ADVANCED THERMOELECTRIC

Epoxy Edge Sealing - The New Standard in Moisture Protection

In many applications it is necessary to protect thermoelectric cooling modules from moisture infiltration to prevent degradation in performance or catastrophic failure of the module due to junction corrosion or electrical short.

Until recently the typical protection has been a bead of silicon-based sealant such as RTV around the perimeter of the module. While RTV will keep droplets out, water vapor can penetrate the material and become trapped inside a thermoelectric cooler.

We now have an "aircraft grade" epoxy alternative to RTV - with much lower vapor permeability.

The dielectric, mechanical and physical properties of the two sealant types follow:

PROPERTIES	SILICON RTV	EPOXY
Technology	one-component TRV rubber	Two-component RTC rubber
Viscosity	Thixotropic Non-slumping	Thixotropic Non-slumping
Color	White	Amber
Hardness, Shore A	40	80
Elongation, %	300	90
Adhesive strength to $Al_2 O_3$ ceramics kg/cm²	20	40
Coefficient of thermal conductivity, W/mºK	0.21	0.1280
Volume resistance, Ohm·cm	$3 \cdot 10^{14th}$	$1 \cdot 10^{15th}$
Dielectric strength, KV/mm	25	17
Dielectric Constant at 1 MHz	2.9	3.1
Dissipation factor at 1 MHz	$3 \cdot 10^{-3rd}$	$1 \cdot 10^{-2nd}$
Shrinkage, %	6.0	0.4
Operating temperature, ºC	-40 + 180	-50 + 200

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Note: TE Modules manufactured with an Epoxy perimeter seal are designated with an "E" suffix.
(for example: ST-127-1.4-6.0 "E")

We are delighted to offer you superior Epoxy sealant for the same low price as RTV.

For additional protection, consider our anti-corrosion "potting" material.

Additional information that may be important to you may include:

- Module Specifications
- Module Prices
- Anti-Corrosion Potting
- Installation Instructions
- TEC Reliability

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