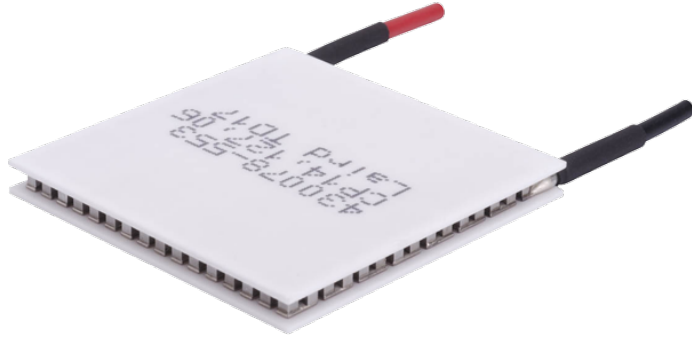


**Ceramic Plate Series Thermoelectric Cooler**

The CP14-127-06-L1-RT-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 49.3 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 70.5 °C at  $Q_c = 0$ .

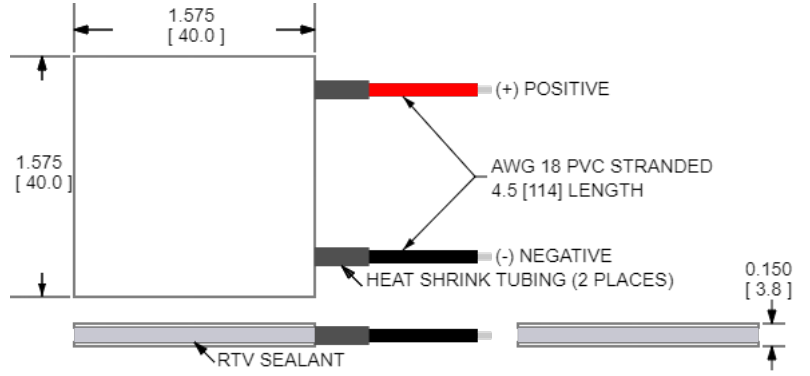


**Features**

- 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:  $Al_2O_3$

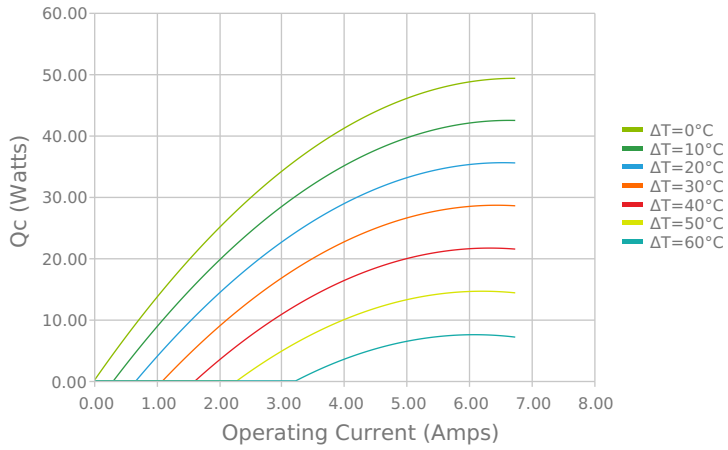
SOLDER CONSTRUCTION: 138°C, BiSn

INCHES [ MM ]

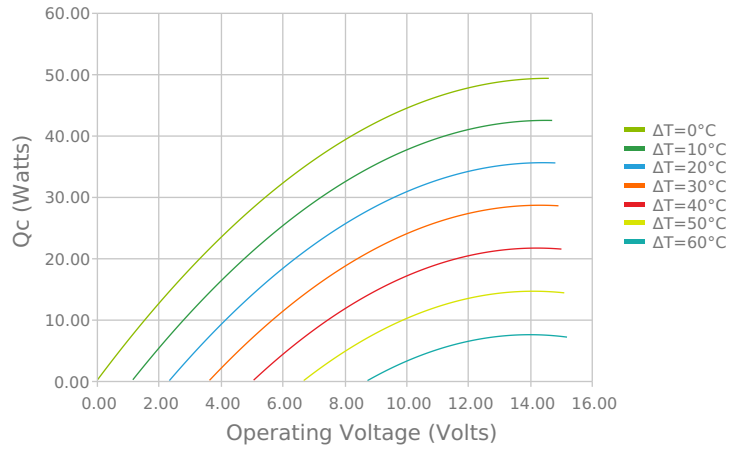
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

