

QiFlo™ HM-3 Thermally Conductive Adhesive

Description

QiFlo™ HM-3 is a space-qualified, high thermal conductivity (extremely low thermal resistance) hot-melt adhesive film for demanding applications.

Highly dense packing of non-metallic fibers enable lowest in class thermal resistance and offers highly repeatable performance over 50,000 + cycles between -55 and +165°C (bonded configuration)

Key Features

- Accepted as spacecraft material through ASTM E595 outgas testing
- Lowest in class thermal resistance: 0.009 °C-in²/W @ 75 µm bond line thickness (BLT)
- Thermal conductivity in bonded configuration: 44 W/m K, bulk thermal conductivity ~ 750 W/mK
- High reproducibility and reliability
- Long term durability (>50,000 cycles)

Typical Applications

- Microprocessors
- LED assemblies
- Power electronics
- Other high thermal load applications

Patent Protection

- Protected under US Patent # 9346991 and Japanese Patent # 5809349. Patent pending.

Material Properties

ADA Technologies, Inc.

11149 Bradford Rd.
Littleton, CO 80127

Property	QiFlo™ HM-3
Description	Thermally conductive adhesive
Form	Curing pre-formed film
Color	Gray
Z-Axis Thermal resistance (ASTM D5470)	0.009 °C-in ² /W @ 75 µm BLT
Z-Axis Thermal conductivity (incl. interfacial thermal resistance)	44 W/m-K
Z-Axis Electrical Resistance	0.1 – 0.2 Ω
ASTM E595 (Outgas Test)	TML – 0.13%, CVCM – 0.04%, WVR – 0.05%**
Coefficient of Thermal Expansion	Z-Axis: 0 ppm/°C X-Y Plane: 45 ppm/°C
Young's Modulus	X-Axis: 75 Ksi (0.45 GPa) Y-Axis: 15 Ksi (0.09 GPa)
Ionic Purity	Hydrolyzable Chloride <5 ppm Hydrolyzable Sodium <2ppm
Reworking Temperature	205 °C
Shelf Life	6 months (27 °C)

** TML- Total Mass Loss; CVCM- Collected Volatile Condensable Material;
WVR – Water Vapor Recovered

Application Methods

1. Use proper surface preparation for your application and ensure interface surfaces are dry and free of dust before application of QiFlo™ HM-3.
2. Apply pressure at room temperature (100 psi).
3. Heat to temperature (185 °C at the bondline).
4. Allow to cool while maintaining pressure on the bond.
5. Release pressure once cool.

Email: Russf@adatech.com

Phone: (303) 874-8269

<https://www.adatech.com/high-performance-materials>