XYZ-Axis Electrically Conductive Tape 9750

Preliminary Technical Data **September 2011**

Products description

3M™ XYZ-Axis Electrically Conductive Tape 9750 is an isotropically electrical conductive tape. It consists of conductive acrylic pressure sensitive adhesive loaded with conductive nonwoven. The result is a double-sided tape providing both high adhesion and very good electrical conductivity. The conductive nonwoven in Tape 9750 also provides improved handling characteristics.

Tape 9750 conducts electricity through the thickness (Z-axis) and in the plane of the adhesive (X, Y planes), it is ideal for conductive connection of ESD grounding, EMI shields and EMI gasket attachment to electronic and electrical devices. It may be used as grounding tape for electrical modules, or combined with many types of foil laminate shields to provide a customized shielding solution, and may also be used to attach conductive fabric/foam core EMI gaskets to electronic cabinetry.

Construction

Product	9750
Adhesive type	Conductive acrylic based pressure sensitive adhesive
Carrier Type	Conductive nonwoven
Tape Thickness	2.2 mil (55 µm)
Liner Color, Type, Print	White PCK with white 3M logo
Liner Caliper	5.5mil (140 µm)

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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.

Product	**9750**
Adhesion-180 degree peel strength to stainless steel (Modified ASTM D3330 180 degree, 2 mil PET as backing)	Oz/in (N/100mm)
- 20 minutes@RT	73(80)
- 24 hours@RT	82(90)
- 72 hours@RT	91(100)
Operative temperature ranges*:	
Long Term (days, weeks)	185 ˚ F (85℃)
Short Term (minutes, hours)	250 ˚ F (121℃)

* Tape 9750 is not recommended for uncertain high or low temperature excursions where the electrical performance might be compromised, even if holding power is not affected. The user is responsible for the temperature performance qualification of Tape 9750 in their design.

Electrical conductivity	
Surface electrical resistance	< 0.06Ω/□
Electrical resistance through adhesive*	< 0.02Ω/inch^2

* MIL-STD-202 Method 307 maintained at 5 psi (3,4N/cm^2) measured over 1 inch^2 surface area and one side of the tape was laminated with one layer of copper foil.

Application Techniques

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure helps develop better adhesive contact and improves bond strength as well as electrical conductivity. Pressure must be applied to the bond line after assembly to wet the substrates with 3M™ XYZ-Axis Electrically Conductive Tape 9750 and to engage the conductive nonwoven with the substrates to make electrical connection. Mechanical pressure (roller, metal bar) or finger pressure at 15 psi (0.10 Mpa) or greater is suggested. Heat may be applied simultaneously to improve wetting and final bond strength as well as electrical conductivity.

To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Some typical surface cleaning solvents are isopropyl alcohol or heptane.

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Note: Carefully read and follow the manufacturer's precautions and directions for use when working with solvents.

Ideal tape application temperature range is 61°F to 100°F (16°C to 38°C). Tape application below 50°F (10°C) is not recommended because the adhesive will be too firm to wet the substrates, resulting in low adhesion and poor electrical conductivity. Once properly applied, low temperature holding power is generally satisfactory.

General Information	Tape 9750 provides good adhesion to metal surfaces and provides low electrical resistance that is stable over time. The pressure sensitive nature and nonwoven reinforcement of Tape 9750 makes this product convenient to use and shows good handling properties.
Application Ideas	Tape 9750 is ideal for conductive connection of ESD grounding, EMI shields and EMI gasket attachment to electronic and electrical devices. It may be used as grounding tape for electrical modules, or combined with many types of foil laminate shields to provide a customized shielding solution, and may also be used to attach conductive fabric/foam core EMI gaskets to electronic cabinetry. Tape 9750 may be applied in strips or die cut to specific shapes and sizes to meet the design.
Certification/ Recognition	**MSDS:** 3M has not prepared a MSDS for the products which are not subject to the MSDS requirements of the Occupational Safety and Health Administration's Hazard Communication Standard, 29 C.F.R. **TSCA:** The product is defined as articles under the Toxic Substances Control Act and therefore, is exempt from inventory listing requirements.
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