

Ceramic Plate Series Thermoelectric Cooler

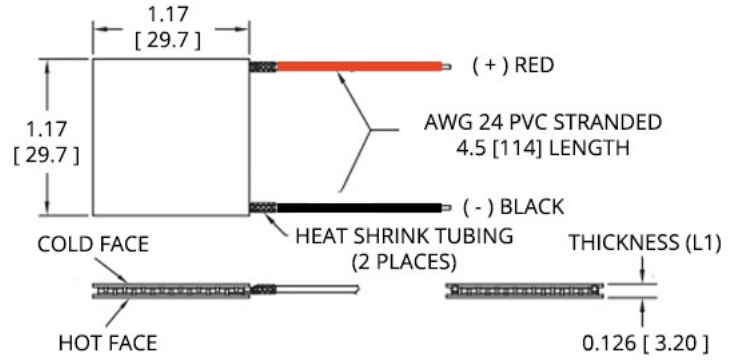
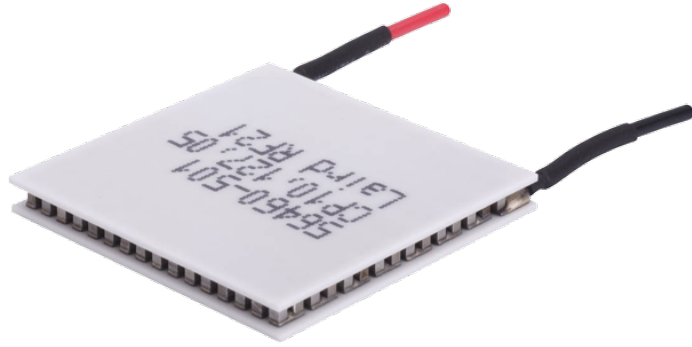
The CP10-127-05-L1-EP-W4.5 is a high-performance and highly reliable standard Thermoelectric Cooler. Assembled with Bismuth Telluride semiconductor material and thermally conductive Aluminum Oxide ceramics. It has a maximum Qc of 33 Watts when $\Delta T = 0$ and a maximum ΔT of 70.5 °C at Qc = 0.

Features

- Compact geometric sizes
- DC Operation
- RoHS-compliant

Applications

- Thermoelectric Coolers for Reagent Storage
- Thermoelectric Coolers for Handheld Cosmetic Lasers
- Cooling for Centrifuges
- Heads-Up Displays, Imaging Sensors
- Peltier Cooling for Machine Vision

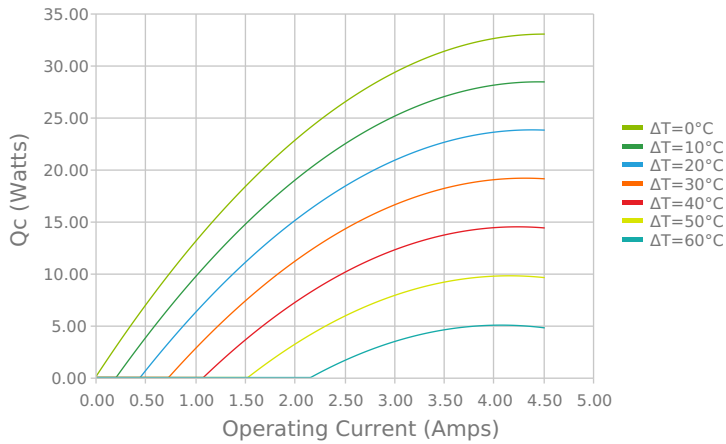


Ceramic Material: Alumina (Al_2O_3)
 Solder Construction: 138°C, Bismuth Tin (BiSn) INCHES [MM]

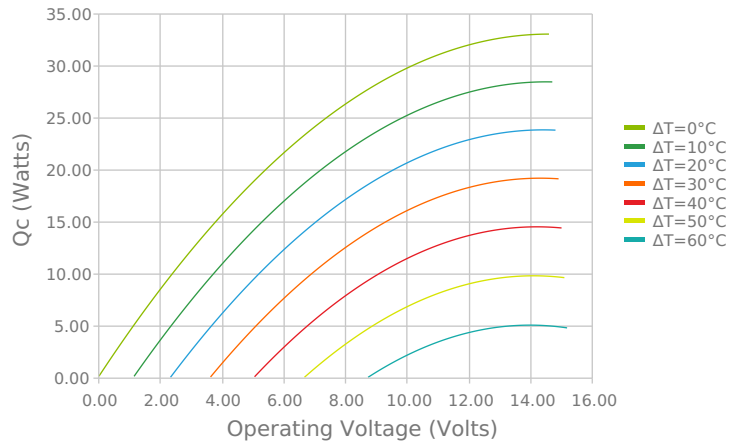
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

