

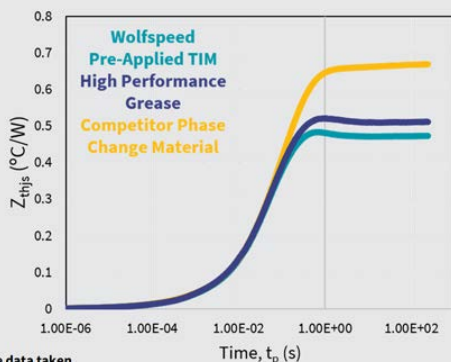
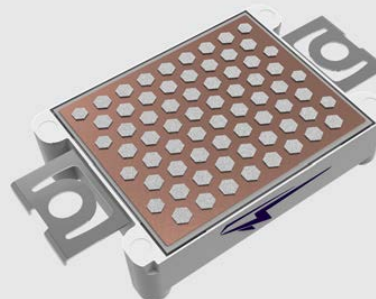


# WolfPACK™ Pre-Applied Thermal Interface Material (PATIM)

## BETTER THERMAL MANAGEMENT BETTER APPLICATION PERFORMANCE

Wolfspeed now offers pre-applied Thermal Interface Material on all FM and GM WolfPACK™ products. The pre-applied phase change material offers exceptional handling capability, significantly lower thermal resistance and higher power cycling capability compared to grease-based solutions.

With highly thermally conductive Honeywell™ TIM, thermal resistances can be minimized between the device substrate and its heat exchanger.



Sample data taken from CCB032M12FM3T



Lower junction temperature  $T_j$

Enhanced System Lifetime

TIM	$R_{thjs}$ (p.u)
Competitor Phase Change Material	1.0
High Performance Grease	0.77
Wolfspeed PATIM	0.70

### Better Thermal Resistance Enabling Increased Ampacity



### FEATURES

- Honeywell™ PTM6000 Series TIM
- 45  $^{\circ}C$  phase change temperature
- High stability at room temperature



### BENEFITS

- Best-in-class overall thermal impedance for bond line thickness
- Reduction in handling costs
- Increased application lifetime and overall reliability



### APPLICATIONS

- Industrial Motor Drives
- Heat Pump and Air Conditioning
- Solar and Renewable Energy
- Power Supplies
- Induction Heating and Welding
- EV Fast Charging

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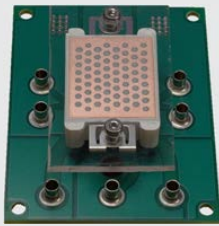
Rev. 1, May 2023

## WolfPACK™ PATIM

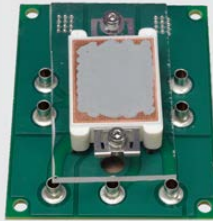
### DELIVERING THE INDUSTRY'S HIGHEST PERFORMING PACKAGE-TO-INTERFACE THERMAL RESISTANCE

Optimized polymer and filler technology enable superior handling and workability due to compound phase change state occurring at 45 °C for robust, top-down application design.

The material properties of the PATIM provide best-in-class viscosity and reflow when operating in normal operating ranges for low contact resistance. Without compromise, the reflow additionally fills the microscopic gaps between the substrate voids and the heat exchanger.



**Pre-mounted PATIM module**



**Post-mount PATIM module after burn-in**



### LEVERAGE APPLICATION PERFORMANCE THROUGH IMPROVED ELECTROTHERMAL DESIGN



#### Pre-applied TIM Technical Specs

Physical Properties	Value
Thermal Conductivity	5.2 W/mK
Specific Gravity (Uncured)	2.6 g/cm <sup>3</sup>
Viscosity (@2 1/s, 25 °C)	>1500 Pa.s

## Why Wolfspeed Silicon Carbide?

### Wolfspeed Invented the Silicon Carbide MOSFET

35+ years of Silicon Carbide power with 7+ trillion installed field hours

### Wolfspeed is Investing for the Future

#1 market share in Silicon Carbide technology, with the world's first, largest, and only 200mm Silicon Carbide fabrication facility

### 17+ Years of Diode and MOSFET Production

Thousands of customers with millions of MOSFETs, Diodes and Modules

### Focused Development and Customer Support

ALL resources dedicated to developing Silicon Carbide capacity, devices, packages, and to providing superior applications support

### We Provide Silicon Carbide Solutions

- » Silicon Carbide power devices
- » Silicon Carbide expertise—this is all we do
- » Application reference designs
- » Expert systems engineering support
  - » Visit [forum.wolfspeed.com](http://forum.wolfspeed.com)
- » SpeedFit™ online simulation platform



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