Multistage Series MS2-192-14-20-11-18
Thermoelectric Modules

The MS Series of thermoelectric modules (TEMs) are designed to reach cool down temperatures that are not achievable with single stage TEMs.

This product line is available in numerous heat pumping capacities, geometric shapes and temperature differentials. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics, the MS Series is designed for higher current and lower heat-pumping applications.

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FEATURES
- High temperature differential
- Precise temperature control
- Reliable solid state operation
- Environmentally friendly
- DC operation
- RoHS compliant

APPLICATIONS
- CCD cameras
- Electron microscope
- Calibration equipment
- Photonics laser systems
- Gas analyzers
- Infrared (IR) sensors
- Guidance systems

SPECIFICATIONS

TECHNICAL	
Hot Side Temperature (°C)	25°C
Qmax (Watts)	39.9
Delta Tmax (°C)	87
Imax (Amps)	6.8
Vmax (Volts)	15.8

SUFFIX	THICKNESS (PRIOR TO TINNING)	FLATNESS & PARALLELISM	HOT FACE	COLD FACE	LEAD LENGTH
00	0.326"±0.008"	0.001"/0.004"	Metallized	Metallized	7.87"
11	0.319"±0.008"	0.001"/0.002"	Lapped	Lapped	7.87"
22	0.326"±0.008"	0.001"/0.004"	Pre-tinned	Pre-tinned	7.87"

SEALING OPTIONS

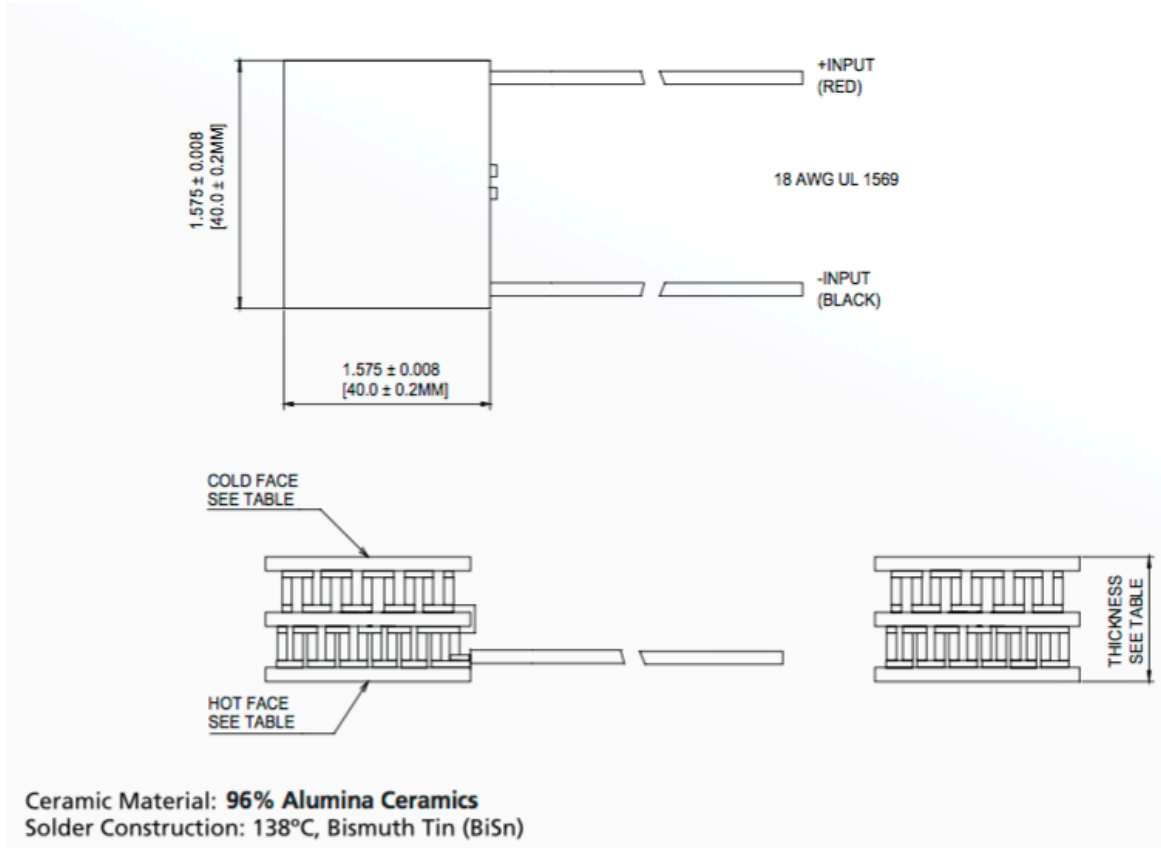| SUFFIX	SEALANT	COLOR	TEMP RANGE	DESCRIPTION
RT	RTV	White	-60 to 204 °C	Non-corrosive, silicone adhesive
EP	Epoxy	Black	-55 to 150 °C	Low density syntactic foam epoxy encapsulant

