

3M™ Electrically Conductive Gasket Tape MSG7000SDX Series

Product Description

3M™ Electrically Conductive Gasket Tape MSG7000SDX Series consists of a conductive fabric, a grey highly conductive foam, and conductive pressure sensitive adhesive (CPSA). It offers excellent grounding performance between substrates and high EMI shielding performance. 3M tape MSG7000SDX series offers very small contact resistance even at a slight compression rate, and/or with a small die-cut size. The unique structure of MSG7000SDX makes it an excellent solution for EMI shielding designs with a wide-gap tolerance or requiring high compressibility.

Key Features

- Highly compressible foam structure for wide range gap filling capacity
- Excellent EMI/EMC shielding performance
- Reliable adhesion with a 3M conductive PSA
- Multiple thicknesses constructions available for design flexibility
- Low resistance with a small die-cut size
- Supplied on a removable liner for easy handling and die-cutting
- Halogen-free*

*Halogen Free is defined as having maximum 900 ppm bromine, maximum 900 ppm chlorine, and maximum 1500 ppm total bromine and chlorine, per IEC 61249-2-21.

3M™ Electrically Conductive Gasket Tape MSG7000SDX Series

Note: The following technical information and data should be considered representative or typical only and should not be used for specification purposes.

Conductive Foam
Conductive Fabric
Conductive Acrylic PSA
PET Film Release Liner

3M™ Electrically Conductive Gasket Tape MSG7000SDX

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.

3M™ Electrically Conductive Gasket Tape MSG7000SDX Series	
Property	Value
Foam Type	Metal-plated Polyurethane Foam
Carrier Type	Conductive Foam Laminated with Conductive Fabric
Adhesive Type	Transparent Conductive Acrylic Pressure Sensitive Adhesive
Tape Thickness	MSG7030SDX - 0.3 mm nominal MSG7045SDX - 0.45 mm nominal MSG7060SDX - 0.6 mm nominal MSG7080SDX - 0.8 mm nominal MSG7100SDX - 1.0 mm nominal MSG7150SDX - 1.5 mm nominal MSG7200SDX - 2.0 mm nominal MSG7250SDX - 2.5 mm nominal MSG7300SDX - 3.0 mm nominal
Liner Type & Color	Transparent PET Liner 0.075 mm typical

Note: 3M gasket tape MSG7000SDX series is available in standard and custom widths and lengths. Standard width is 500mm. Please contact 3M to review custom width and length options.

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

3M™ Electrically Conductive Gasket Tape MSG7000SDX Series		
Property	Test Method	Typical Value
90° Peel Adhesion (dwell 20 min @ RT)	ASTM D3330* (Adhesion to SUS)	0.25N/mm
Surface Resistance of foam	ETM-11**	0.02Ω
Shielding Effectiveness @ 1-6GHz	MIL-DTL-83528	~80db typical

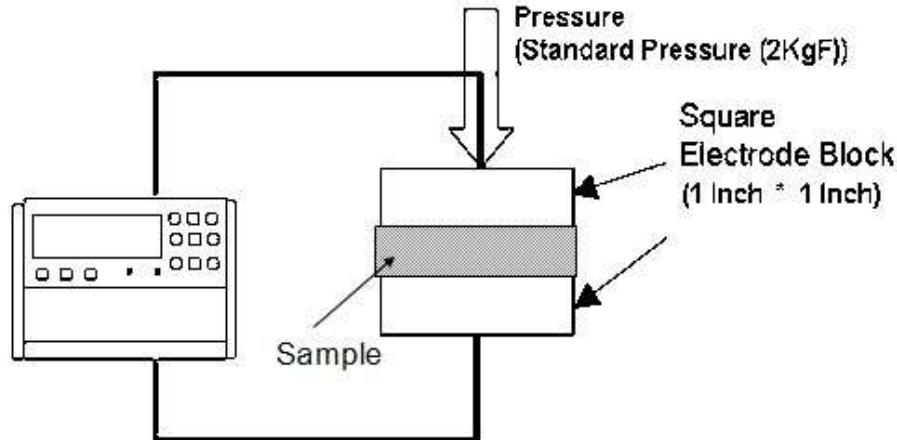
*Methods listed as ASTM are tested in accordance with the ASTM method noted

