

The SH Series is an annular-style thermoelectric module (TEM). The hot and cold side ceramics have a circular hole in the center to accommodate light protrusion for optics, mechanical fastening or temperature probe.

This product line is available in multiple configurations. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics, the SH Series is designed for higher current and larger heat-pumping applications.

### FEATURES

- Center hole
- Precise temperature Control
- Reliable solid state operation
- No sound or vibration
- DC operation
- RoHS compliant

### APPLICATIONS

- Analytical instrumentation
- Clinical diagnostics
- Photonics laser systems
- Industrial instrumentation
- Food & beverage cooling
- Consumer appliances

### PERFORMANCE SPECIFICATIONS

Hot Side Temperature (°C)	25	50
Qmax (Watts)	19.7	21.6
Delta Tmax (°C)	67	75
I <sub>max</sub> (Amps)	3.0	3.0
V <sub>max</sub> (Volts)	10.6	12.0
Module Resistance (Ohms)	3.25	3.67

SUFFIX	THICKNESS (PRIOR TO TINNING)	FLATNESS & PARALLELISM	HOT FACE	COLD FACE	LEAD LENGTH
L	0.141" ± 0.010"	0.0015" / 0.0015"	Lapped	Lapped	4.5"
L1	0.141" ± 0.001"	0.001" / 0.001"	Lapped	Lapped	4.5"
L2	0.141" ± 0.0005"	0.0005" / 0.0005"	Lapped	Lapped	4.5"
MM	0.148" ± 0.010"	0.002" / 0.002"	Metallized	Metallized	4.5"

### SEALING OPTION

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

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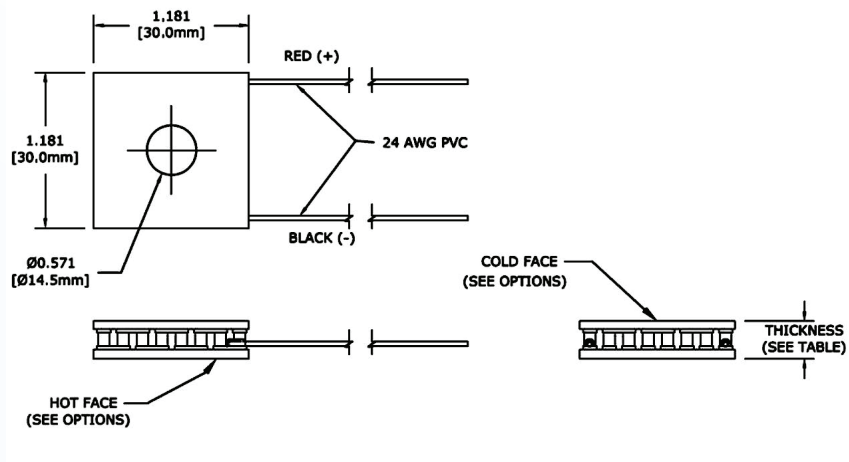
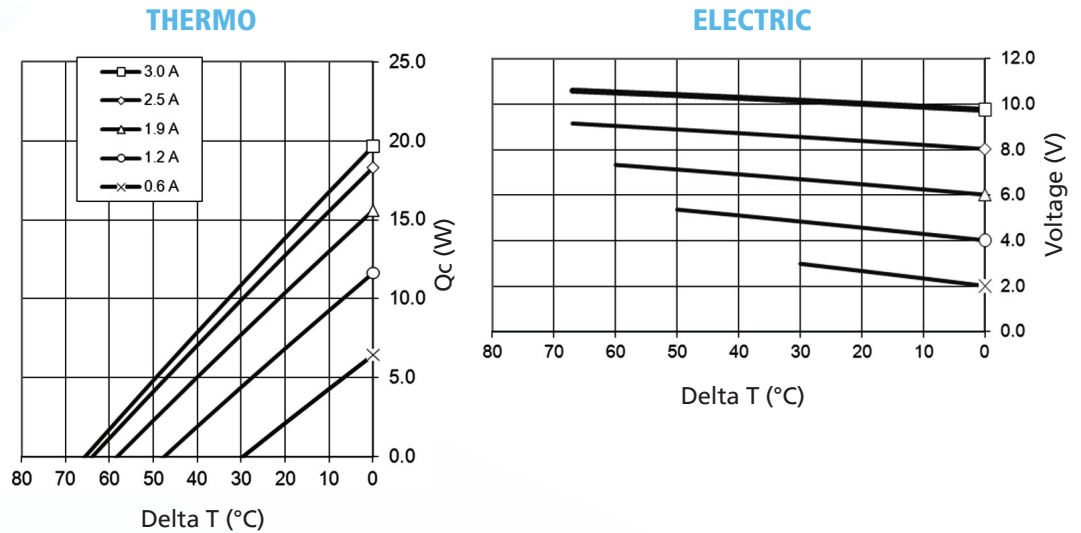
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Performance Curves at  $T_h = 25^\circ\text{C}$



Ceramic Material: Alumina ( $\text{Al}_2\text{O}_3$ )  
Solder Construction:  $138^\circ\text{C}$ , Bismuth Tin (BiSn)

### OPERATING TIPS

- Max Operating Temperature:  $80^\circ\text{C}$
- Do not exceed  $I_{\text{max}}$  or  $V_{\text{max}}$  when operating module
- Reference assembly guidelines for recommended installation
- Solder tinning also available on metallized ceramics

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