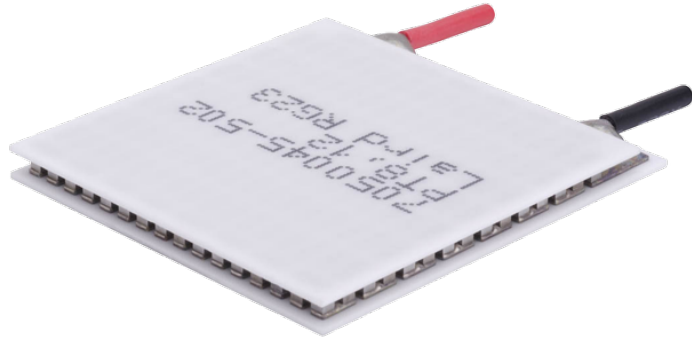


**PolarTEC™ PT Series Thermoelectric Cooler**

The PT8-12-F2-4040-TB-EP-W6 is a porch-style thermoelectric cooler. The hot side ceramic has an extended edge, which allows for a strong lead attachment to accommodate the wiring of multiple thermoelectric coolers into an array. It has a maximum Qc of 71 Watts when ΔT = 0 and a maximum ΔT of 70.5 °C at Qc = 0.

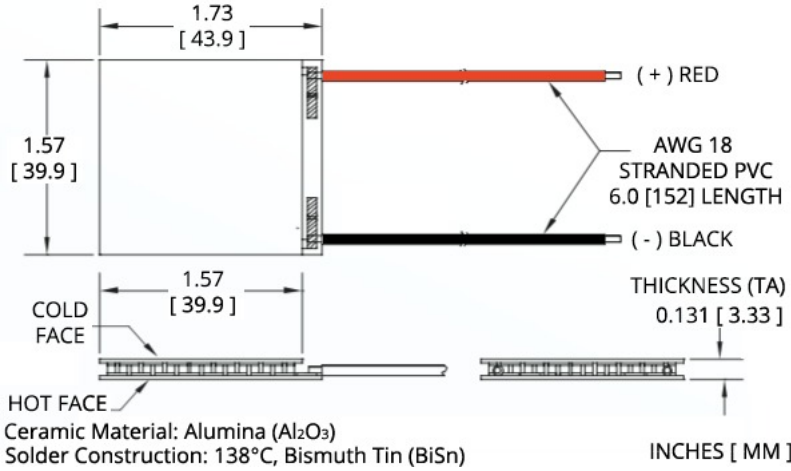


**Features**

- Strong lead attachment
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- DC operation
- RoHS-compliant

**Applications**

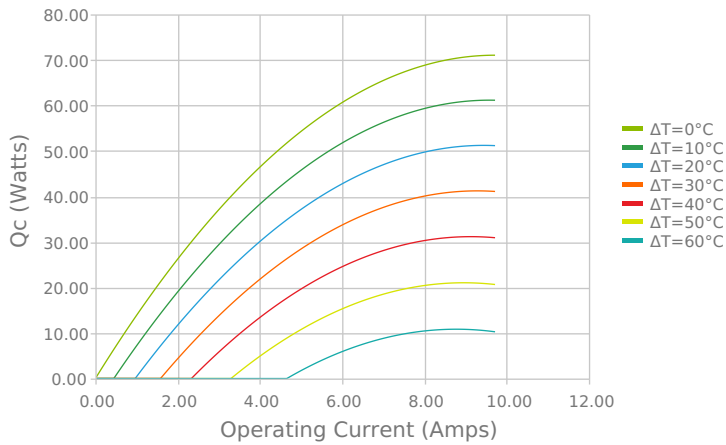
- Cooling for Mobile Base Stations and Cell Towers
- Thermal Management Solutions for Beverage Cooling
- Cooling for Centrifuges
- Energy Storage Systems



