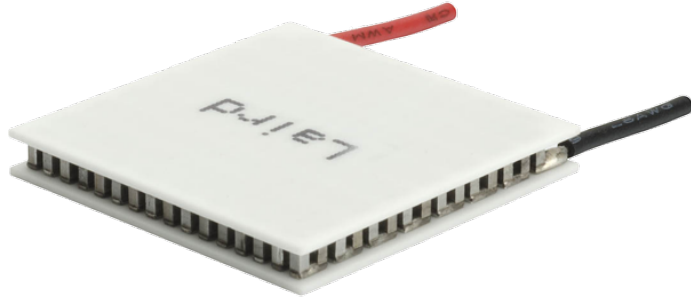


**Ceramic Plate Series Thermoelectric Cooler**

The CP08-127-05-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  $Q_c$  of 21.7 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 70.5 °C at  $Q_c = 0$ .

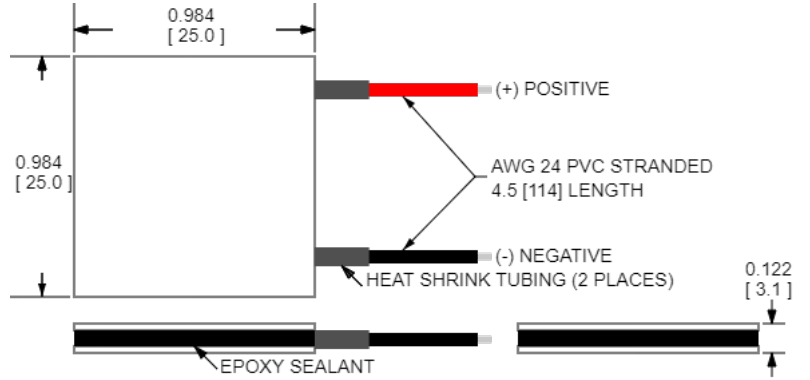


**Features**

- 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:  $Al_2O_3$

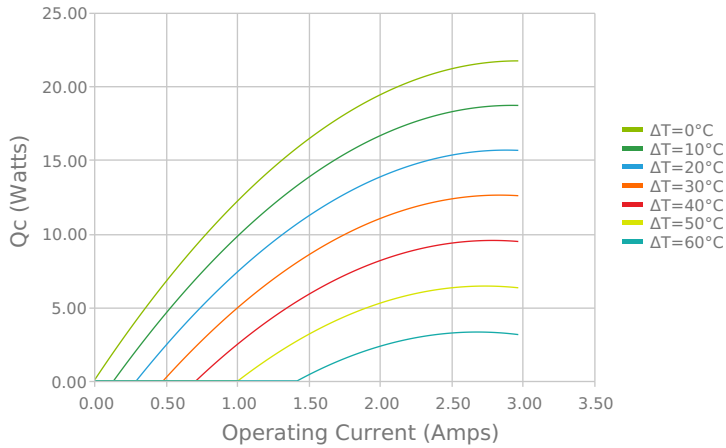
SOLDER CONSTRUCTION: 138°C, BiSn

INCHES [MM]

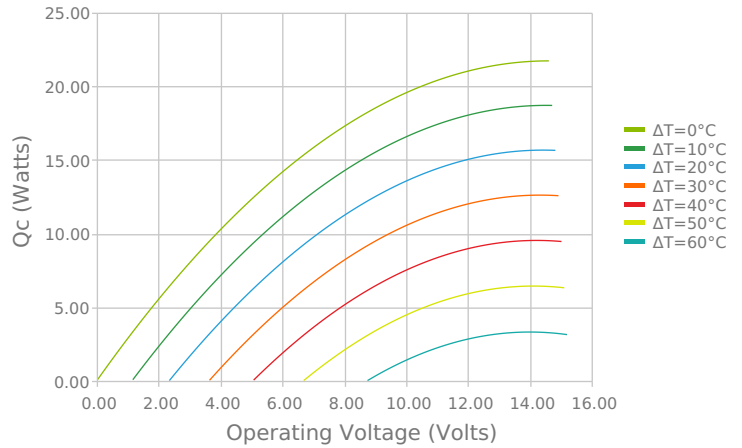
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