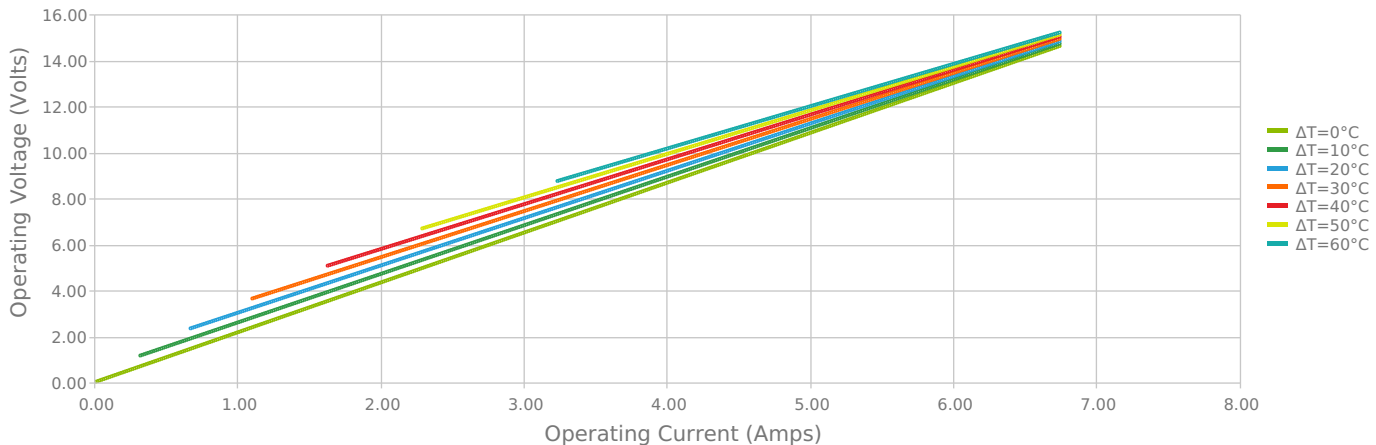
Heat Pumped at Cold Side  
 $Thot = 27\text{ °C}$



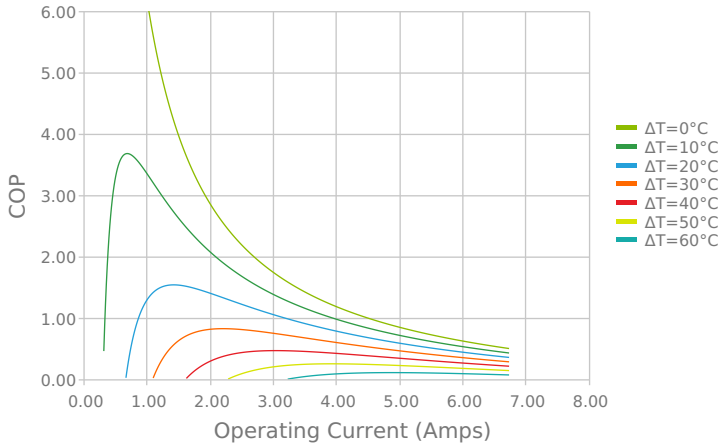
Heat Pumped at Cold Side  
 $Thot = 27\text{ °C}$



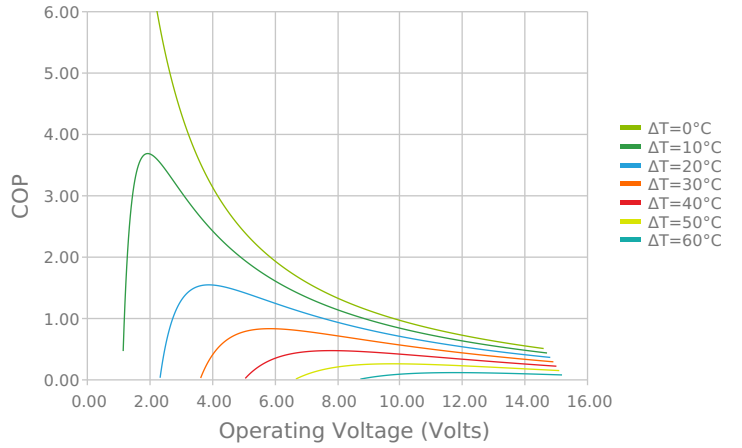
Current vs Voltage (I vs V)  
 $Thot = 27\text{ °C}$



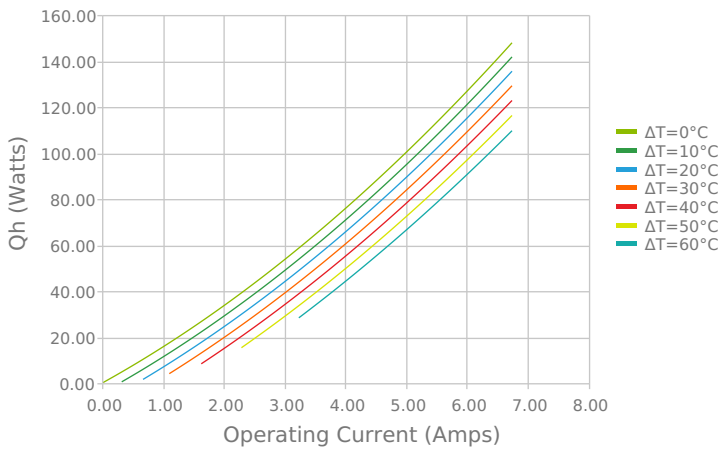
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27\text{ }^\circ\text{C}$