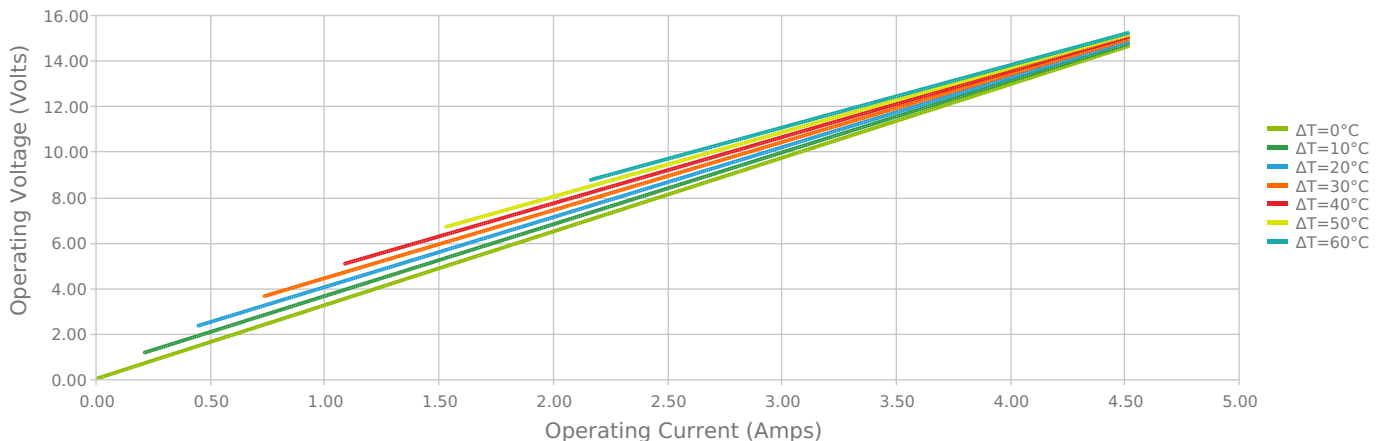
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



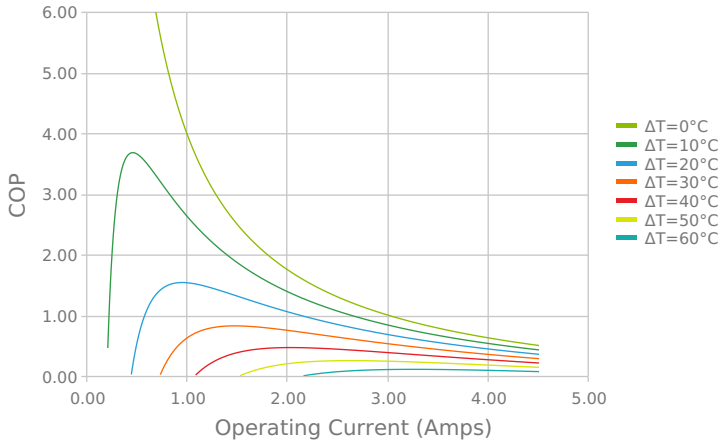
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



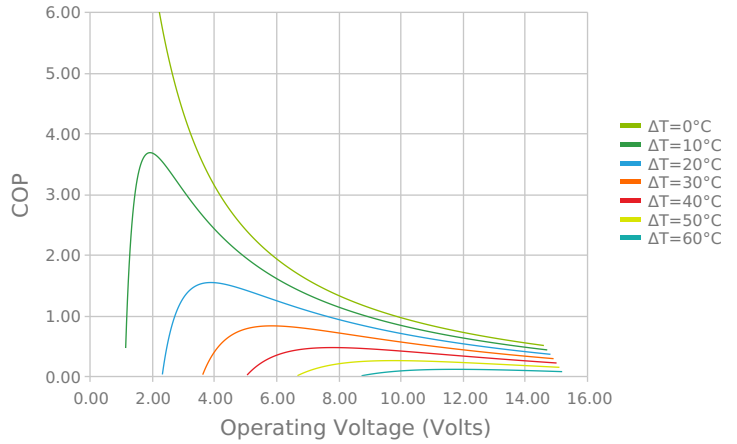
Current vs Voltage (I vs V)
 $T_{hot} = 27\text{ °C}$



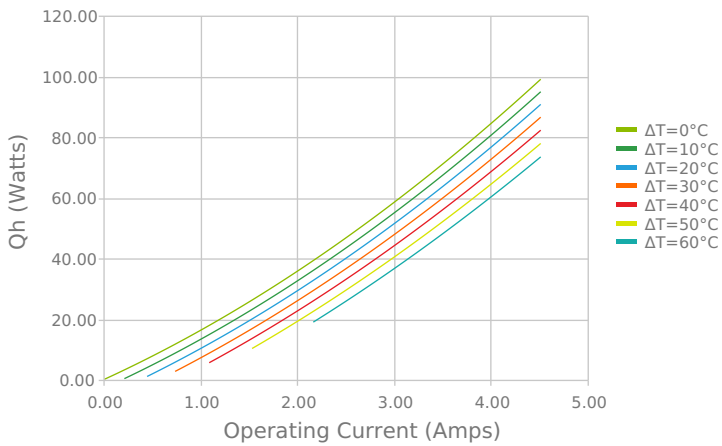
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