**3M test method notes attached

3M™ Electrically Conductive Gasket Tape MSG7000SDX

3M ETM-11: Contact Resistance Test Method

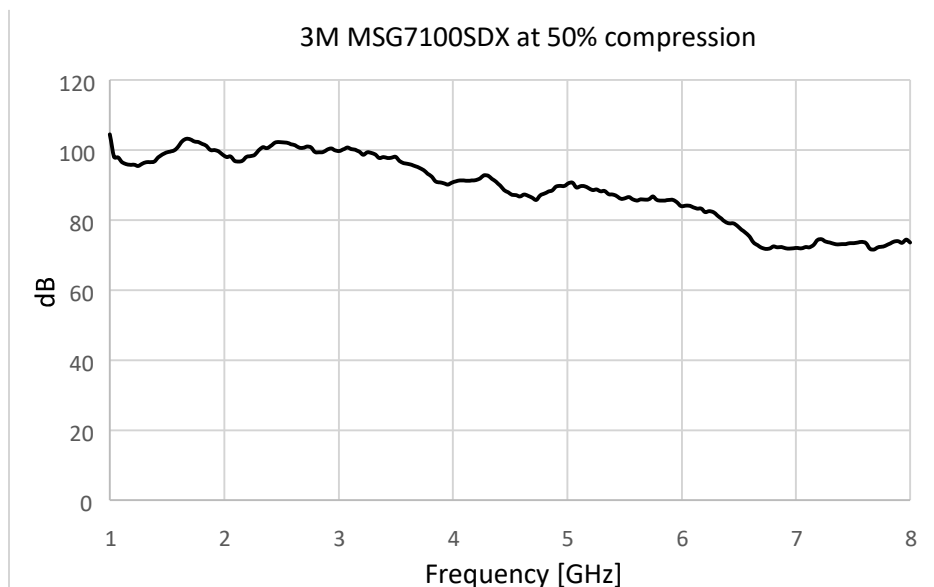
Place 1 square inch of conductive tape on the bottom of the gold plated electrode and get 2Kg rubber roller to shuttle once on the electrode, then place the 2Kg gold plated electrode onto the tape and start measuring the DC resistance between the electrodes with micro-meter and record the resistance after 30 seconds (Refer to and modified MIL-STD-202 Method 307).



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 gasket tape MSG7000SDX 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.

Test method: MIL-DTL 83528



3M™ Electrically Conductive Gasket Tape MSG7000SDX

Applications:

3M™ Electrically Conductive Gasket Tape MSG7000SDX series is typically used for applications requiring high compression and excellent electrical conductivity to provide a highly reliable conductive connection. Common uses include applications involving small, die-cut sizes and larger gap tolerances. It is also an excellent option for ESD grounding or creating a close conductive enclosure to provide excellent EMI shielding performance.

Application Techniques:

The bond strength of 3M™ Electrically Conductive Gasket Tape MSG7000SDX 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. Pressure must be applied to the bond area after assembly to help ensure sufficient wet-out of the adhesive to the substrates. 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 and final bond. 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. Typical surface cleaning solvents include 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.

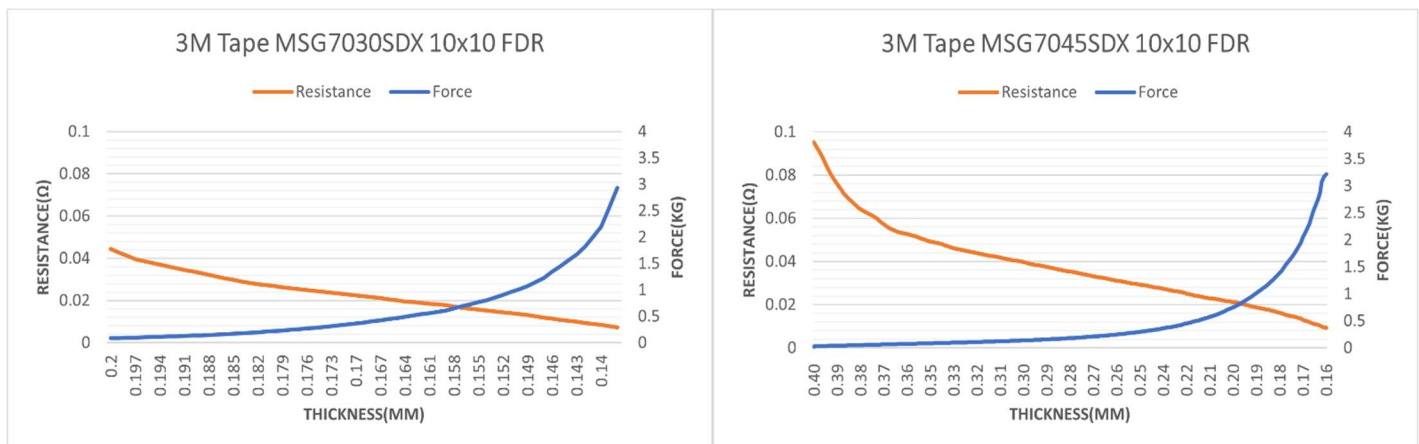
Typical Operating Temperature Range

The typical long-term operating temperature range is -40°C to 80°C (-40°F to 176°F), and the typical short-term operating temperature range is -40°C to 105°C (-40°F to 221°F). Long term exposure ranges days-weeks, while short-term ranges minutes-hours.

