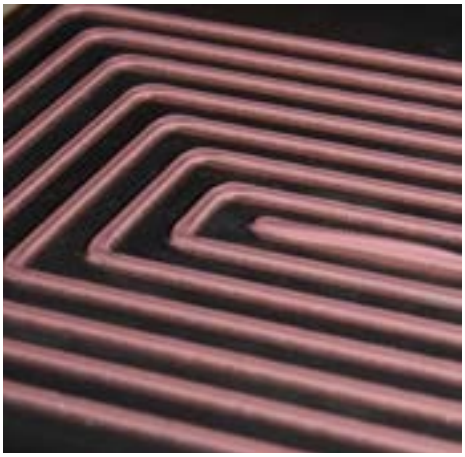
SELL SHEET

DOWSIL™ TC-2035 Adhesive

Two-part heat-cured thermally conductive silicone



Key features

- Thermal conductivity: 3.3 W/mK
- Minimum bond line thickness of 50 µm
- Reliably bonds organic and ceramic thermal substrates to heat sinks
- Delivers long-lasting performance at temperatures reaching 200°C
- Fast cure

Potential uses

Thermal interface for high-power-density automotive PCB system assembly modules

Typical applications

- Electric drivetrains
- PCB systems control modules
- Automotive underhood PCB system assemblies

Application method

- Automated or manual needle dispense
- Vacuum bonding process

Description

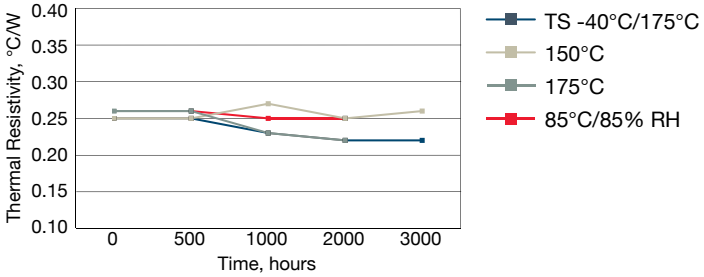
DOWSIL™ TC-2035 Adhesive is a two-part heat-cured silicone that bonds reliably to a variety of thermal substrate types, including direct bonding copper, high-density interconnect, low-temperature co-fired ceramic and printed circuit board. This high-performing adhesive dramatically reduces thermal resistivity by delivering outstanding 3.3 W/mK thermal conductivity and a minimum bond line thickness (BLT) as low as 50 µm. Delivering consistently high performance at temperatures reaching 200°C, DOWSIL™ TC-2035 Adhesive was designed to deliver reliable long-term bonding and efficient thermal flow for next-generation applications, such as power PCB system assembly modules for electric and hybrid electric vehicles. Offering decades of expertise serving the automotive PCB system assembly industry, Dow offers extensive support in processing thermally conductive silicone adhesives and can provide valuable design and application support.

Material properties

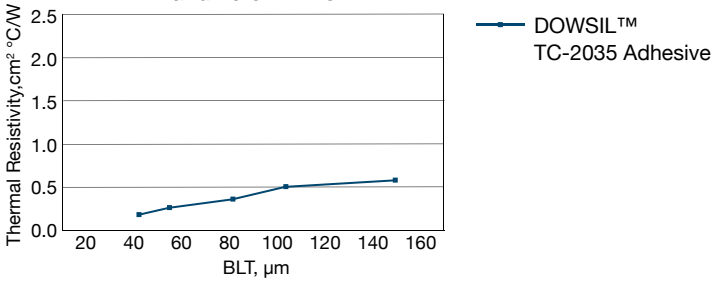
Property	DOWSIL™ TC-2035 Adhesive
Description	Thermally conductive adhesive
Form	Two-part, heat cure
Mix ratio	1:1
Viscosity, Part A	130 Pa-s
Viscosity, Part B	130 Pa-s
Viscosity, mixed	130 Pa-s
Density (cured)	3.0 g/cm^3
Viscosity after 4 hours of working time @ 25°C	116 Pa-s
Tensile strength	3.6 MPa
Heat cure time at 125°C	30 minutes
Heat cure time at 150°C	10 minutes
Elongation	43%
Durometer, Shore A (JIS)	95
Unprimed adhesion (lap shear to aluminum)	309 N/cm^2
Unprimed adhesion (lap shear to copper)	287 N/cm^2
Thermal conductivity	3.3 W/mK
Volume resistivity	1.3 E+16 ohm*cm
Dielectric strength	21 kV/mm
Minimum BLT	50 µm
Thermal resistivity at minimum BLT	0.25°C/W
Coefficient of thermal expansion	18 ppm/K

Performance data

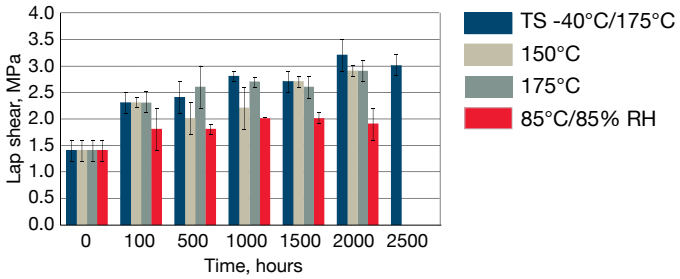
Thermal resistivity aging at 50 µm BLT



Thermal resistivity at different BLTs



Adhesion strength reliability DOWSIL™ TC-2035 Adhesive



Important features and benefits

Features	Benefits
High thermal conductivity	• Reduced thermal resistance • High performance at very thin bond lines (50 µm)
Bonds both organic and ceramic substrates to heat sinks	Adheres to: • Direct bonding copper • High-density interconnect • Low-temperature co-fired ceramic • Printed circuit board
Thermal stability at temperatures reaching 200°C	Long-lasting reliable performance in high-power-density PCB system assembly applications

Learn more

We bring more than just an industry-leading portfolio of advanced silicone-based materials. As your dedicated innovation leader, we bring proven process and application expertise, a network of technical experts, a reliable global supply base and world-class customer service.

To find out how we can support your applications, visit dow.com/pcb.

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