

3M™ Thermally Conductive Heat Spreading Tape 9876

Product Description

3M™ Thermally Conductive Heat Spreading Tape (TCoHST) 9876 is designed to provide excellent in-plane thermal spreading performance, helping dissipate heat quickly by creating a preferential heat-transfer path between heat-generating components and designated cooling devices (e.g., heat sink, heat pipes, and metal frame). These tapes have a copper color top-side appearance with an acrylic PSA on the bottom. Available in 100- and 150-micron thickness.

Key Features

- High thermal conductivity in the XY plane (>250 W/m-K)
- Selective thermal spreading path for uniform heat distribution
- Excellent dielectric performance
- Excellent flexibility
- Low thermal impedance
- Easy workability and handling convenience
- No debris and no need for sealing during die-cut process
- Good and reliable adhesion performance against Al and SUS

Product Construction

	Copper Film
	Thermally Conductive Acrylate Adhesive
	Protective Release Liner (PET or Paper)

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™ Thermally Conductive Heat Spreading Tape 9876		
Property	9876-10	9876-15
Adhesive Type	Acrylic Adhesive	Acrylic Adhesive
Tape thickness (mm)	0.100	0.150
Density (g/cm³)	5.2	5.4
Base Material	Copper	Copper
Product Liner	Release Coated White Paper Liner	3M Logo Printed Film Liner
Standard Roll Length	50 m (custom size can be supplied by request)	

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Typical Product Uses

This product is typically used for heat management in electronic devices and for general heat diffusing in devices.

Typical Applications

- Heat spreading sheet on FPD (Flat Panel Display) for thin, space constrained devices
 - LCD with LED BLU
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 - OLED Module
- Heat spreading/conduction on lighting, ECU, solar cell, 2nd battery, and electrical recharger module
- Heat distribution on LED module/board
- Small display for MHH as LCD and OLED
- COF chip thermal management for uniform temperature

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.

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Property	Method	9876-10	9876-15
Thermal Conductivity - W/mK (X-Y / Z-axis)	ASTM D5470	> 250 / 0.80	> 270 / 0.8
Thermal Impedance - °C-cm ² /W	3M Test Method	0.3	0.45
90° Peel Adhesion – kg/12.7 mm width Initial (15 min dwell at RT) Heat Aging (72 hr dwell at 70°C) SUS 304 test substrate	ASTM D3330	>1.0 >2.5	>1.2 >2.5
Static Shear 500 gram/inch ² at RT 250 gram/inch ² at 70°C (holding for 10,000 min)	3M Test Method	PASS PASS	PASS PASS
Dielectric Strength (AC)	3M Test Method	2.9 kV/0.1mm	3.6 kV/0.15mm

Application Techniques

- 3M tape 9876 should be applied in a manner to minimize wrinkles, bubbles and folds so as to maximize the heat spreading performance of the product along the desired XY plane.
- Bonding 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.
Note: Be sure to follow manufacturer's safety precautions and directions for use when using solvents.
- 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.

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Storage and Shelf Life

The shelf life of 3M™ Thermally Conductive Heat Spreading Tape 9876 is 24 months from the date of manufacture when stored in original packaging material and stored at 21°C (70°F) and 50% 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.

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

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