3M™ Thermally Conductive Interface Tape 8708 Series

Product Description

3M™ Thermally Conductive Interface Tape 8708 series have a pressure sensitive adhesive tape filled with thermally conductive ceramic particles. This product has different adhesion strength on top and bottom. 3M tape series 8708 demonstrates strong adhesion performance on the liner side through a uniquely constructed PSA layer. Softness of this product is good enough to wet-out well on uneven surfaces with normal bonding pressure (~1kgf/cm²) and maintains the holding power under some severe environmental conditions.

Key Features

- Good thermal conductivity (0.6W/m-K)
- Electrically insulating
- Low thermal impedance
- Good and reliable adhesion performance for aluminum (Al) and steel use stainless (SUS)
- Vibration damping

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.

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Property	Value
Color	Yellowish white
Adhesive Type	Soft acrylic adhesive
Tape Thickness	0.13 mm, 0.25 mm, 0.50 mm
Primary Filler Type	Ceramic
Product Liner	130 µm paper liner with red “3M electronics” logo
Standard Roll Length*	40 MT

* Custom sizes may be available. Contact your local 3M representative for more information.

Applications

- General heat sink bonding
- IC chip packaging heat conduction
- Printed circuit boards (PCB)
- LED module/board bonding
- Flat panel display assembly (e.g. LCD and PDP devices)
- COF chip heat conduction

Mechanical fastening such as clamp, bracket, and screw can be used in parallel with this thermal conductive tape.

Application Techniques

- 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.
  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.

Typical Physical Properties and Performance Characteristics

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Property		Method[a]	8708-013	8708-025	8708-050
Thickness (mm)		—	0.13	0.25	0.5
90° Peel Adhesion (g/25.4mm) SUS304 test substrate	Liner side Non-liner side	ASTM D-3330 15 min dwell at 23°C	> 2000 > 800	> 2000 > 800	> 2000 > 800
	Liner side Non-liner side	ASTM D-3330 72 hrs dwell at 70°C (for reference)	> 3000 > 1000	> 3000 > 1000	> 3000 > 1000
Dynamic Shear Initial Strength (Kg/in²)		ASTM D-1002	> 20		
Foam Density (grams/cm³)		—	1.50		
Dielectric Strength (kV/mm)		ASTM D149	15		
Thermal Conductivity (W/mK)[b]		ASTM C1113	0.6		

[a] Methods listed as ASTM are tested in accordance with the ASTM method noted

[b] Thermal Conductivity Test Methods:

- 0.6W/m-K in XY direction per Hot wire plane Test method (Test equipment: QTM-500)
- 0.6W/m-K in Z direction tested in accordance with a simplified ASTM D5470 type method (Test equipment: Tester DynTIM)

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

Storage and Shelf Life

The shelf life of 3M™ Thermally Conductive Interface Tape 8708 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.

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.

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