Science. Applied to Life.™

Technical Data | July 2019

3M™ Thermally Conductive Interface Tape 8711 Series

3M™ Thermally Conductive Interface Tape (TCIT) 8711 Series is designed to provide a preferential heat-transfer path between heat-generating components and heat sinks or other cooling devices (e.g., fans, heat spreaders or heat pipes).

- These tapes are pressure sensitive adhesives (PSAs) loaded with thermally conductive fillers that require no heat cure cycle to form a bond to many substrates
- 3M tape 8711 series are soft and conformable to many surfaces
- The 3M tape 8711 has excellent thermal stability

Key Features

- Good thermal conductivity (0.6W/m-K)
- Excellent dielectric performance
- Low thermal impedance
- Strong adhesion performance against Al and SUS
- Vibration damping
- Halogen Free

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.

PET liner
Thermally conductive layer
PET liner

3M™ Thermally Conductive Interface Tape (TCIT) 8711 Series	
Property	**Value**
Color	White
Adhesive Type	Soft Acrylic Adhesive
Tape Thickness (mm)	0.05, 0.1, 0.125, 0.15, 0.2, 0.25, 0.3, 0.375, 0.500
Primary Filler Type	Ceramic
Product Liner	PET Film
Roll Length	Standard: 550mm x 50m

3M™ Thermally Conductive Interface Tape 8711 Series

Applications

- General heat sinks bonding
- Automotive sensors applications
- Integrated chip (IC) packaging heat conduction
- Printed circuit board
- LED module/board bonding
- Display assembly (e.g. LCD and LED devices)
- COF chip heat conduction
- Smart phones

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 products Certificate of Analysis (COA) that is shipped with the commercialized product once it is approved by 3M for general commercialization and development work is completed.

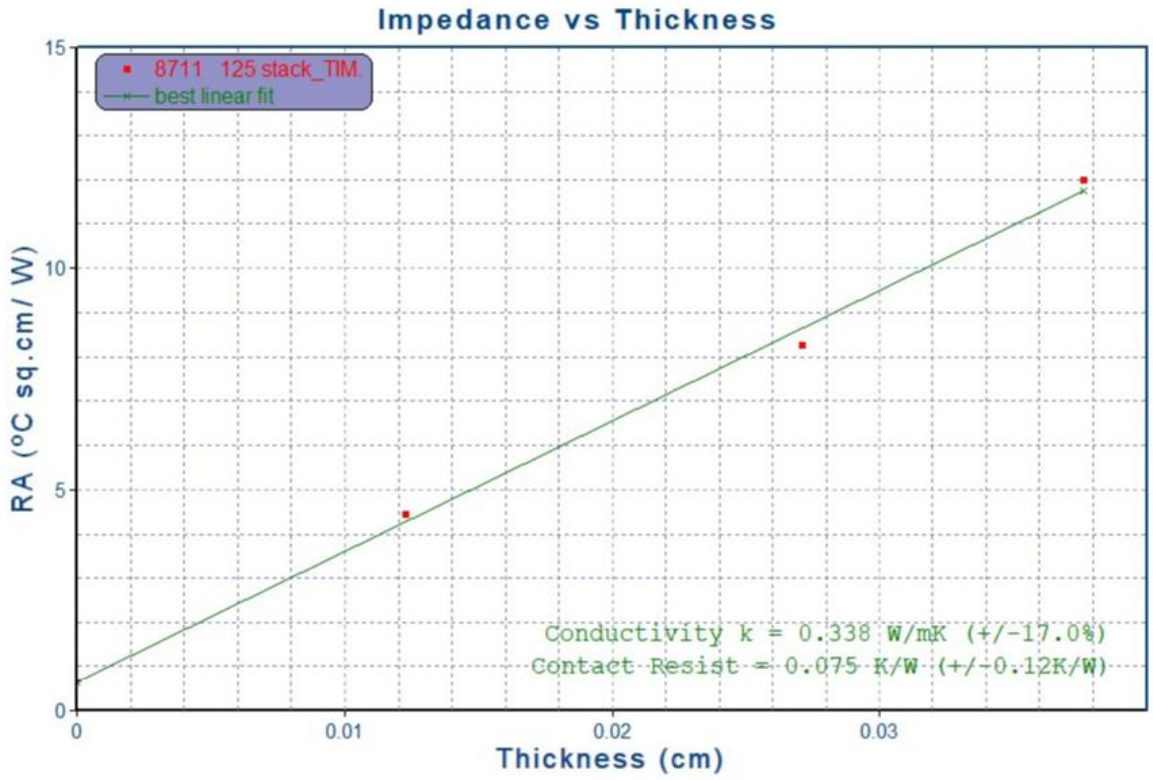
3M™ Thermally Conductive Interface Tape 8711 Series					
Property	**Method[a,b]**	**8711-050**	**8711-100, 125, 150**	**8711-200, 250, 300**	**8711-375, 500**
90° Peel Adhesion (kg/25.4mm) on SS (SUS304) with ASTM D-3330	15 min dwell at 23°C	> 0.5	> 1.0	> 1.5	> 2.0
	72Hr dwell at 70°C	> 1.0	> 2.0	> 3.0	> 3.5
Dynamic Shear Initial Strength (Kg/(25.4mm)^2)	ASTM D-1002	> 30 Kg/(25.4mm)^2			
Static Shear test of holding 1000g @ Room Temp using 25.4mm^2	3M test method	> 1000hrs Kg/(25.4mm)^2			
Dielectric Strength (KV/mm)	ASTM D-149	26 KV/mm			
Foam Density (grams/cm^3)	ASTM D6111	1.2 grams/cm^3			
Flammability **	UL94	V-0			
Thermal conductivity (W/m-K)	ASTM C1113	0.6 W/m-K			
	ASTM D5470	0.34 W/m-K			

