

# TIM-813

## One Part-Thermally Conductive Epoxy

### DESCRIPTIONS

**TIM-813** is a thermally conductive, one part thixotropic epoxy adhesive. With a relatively low heat cure, it develops excellent bond strength to most substrates including metals, wood, engineering thermoplastics, composite matrix and ceramics. It offers high heat transfer, low shrinkage and low coefficient of thermal expansion.

**Applications:** This adhesive is principally used to form thermally conductive joints in fabricated heat sinks and power devices. Fabricating heat sinks. Bonding semiconductors and transistors to heat sinks.

### INSTRUCTION FOR USE

- Use dispensing equipment for best results.
- For small applications, apply the product using a syringe or clean spatula.
- Avoid air entrapment to obtain optimum cured properties.
- Proceed with the bonding application and cure as recommended.
- Typical cured properties were determined using recommended cure schedule. Some difference in properties may occur with the alternate or other cure schedules.

**Note:** Refer to Safety Data Sheet (**SDS**) for additional health and safety information.

### AVAILABILITY

Syringes (10cc, 30cc). Jars/Can (16 oz & 1qt). Cartridges (300cc). 1 gallon & 5 gallon pail

Typical Property	Test Method	Value
Type		One Part/Heat Cure
<b>Special Feature</b>		<b>High Bond Strength. Sag Resistance</b>
Color	Visual	Black
Viscosity 5 rpm @ 25°C, PaS	Brookfield	800-1600
Specific Gravity	ASTM D792	2.1
Pot Life @ 80°C. Minutes		30
Recommended Cure Alternate Cure		1 hr@100°C+1 hr@150°C 30 minutes@150°C
Operating Temperature Range.°C		-55°C to 200°C
Shelf Life		4 months(25°C) 6 months (5°C)
<b>Cured Properties</b>		
Hardness, Shore D	ASTM D2240	93
Glass Transition Temperature.°C	DSC	145°C
Lap Shear Strength to Aluminum. PSI	ASTM D1002	2620 (25°C) 2400(100°C)
Coefficient Of Thermal Expansion (CTE), 10 <sup>-6</sup> /°C	ASTM E831	27.5 (-55°C- 25°C). 37.8(25°C-100°C)
Thermal Conductivity (W/m-K)	ASTM D5470	<b>1.8</b>
Breakdown Voltage (KV/mm)	ASTM D149	18
Dissipation Factor (1KHz)	ASTM D150	0.04
Volume Resistivity (Ohm-cm)	ASTM D257	10 <sup>15</sup>

**DISCLAIMER:** All statements, technical information, and recommendations related to Timtronics products are based on information believed to be reliable, but accuracy or completeness is not guaranteed. Before using this product, you must evaluate it and determine if it is suitable for your intended application. You must assume all risks and liability associated with such use. Timtronics will not be liable for any indirect, special, incidental or consequential loss or damage arising from this product, regardless of legal theory asserted.