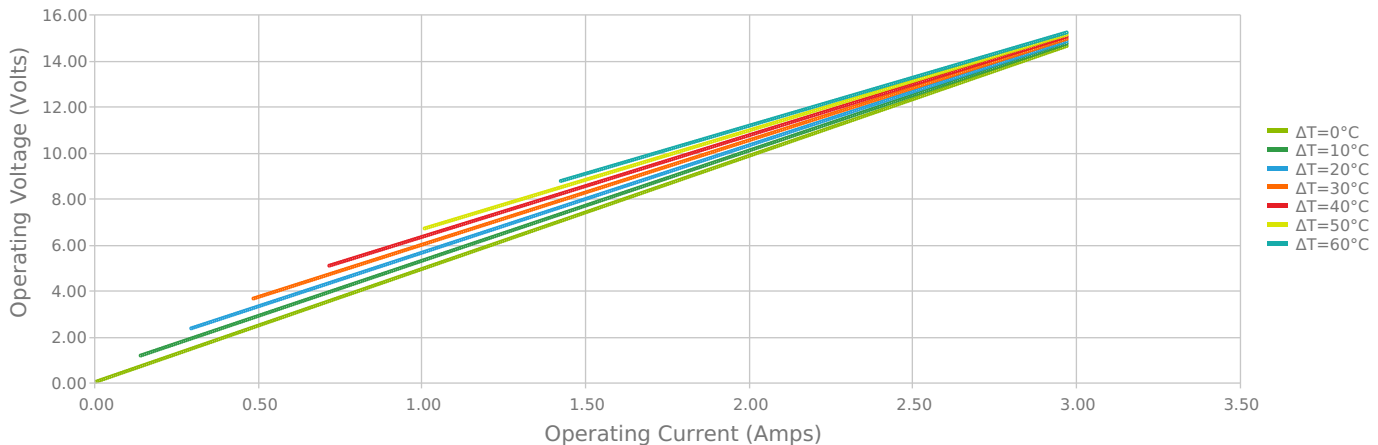
Heat Pumped at Cold Side  
 $Thot = 27\text{ °C}$



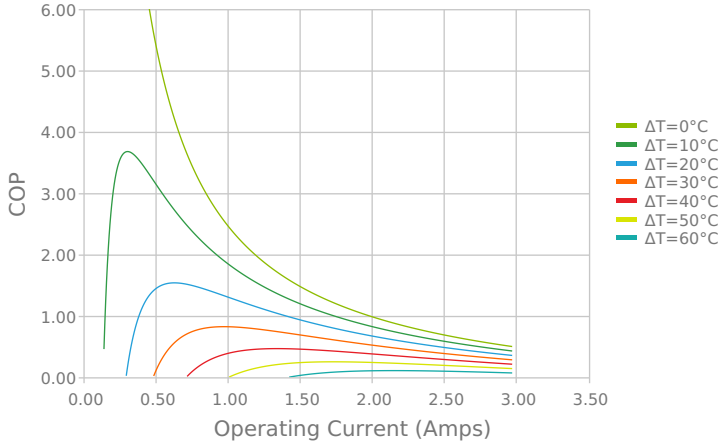
Heat Pumped at Cold Side  
 $Thot = 27\text{ °C}$



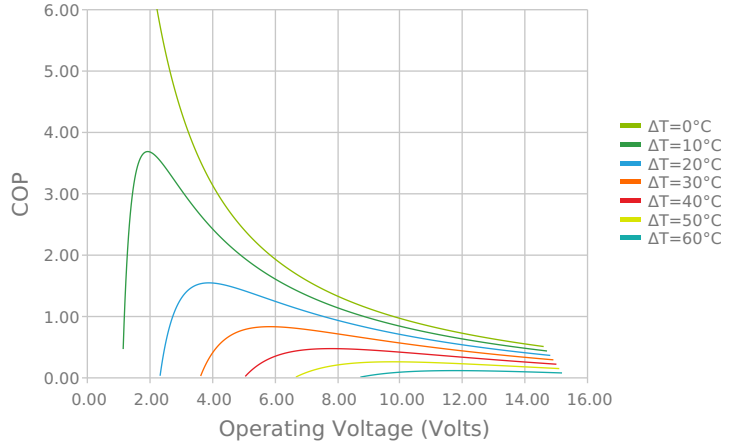
Current vs Voltage (I vs V)  
 $Thot = 27\text{ °C}$



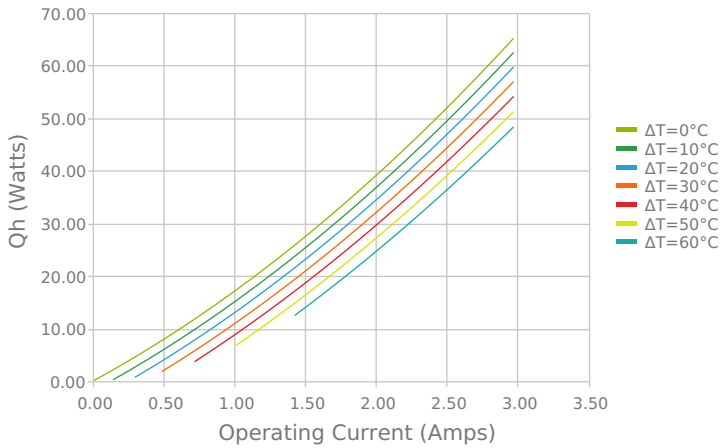
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



