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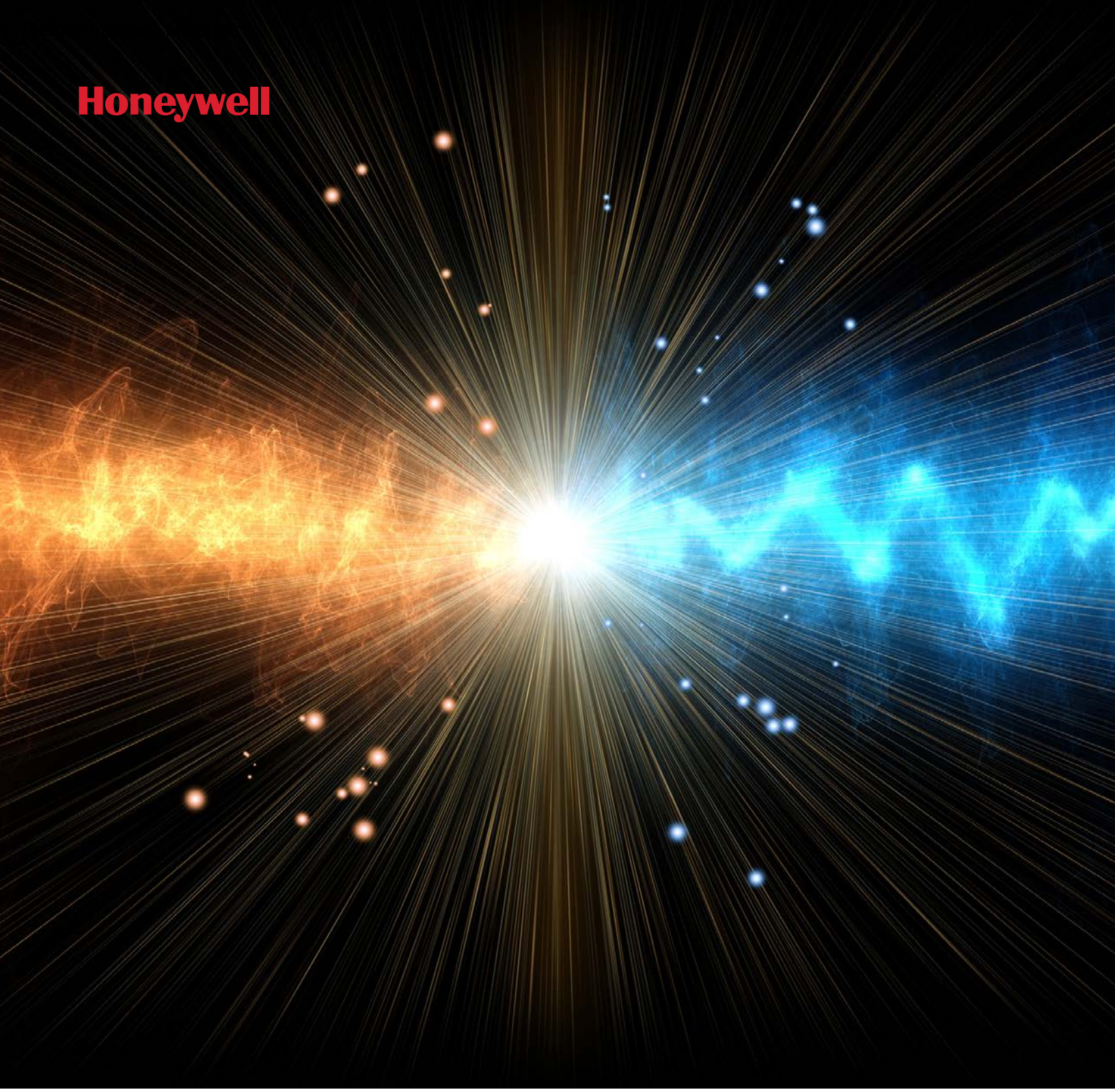


Thermal Interface Materials

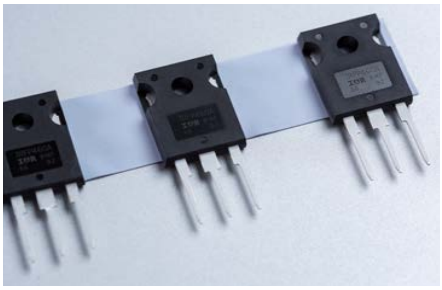
TIP Series
Thermal Insulators

THERMAL INSULATORS

The TIP series is Honeywell's latest high-performance thermal conductivity and insulation material. It is made with silicon resin as the matrix, reinforced with glass fiber as the substrate.