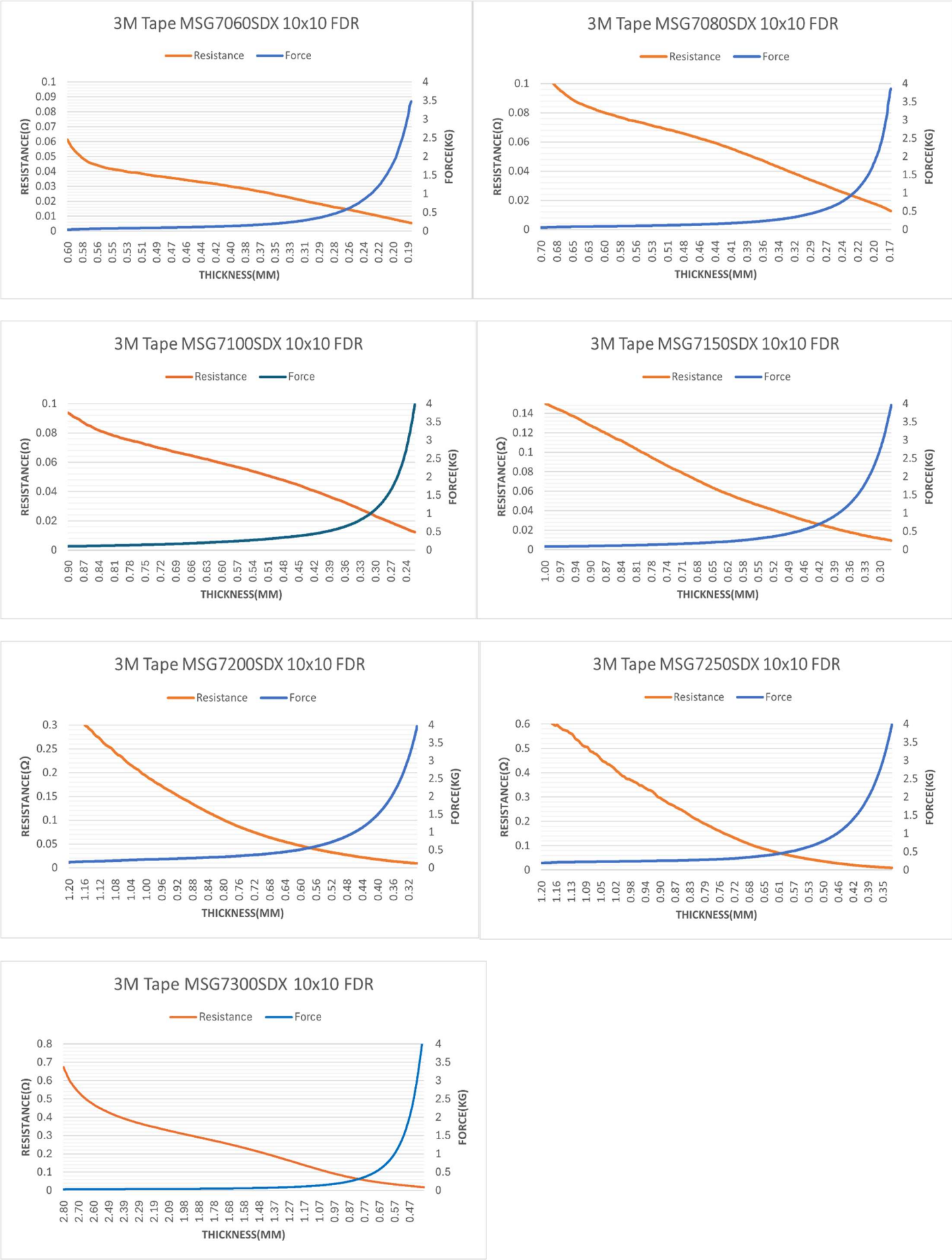
At extremely low temperatures, the polyurethane foam may harden and become unsuitable for repeated compression or applications requiring ongoing thermal cycling or compression.