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

**Flame rating is only valid for the material coated on one side of aluminum plate with minimum 1.0mm thickness and the other side of recognized component (QMTS2) FR-4 laminate at minimum 0.8mm thickness. (File No. : E239181)

***Note : The end-use customer application, design and verification testing will determine the final in-use effective temperature range based on each application's environmental conditions

3M™ Thermally Conductive Interface Tape 8711 Series



Application Techniques

Note: Be sure to follow manufacturer's safety precautions and directions for use when using solvents.

- Mechanical fastening such as clamp, bracket and screw can be used in parallel with this thermal conductive tape.
- Bond strength is dependent upon the amount of adhesive to surface contact developed. Firm application pressure helps to develop better adhesive contact and improve bonding strength.
- To obtain optimum adhesion, the bonding surfaces must be clean, dry and well unified. Typical surface cleaning solvents are isopropyl alcohol and water (rubbing alcohol) or heptane.
- Ideal tape application temperature range is 21°C to 38°C (70°F to 100°F). Initial tape application to surfaces at temperatures below 10°C (50°F) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

Storage and Shelf Life

The shelf life of 3M™ Thermally Conductive Interface Tape 8711 Series is 12 months from the date of manufacture when stored in the original packaging materials and stored at 21°C (70°F) and 50% relative humidity.

3M™ Thermally Conductive Interface Tape 8711 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, recommendations and other statements contained in this document are based upon tests or experience that 3M believes are reliable, but the accuracy or completeness of such information is not guaranteed.

Product Use: Many factors beyond 3M's control and uniquely within user's control can affect the use and performance of a 3M product in a particular application. Given the variety of factors that can affect the use and performance of a 3M product, user is solely responsible for evaluating the 3M product and determining whether it is fit for a particular purpose and suitable for user's method of application.

Warranty, Limited Remedy, and Disclaimer: Unless an additional warranty is specifically stated on the applicable 3M product packaging or product literature, 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 OR FITNESS FOR A PARTICULAR PURPOSE OR ANY IMPLIED WARRANTY OR CONDITION ARISING OUT OF A COURSE OF DEALING, CUSTOM OR USAGE OR TRADE. If the 3M product does not conform to this warranty, then the sole and exclusive remedy is, at 3M's option, replacement of the 3M product or refund of the purchase price.

Limitation of Liability: Except where prohibited by law, 3M will not be liable for any loss or damage arising from the 3M product, whether direct, indirect, special, incidental or consequential, regardless of the legal theory asserted, including warranty, contract, negligence or strict liability.

Electronics Materials Solutions Division
3M Center, Building 224-3N-11
St. Paul, MN 55144-1000
1-800-251-8634 phone
651-778-4244 fax
www.3M.com/electronics

3M is a trademark of 3M Company.
Please recycle.
©3M 2019. All rights reserved.
60-5002-0850-3