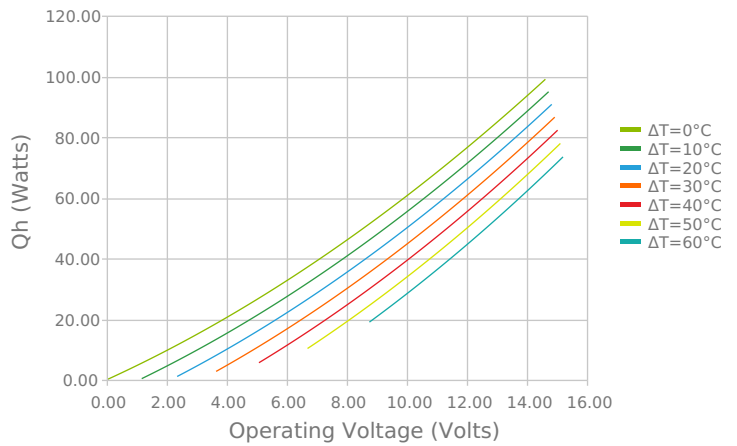
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



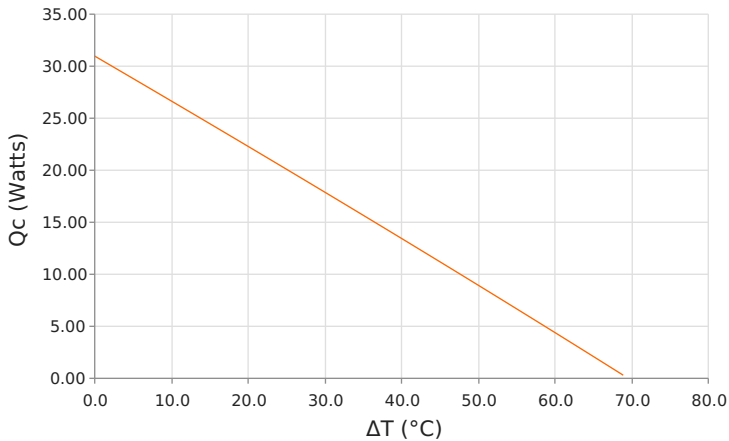
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



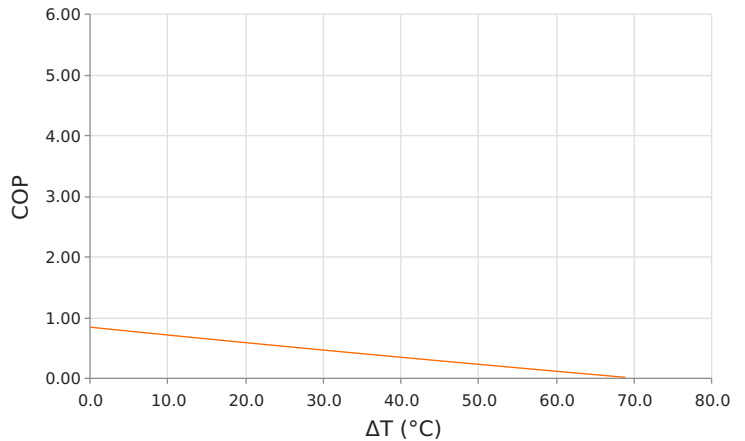
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)
 Thot = 27 °C | Current = 3.4 Amps



Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C | Current = 3.4 Amps



SPECIFICATIONS*

| Hot Side Temperature | 27.0 °C | 35.0 °C | 50.0 °C |
|---|-------------|------------|------------|
| Qcmax ($\Delta T = 0$) | 33.0 Watts | 34.0 Watts | 35.8 Watts |
| ΔT_{max} ($Q_c = 0$) | 70.5°C | 73.5°C | 78.8°C |
| I_{max} (I @ ΔT_{max}) | 4.0 Amps | 4.0 Amps | 3.9 Amps |
| V_{max} (V @ ΔT_{max}) | 13.9 Volts | 14.4 Volts | 15.4 Volts |
| Module Resistance | 3.24 Ohms | 3.37 Ohms | 3.62 Ohms |
| Max Operating Temperature | 80 °C | | |
| Weight | 9.0 gram(s) | | |

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|--------------------------------------|--|----------|-----------|---------------------|
| L1 | 3.200 ± 0.025 mm 0.126 ± 0.001 in | 0.025 mm / 0.025 mm 0.001 in / 0.001 in | Lapped | Lapped | 114.3 mm 4.50 in |

SEALING OPTIONS

| Suffix | Sealant | Color | Temp Range | Description |
|--------|---------|-------|--------------|--|
| EP | Epoxy | Black | -55 to 150°C | Low density syntactic foam epoxy encapsulant |

NOTES

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

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