Performance Curves at Th =25°C

THERMO

ELECTRIC

Ceramic Material: 96% Alumina Ceramics
Solder Construction: 138°C, Bismuth Tin (BiSn)
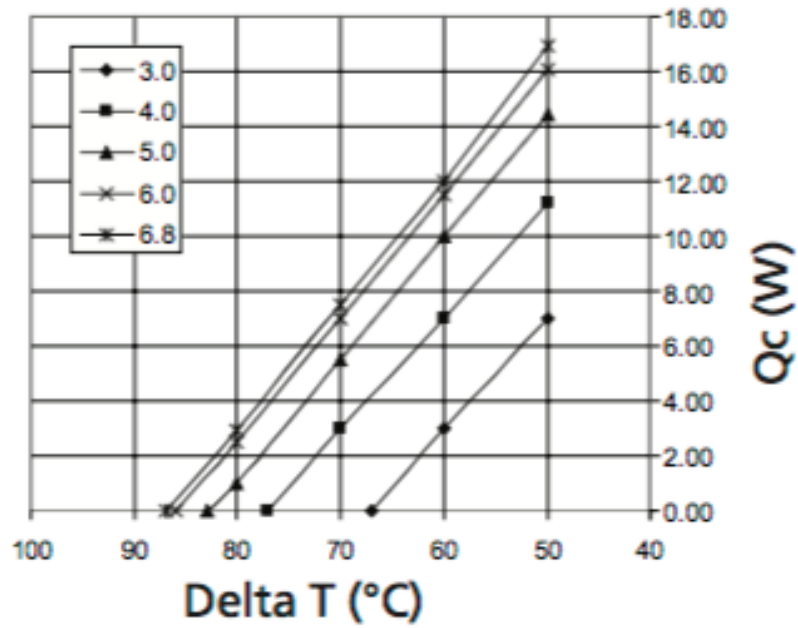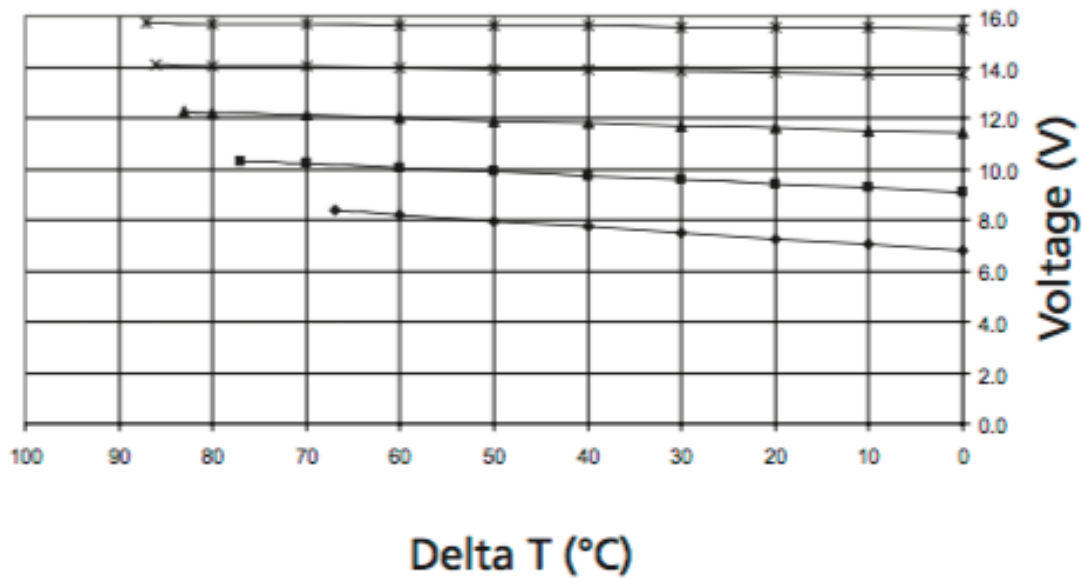
NOTES

1. Max operating temperature: 80°C
2. Do not exceed Imax or Vmax when operating module
3. Reference assembly guidelines for recommended installation
4. Solder tinning also available on metallized ceramics

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