Science. Applied to Life.™

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

Product Description

3M™ Electrically Conductive Double-Sided Tape 9793KT Series is an XYZ electrically conductive pressure sensitive adhesive (PSA) tapes matrix. 3M tape 9793KT series consists of a 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 9793KT series provides electrical grounding performance with small size contacts and PSA attachment for EMI shielding designs.

Key Features

- Porous conductive carrier layer
- Enhanced grounding and
- adhesion capabilities
- 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 9793KT Series*	
Color	Face Side: Grey metallic Back Side: Grey metallic
Conductive Adhesive Type	Acrylic Adhesive Conductive Foam 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. Contact your local 3M representative for more information.

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

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 9793KT- Series											
Property		**Target Value**									Test Method
9793KT-xxx	**9793KT -130**	**9793KT -150**	**9793KT -180**	**9793KT -210**	**9793KT -230**	**9793KT -255**	**9793KT -300**	**9793KT -350**	**9793KT -400**	**9793KT -500**	
Thickness (µm)	130	150	180	210	230	255	300	350	400	500	ASTM D1000[a]
Adhesion to SUS Face Side (gf/inch)	1000	1800	1800	2000	2000	2000	2500	2500	2500	2500	ASTM D1000[a]
Adhesion to SUS Back Side (gf/inch)	1000	1800	1800	2000	2000	2000	2500	2500	2500	2500	ASTM D1000[a]
Electrical Resistance through Z-Axis		0.01 ~ 0.25 Ω									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 9793KT 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.

Applications

3M™ Electrically Conductive Double-Sided Tape 9793KT 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 electronic 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 suggested. Once properly applied, low temperature holding power is generally satisfactory.

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

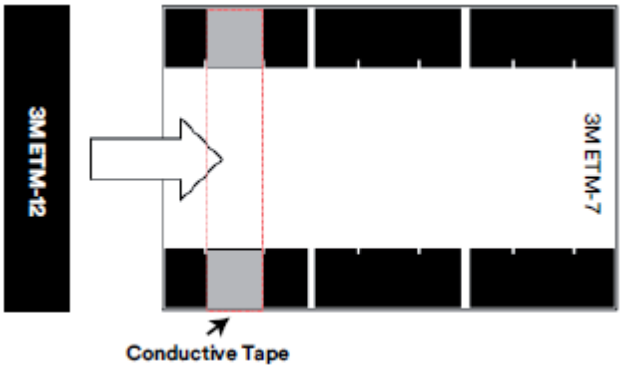
1) Firm application pressure helps develop better wet-out and adhesive contact and may lead to improved bond strength as well as electrical conductivity. Pressure must be applied to the bond area after assembly to ensure sufficient wet-out of the 3M tape 9793KT series adhesive to the substrates and to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

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 a 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 9793KT Series is 12 months from the date of manufacture when stored in roll form, in the original packaging materials, and stored 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.

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

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, guidance, and other statements contained in this document or otherwise provided by 3M are based upon records, tests, or experience that 3M believes to be reliable, but the accuracy, completeness, and representative nature of such information is not guaranteed. Such information is intended for people with knowledge and technical skills sufficient to assess and apply their own informed judgment to the information. No license under any 3M or third party intellectual property rights is granted or implied with this information.

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. As a result, customer is solely responsible for evaluating the product and determining whether it is appropriate and suitable for customer's application, including conducting a workplace hazard assessment and reviewing all applicable regulations and standards (*e.g.*, OSHA, ANSI, etc.). Failure to properly evaluate, select, and use a 3M product in accordance with all applicable instructions and with appropriate safety equipment, or to meet all applicable safety regulations, may result in injury, sickness, death, and/or harm to property.

Warranty, Limited Remedy, and Disclaimer: Unless a different warranty is specifically stated on the applicable 3M product packaging or product literature (in which case such warranty governs), 3M warrants that each 3M product meets the applicable 3M product specification at the time 3M ships the product. **3M MAKES NO OTHER WARRANTIES OR CONDITIONS, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM, OR USAGE OF TRADE.** If a 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement or repair of the 3M product or refund of the purchase price.

Limitation of Liability: Except for the limited remedy stated above, and except to the extent prohibited by applicable law, 3M will not be liable for any loss or damage arising from or related to the 3M product, whether direct, indirect, special, incidental, or consequential (including, but not limited to, lost profits or business opportunity), regardless of the legal or equitable theory asserted, including, but not limited to, warranty, contract, negligence, or strict liability.

Disclaimer: For industrial use only. Not intended, labeled or packaged for consumer sale or use.

3M

Display and Electronics
3M Center, Building 223-3S-32
St. Paul, MN 55144
1-800-251-8634 phone
651-778-4244 fax
www.3M.com/electronics

60-5005-0454-7