TYPICAL APPLICATIONS

- Automotive electronics
- Power conversion equipment
- Power supply equipment
- Motor controllers
- Speaker amplifier
- Power switch



The TIP series provides low thermal impedance and high insulation for high power and high voltage applications.

Storage & Use

Shelf Life: 12 months at 23±2°C

Configurations Available

Sheet form and die-cut parts

TIP1500, TIP3500

HIGH THERMAL CONDUCTIVITY, ELECTRICAL INSULATION

TIP1500 combines 1.5 W/m·K, and TIP3500 combines 3.5 W/m·K thermal conductivity, with superior insulation. TIP1500 and TIP3500 are designed to be soft and conformal, which provides excellent mating surfaces for low-pressure mounting. TIP1500 is offered in 0.19 and 0.23mm thickness. TIP3500 available thicknesses range from 0.25mm to 0.50mm.

FEATURES

- High thermal performance
- High breakdown voltage
- Good resistance to tears, cut-throughs and punctures
- Single side PSA available for easy assembly

TYPICAL PROPERTIES

PROPERTY	TIP1500	TIP3500	TEST METHOD
Properties			
Color	Pink	Blue	Visual
Thickness (mm)[2]	0.19, 0.23	0.25-0.50	ASTM D374
Hardness (Shore A)	90	80	ASTM D2240
Specific Gravity	2.21	2.47	ASTM D792
Thermal Properties			
Thermal Conductivity (W/m·K)	1.5	3.5	ASTM D5470
Thermal Impedance °C·in²/W @10psi (typical value)	0.91@0.19mm 0.93@0.23mm	0.23	ASTM D5470
Thermal Impedance °C·in²/W @50psi (typical value)	0.54@0.19mm 0..61@0.23mm	0.18	ASTM D5470
Electrical Properties			
Dielectric Breakdown Voltage (V)	>6000	>6000	ASTM D149
Dielectric Constant @1MHz	5.50	3.30	ASTM D150
Volume Resistivity (ohm·cm)	1×10^{13}	5×10^{13}	ASTM D257
Flammability			
Flammability Rating	V-0	V-0	UL94

[2] Thickness tolerance: TIP1500: ±0.01mm, (±0.02mm for single side PSA product), TIP3500: ±10%

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Executive Summary

Honeywell TIP3500 , a softer gap pad with ultra-high compressibility enables low stress and excellent conformity to mating surfaces. It is designed to minimize thermal resistance at interfaces, and maintain excellent performance through reliability testing.

Based on a novel polymer system, this material exhibits excellent reliability. A proprietary filler material provides high thermal conductivity 3.5W/m ·K suitable for high performance devices.

Conclusion :

TIP3500 has excellent thermal stability after different long term reliability tests including, D85(85˚C&85%RH) 1000hrs, Thermal Shock 1000cycles and HTB(High Temperature Baking) 125˚C 1000hrs.

WORLDWIDE DEVELOPMENT, MANUFACTURING AND SUPPORT

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Santa Clara, California
Sunnyvale, California
Spokane, Washington
Chandler, Arizona
Salt Lake City, Utah
Bryan, Texas
Houston, Texas
Mansfield, Texas
Fombell, Pennsylvania
Morristown, New Jersey

Europe

Seelze, Germany

Asia

Shanghai, China
Jincheon, Korea
Tokyo, Japan
Yaita, Japan
Chonburi, Thailand
Hsinchu, Taiwan
Singapore

▲ Research & Development Site ● Manufacturing Site ■ Support Site

HONEYWELL TIM ADVANTAGES

Quality

- Industry-leading reliability over device lifetime
- More than twenty years specializing in TIM materials R&D and manufacturing
- Proprietary formulations optimized for the needs of specific applications
- Proven, long-standing supplier with multiple worldwide quality certifications

Customer Focused

- Serving diverse range of customers
- TIMs offered in both pad and paste formats for ease of application
- Superior global technical support
- Portfolio of other materials, such as thermal spreaders, electrical interconnect and pure metals

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