

PolarTEC™ Series PT4,7,F2,3030

Thermoelectric Modules

The PolarTEC™ Series consists of porch-style thermoelectric modules (TEMs). The hot side of the ceramic has an extended edge that allows strong lead attachment to accommodate the wiring of multiple TEMs into an array.

This product line is available in 4, 6, and 8 Amp configurations and is ideal for high-volume production. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics, the PolarTEC™ Series is designed for higher current and larger heat-pumping applications.

FEATURES

- Strong Lead Attachment
- Precise Temperature Control
- Reliable Solid State Operation
- No Sound or Vibration
- DC Operation
- RoHS Compliant

APPLICATIONS

- Analytical Instrumentation
- Photonics Laser Systems
- Electronic Enclosure Cooling
- Food and Beverage Cooling
- Chillers (Liquid Cooling)
- Consumer Appliances

PERFORMANCE SPECIFICATIONS

| | | |
|---------------------------|------|------|
| Hot Side Temperature (°C) | 25°C | 50°C |
| Qmax (Watts) | 18.4 | 20.2 |
| Delta Tmax (°C) | 67 | 75 |
| I _{max} (Amps) | 3.8 | 3.8 |
| V _{max} (Volts) | 8.1 | 9.2 |
| Module Resistance (Ohms) | 1.95 | 2.20 |

| SUFFIX | THICKNESS (PRIOR TO TINNING) | FLATNESS & PARALLELISM | HOT FACE | COLD FACE | Lead Length |
|--------|------------------------------|------------------------|----------|-----------|-------------|
| TA | 0.163" +/- 0.001" | 0.001" / 0.001" | Lapped | Lapped | 6.0" |
| TB | 0.163" +/- 0.0005" | 0.0005" / 0.0005" | Lapped | Lapped | 6.0" |

SEALING OPTION

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

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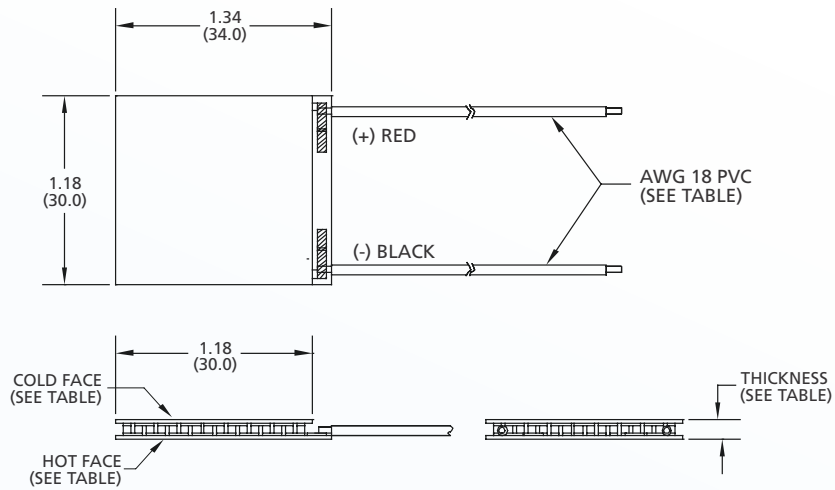
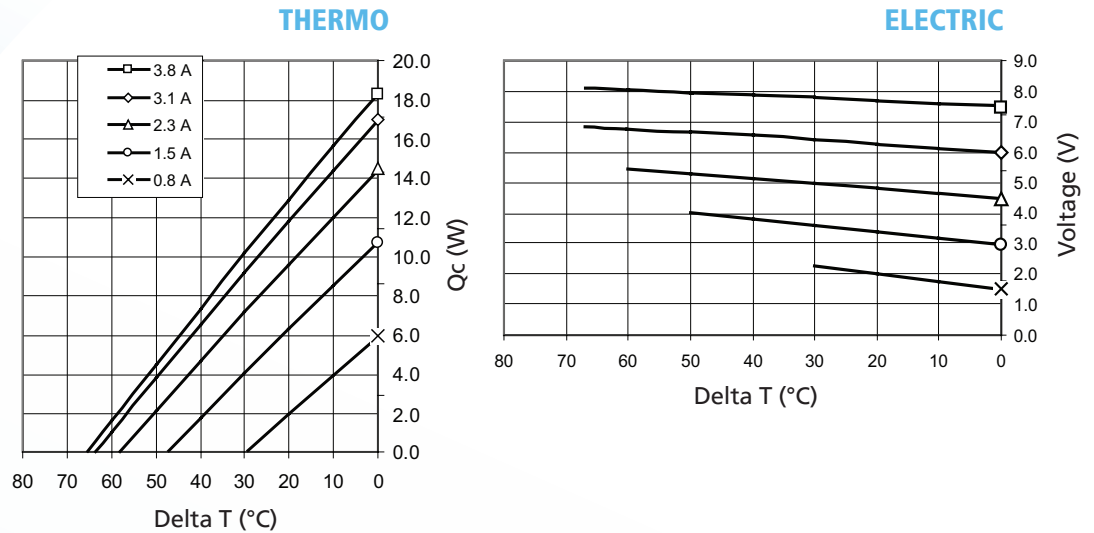
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Performance Curves at Th = 25°C



Ceramic Material: Alumina (Al₂O₃)
Solder Construction: 138°C, Bismuth Tin (BiSn)

OPERATING TIPS

- Max Operating Temperature: 80°C
- Do not exceed I_{max} or V_{max} when operating module
- Reference assembly guidelines for recommended installation

THR-DS-PT4,7,F2,3030 1111

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