Force-Displacement-Resistance (FDR) Curves

FDR analysis using FDR tester to generate resistance-displacement and force-displacement curves with 10 mm x 10 mm samples.



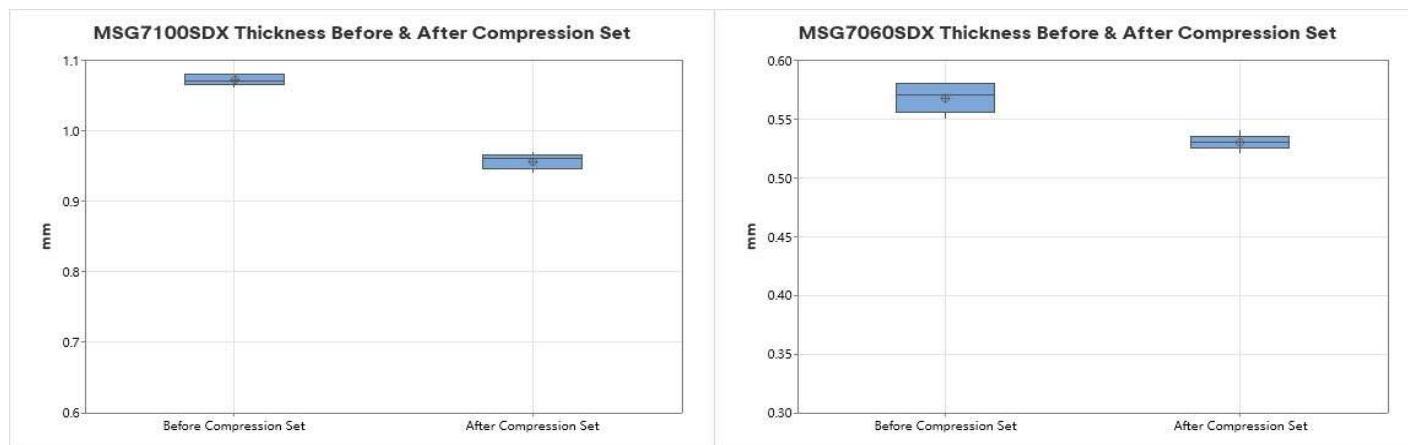
3M™ Electrically Conductive Gasket Tape MSG7000SDX



3M™ Electrically Conductive Gasket Tape MSG7000SDX

Thickness After Compression Set

The thickness was measured following a 50% compression set at 70°C for 24 hours for 3M tape MSG7100SDX and 3M tape MSG7060SDX. The samples were kept at room temperature for 4 hours prior to measurement.



Storage and Shelf Life

The shelf life of 3M™ Electrically Conductive Gasket Tape MSG7000SDX Series is 12 months from the date of manufacture when stored in the original packaging materials and stored at 10°C-25°C (50°F-77°F) and <60% relative humidity.

Once the gasket tape is removed from the original packaging materials, the gasket tape should be converted, shipped and stored in the prescribed temperature and humidity-controlled conditions to help ensure stable tape performance. Adhesion, tack, conductivity and reliability of the tape in an application can be reduced if the tape is not controlled to the prescribed handling and usage conditions.

In addition, in some applications the tape may be converted (die cut, laminated to other materials or release/processing liners) in such a manner that the release liner that the product tape is shipped with is removed and the different release or processing/carrier liner is applied to the adhesive side of the tape. The new release/carrier liner may transfer release agents (silicone, fluoropolymer, etc.) to the tape's adhesive surface and reduce the applied tack and/or adhesion strength of the tape in the end user's application to a surface versus when no release/carrier liner changes have occurred. Any proposed release/carrier liners to be used with the tape should be tested with the tape to help ensure that the tape's performance is not negatively impacted for the intended end use application and that shelf life is not negatively impacted. If a poor performing liner is selected for a liner exchange, it can have a significant negative impact on the conductive gasket tape's adhesion/tack/electrical performance and/or significantly reduce shelf life.

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.

This technical data sheet may contain preliminary data and may not match the COA specification limits and/or test methods that may be used for COA purposes.

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

3M™ Electrically Conductive Gasket Tape MSG7000SDX

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 specifications on the Certificate of Analysis, which is established when the product is manufactured and deemed commercially available and is provided 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 & Electronics
3M Center, Building 223-3S-32
St. Paul, MN 55144-1000 U.S.A.

Phone 1-800-3M HELPS
Web 3M.com/Electronics

3M is a trademark of 3M Company.
All other trademarks herein are the
property of their respective owners.
©3M 2026. All rights reserved.
60-5005-0478-6