XYZ-Axis Electrically Conductive Tape 7765

Technical Data **October 2009**

Product Description

3M™ XYZ-Axis Electrically Conductive Tape 7765 is an isotropically electrical conductive tape. It consists of conductive acrylic pressure sensitive adhesive loaded with conductive non-woven. The result is a double-sided tape providing both high adhesion and good electrical conductivity.

Tape 7765 conducts electricity through the thickness (Z-axis) and in the plane of the adhesive (X, Y planes), it is ideal for EMI shields and EMI gasket attachment to electronic and electrical devices. It may be used with many types of foil laminate shields to provide a customized shielding solution.

Construction

Product	7765
Adhesive	Conductive acrylic based pressure sensitive adhesive
Carrier Type	Conductive non-woven
Tape Thickness	4 mil (100 µm)
Liner Color, Type, Print	White PCK with white 3M logo
Liner Caliper	5.5mil (140 µm)

3M™ XYZ-Axis Electrically Conductive Tape 7765

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	**7765**
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	74(80)
- 24 hours@RT	78(84)
- 72 hours@RT	82(89)
Operative temperature ranges:	
Long Term (days, weeks)	185 ˚ F (85℃)
Short Term (minutes, hours)	250 ˚ F (121℃)

* Tape7765 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 7765 in their design.

Electrical conductivity	
Surface electrical resistance	< 0.5Ω/□
Electrical resistance through adhesive*	< 0.15Ω/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.

Shelf Life of Tape in Roll Form	24 months from date of manufacture when stored in original cartons at 70˚ F (21°C) and 50% relative humidity.

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 7765 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.

3M™ XYZ-Axis Electrically Conductive Tape 7765

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 7765 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 7765 makes this product convenient to use and shows good handling properties.
Application Ideas	Tape 7765 is ideal for attaching foil laminate EMI shields and EMI gaskets to electronic and electrical devices. These shields typically consist of either copper or aluminum foils and the gaskets typically consist of conductive fabric over a foam core. Tape 7765 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.
Important Notice	3M MAKES NO WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. User is responsible for determining whether the 3M product is fit for a particular purpose and suitable for user's method of application. Please remember that many factors can affect the use and performance of a 3M product in a particular application. The materials to be bonded with the product, the surface preparation of those materials, the product selected for use, the conditions in which the product is used, and the time and environmental conditions in which the product is expected to perform are among the many factors that can affect the use and performance of a 3M product. Given the variety of factors that can affect the use and performance of a 3M product, some of which are uniquely within the user's knowledge and control, it is essential that the user evaluate the 3M product to determine whether it is fit for a particular purpose and suitable for the user's method of application.
Limitation of Remedies and Liability	If the 3M product is proved to be defective, The exclusive remedy, at 3M's option, shall be to refund the purchase price of or to repair or replace the defective 3M product. 3M shall not otherwise be liable for loss or damages, whether direct, indirect, special, incidental, or consequential, regardless of the legal theory asserted, including, but not limited to, contract, negligence, warranty, or strict liability.

3M

No.8 Xing Yi Road, Shanghai
200336 P.R.C.