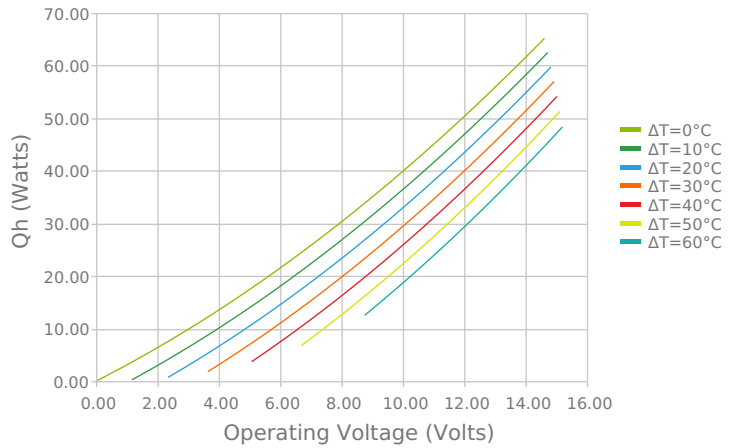
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



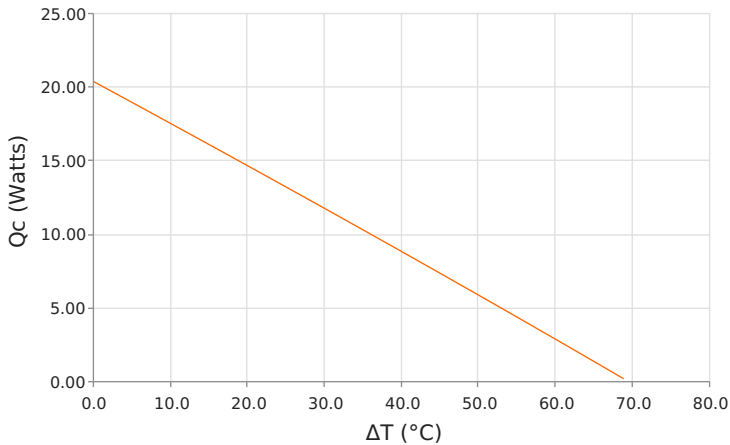
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



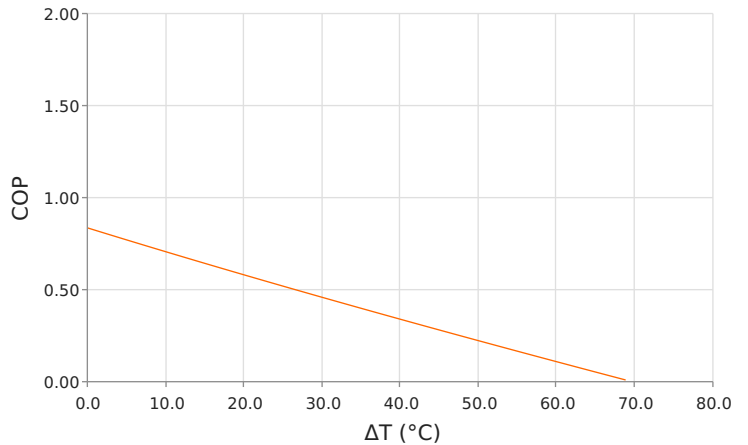
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)  
 Thot = 27 °C | Current = 2.2 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C | Current = 2.2 Amps



## SPECIFICATIONS\*

**Hot Side Temperature**
**Qcmax ( $\Delta T = 0$ )**
 **$\Delta T_{max}$  ( $Q_c = 0$ )**
**I<sub>max</sub> (I @  $\Delta T_{max}$ )**
**V<sub>max</sub> (V @  $\Delta T_{max}$ )**
**Module Resistance**
**Max Operating Temperature**
**Weight**

	27.0 °C	35.0 °C	50.0 °C
Qcmax ( $\Delta T = 0$ )	21.7 Watts	22.4 Watts	23.6 Watts
$\Delta T_{max}$ ( $Q_c = 0$ )	70.5°C	73.5°C	78.8°C
I <sub>max</sub> (I @ $\Delta T_{max}$ )	2.6 Amps	2.6 Amps	2.6 Amps
V <sub>max</sub> (V @ $\Delta T_{max}$ )	13.9 Volts	14.4 Volts	15.4 Volts
Module Resistance	4.92 Ohms	5.12 Ohms	5.51 Ohms
Max Operating Temperature	80 °C		
Weight	6.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
L1	3.099 ± 0.025 mm 0.122 ± 0.0010 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<sub>max</sub> or V<sub>max</sub> when operating module
3. Reference assembly guidelines for recommended installation
4. Solder tinning also available on metallized ceramics

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