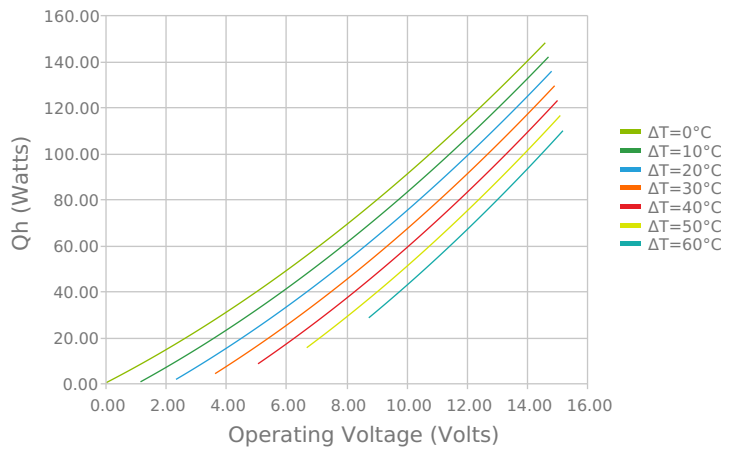
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27\text{ }^\circ\text{C}$



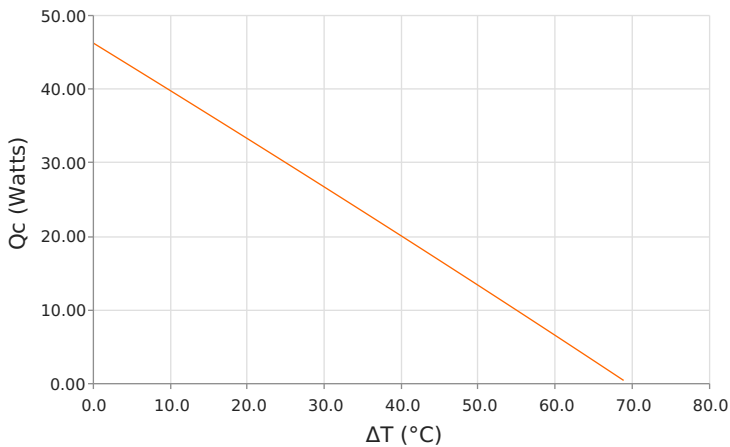
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 27\text{ }^\circ\text{C}$



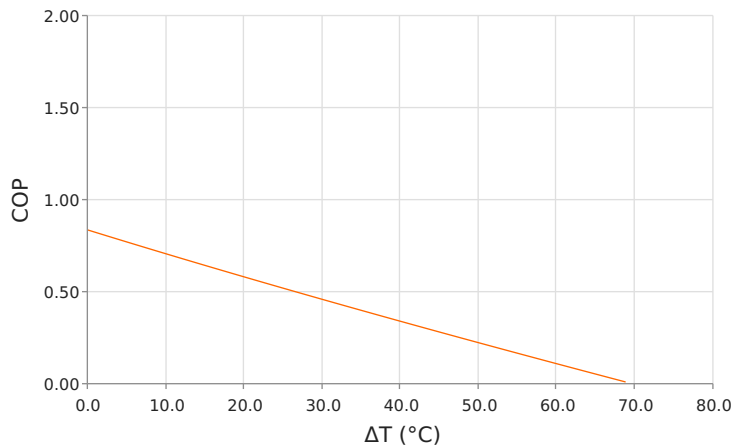
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 27\text{ }^\circ\text{C}$



Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 27\text{ }^\circ\text{C}$  | Current = 5.1 Amps



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27\text{ }^\circ\text{C}$  | Current = 5.1 Amps



## SPECIFICATIONS\*

	27.0 °C	35.0 °C	50.0 °C
<b>Hot Side Temperature</b>			
<b>Qcmax (<math>\Delta T = 0</math>)</b>	49.3 Watts	50.8 Watts	53.5 Watts
<b><math>\Delta T_{max}</math> (<math>Q_c = 0</math>)</b>	70.5°C	73.5°C	78.8°C
<b>I<sub>max</sub> (I @ <math>\Delta T_{max}</math>)</b>	6.0 Amps	5.9 Amps	5.9 Amps
<b>V<sub>max</sub> (V @ <math>\Delta T_{max}</math>)</b>	13.9 Volts	14.4 Volts	15.4 Volts
<b>Module Resistance</b>	2.17 Ohms	2.26 Ohms	2.43 Ohms
<b>Max Operating Temperature</b>	80 °C		
<b>Weight</b>	21.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
L1	3.810 ± 0.025 mm 0.150 ± 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
RT	RTV	Translucent or White	-60 to 204°C	Non-corrosive, silicone adhesive

## 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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