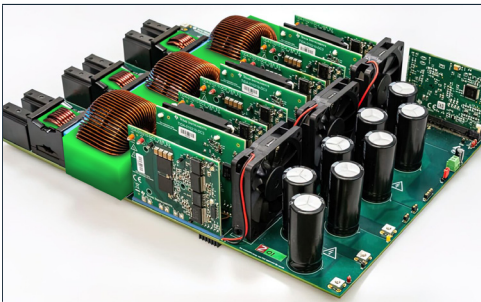


COOLTHERM® MATERIALS

Power Electronics Application

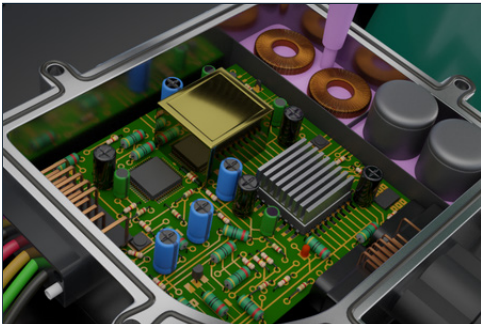
Protect components and improve stability. In order to extend the life of your power electronics, you need to maintain low thermal resistance and protect components from shock, moisture and debris. CoolTherm® low viscosity, highly thermally conductive potting materials provide a robust thermal interface, as well as protect delicate electrical components.

Additionally, we offer a variety of other thermal interface materials that will not only improve heat flow but also provide excellent isolation and vibration damping. Our dedicated technical service staff will work with you on a customized solution and can help select the correct material for your application that aligns with your cost targets and process for improving performance.



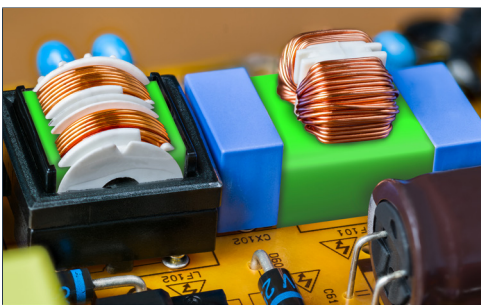
Inverters

The inverter's performance and durability are significantly impacted by its ability to manage heat, especially since it operates at high voltages and currents. Thermal management materials enhance heat dissipation, not only improving thermal conductivity but also providing mechanical cushioning to absorb vibrations and shocks.



On-Board Chargers

As on-board chargers handle high power levels, they generate significant amounts of heat, necessitating the use of advanced thermal management materials to maintain optimal temperatures. Thermally conductive potting and encapsulants provide electrical insulation while efficiently dissipating heat, protecting sensitive components from overheating.



Converters

Efficient thermal management in these converters is essential to maintain optimal performance, efficiency and longevity. Thermal management materials, such as thermally conductive gels, and adhesives, play a pivotal role in dissipating heat away from sensitive electronic components.

Gap Fillers

Get the best performance out of your power electronics by filling in surface imperfections with a thermally conductive gap filler designed with electrification applications in mind. Our gap fillers are available in a range of options, from flexible, low-strength options that ensure serviceability, to products with higher tensile strength and adhesion properties, providing increased strength and structure upon full cure. We also offer low ppm siloxane solutions for sensitive electronic applications.

GAP FILLERS	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	SHORE HARDNESS (00)	DENSITY (g/cm ³)
	CoolTherm® SC-1600	Silicone	3.7	89	3.3
	CoolTherm SC-2000 SLW	Silicone	2.0	65	2.0
	CoolTherm UR-2000	Urethane	2.0	D55	2.6
	CoolTherm SC-3000 LD	Silicone	3.0	75	2.4

- Two-Component
- Low Outgas Options
- Room Temperature and Heat Curing
- Electrically Isolative
- 1:1 Mix Ratio
- Protect Against Shock
- Damp Vibration

Adhesives

Formulated for dispensability, either in high flow rate environments in MMD equipment or manually dispensed via cartridge or convenience packaging, our adhesives provide rigidity, structural integrity and a thermal connection where heat is a problem. With our adhesives, you are no longer constrained by mechanical fixtures and can bond a variety of substrates, which can simplify your overall design.

ADHESIVES	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	LAP SHEAR STRENGTH (MPa)
	CoolTherm TC-2002	Acrylic	1.0	15.8 on aluminum
	Maxlok™ T6S	Acrylic	–	24.3 on aluminum
	LORD® 5206/55GB	Acrylic	–	19.3 on aluminum
	LORD 7545-A/B	Urethane	–	16.2 on e-coated steel
	LORD 850S/25GB	Acrylic	–	18.1 on aluminum

- Variable Cure Speeds
- Electrically Isolative
- Improve Design Flexibility
- Reduce Complexity
- Room Temperature and Heat Curing

Greases

Our experts understand that different power electronic applications require different solutions. We offer a broad portfolio of greases to meet your unique specifications.

GREASES	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	VISCOSITY (cP @25°C)
	CoolTherm SC-6754	Silicone	0.5	500,000
	CoolTherm TC-404	Silicone	4.3	141,800
	CoolTherm TC-501	Silicone	3.6	128,400

- Resist Pump-Out
- Protect Against Shock

Potting & Encapsulants

Our encapsulants facilitate optimum heat transfer because of their high thermal conductivity and low viscosity. Additionally, potting and encapsulants provide protection from dust and moisture and can reduce vibration. Our two-component encapsulants exhibit minimal shrinkage during cure, high dielectric strength and thermal conductivity.

POTTING	PRODUCT	CHEMISTRY	THERMAL CONDUCTIVITY (W/m-K)	VISCOSITY (cP @25°C)	DENSITY (g/cm ³)
	CoolTherm SC-309	Silicone	1.0	3,600	1.7
	CoolTherm SC-320	Silicone	3.2	22,000	3.1
	CoolTherm SC-324	Silicone	4.0	30,000	3.2
	CoolTherm UR-288	Urethane	0.4	5,000	1.37
	CoolTherm UR-389	Urethane	0.7	14,000	1.5

- Room Temperature and Heat Curing
- Electrically Isolative
- 1:1 Mix Ratio
- Improve Performance
- Protect Electronics
- Reduce Component Stress

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