.20Ω								3M ETM-12[b]

[a] Tested in accordance with ASTM D1000 test method.
[b] 3M test method notes attached.

Shielding Effectiveness

Many factors determine the shielding effectiveness of a conductive adhesive tape, including type and thickness of the conductive layers, adhesive strength, degree of contact, smoothness of application surface, test frequency, etc. For 3M tape 9793KW series, the typical shielding effectiveness is expected to be in the range of 40 dB to 60 dB, using a standard EMI shielding test methods and through the thickness of the sample tested.

Typical Applications

3M™ Electrically Conductive Double-Sided Tape 9793KW Series is typically used for applications requiring excellent electrical conductivity from the application substrate through the adhesive to a second substrate. Common uses include grounding and EMI shielding in equipment and components.

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 recommended. Once properly applied, low temperature holding power is generally satisfactory.

The bond strength of 3M™ Electrically Conductive Double-Sided Tape 9793KW Series depends on the amount of adhesive-to-surface contact developed during application and substrate type and surface conditions.

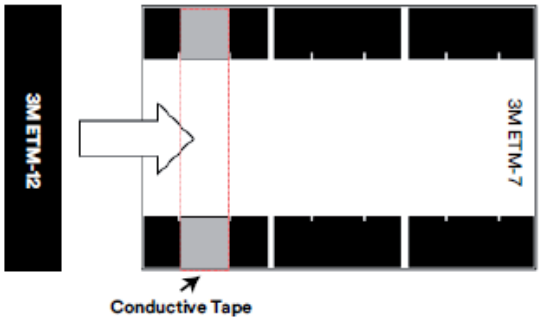
1) Firm application pressure helps develop better wet-out and adhesive contact and may lead to improved bond strength as well as electrical conductivity. Pressure must be applied to the bond area after assembly to ensure sufficient wet-out of the 3M tape 9793KW series adhesive to the substrates and to 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 pressures, 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 is 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.

3M ETM-12: Z-Axis Electrical Resistance through Adhesive

Place conductive tape pieces in 10 mm x 10 mm on the center of the electrodes on 3M ETM-7 testing board. Then place 3M ETM-12 testing board with the gold-plated side down on the tapes between electrodes. After initial hand lamination to provide for a 10 mm x 10 mm contact area between the tapes and electrodes, apply 2kg rubber roller across the tape one time. Application method simulates a typical manufacturing process that might be used to apply the tapes to the surface. After 20 minutes of dwell time, the DC resistance between the electrodes is measured with a micro-ohm meter. The resistance results are recorded after 5 ~ 30 seconds for initial resistance.



Storage and Shelf Life

The shelf life of 3M™ Electrically Conductive Double-Sided Tape 9793KW Series is 12 months from the date of manufacture when stored in roll form, in the original packaging materials, and at < 25°C (77°F) and < 60% relative humidity.

Certificate of Analysis (COA)

The 3M Certificate of Analysis (COA) for this product is established when the product is manufactured and is deemed commercially available from 3M. The COA contains the 3M specifications, test methods, and test results for the product's performance attributes that the product will be supplied against. Contact your local 3M representative for this product's COA.

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Safety Data Sheet: Consult Safety Data Sheet before use.

Regulatory: For regulatory information about this product, contact your 3M representative.

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