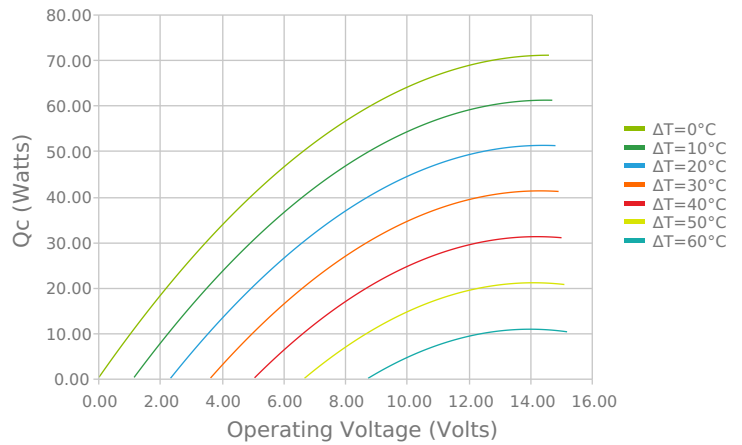
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

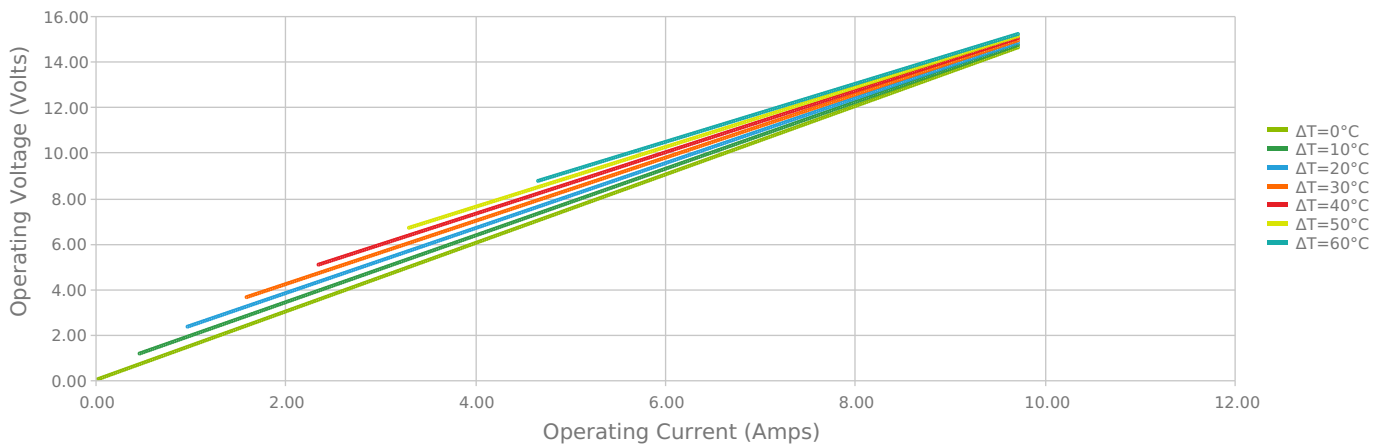
Heat Pumped at Cold Side  
Thot = 27 °C



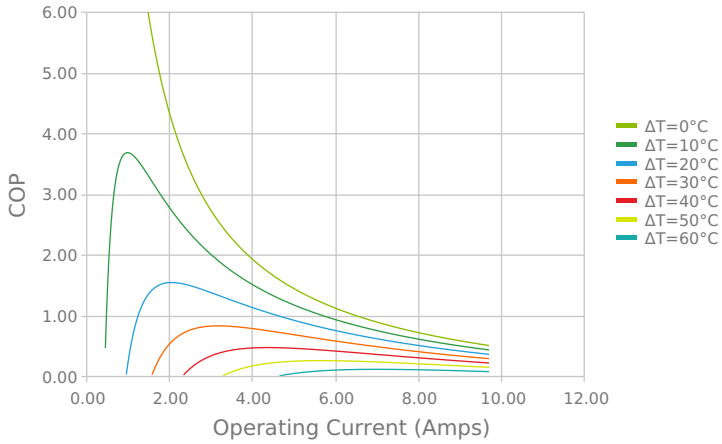
Heat Pumped at Cold Side  
Thot = 27 °C



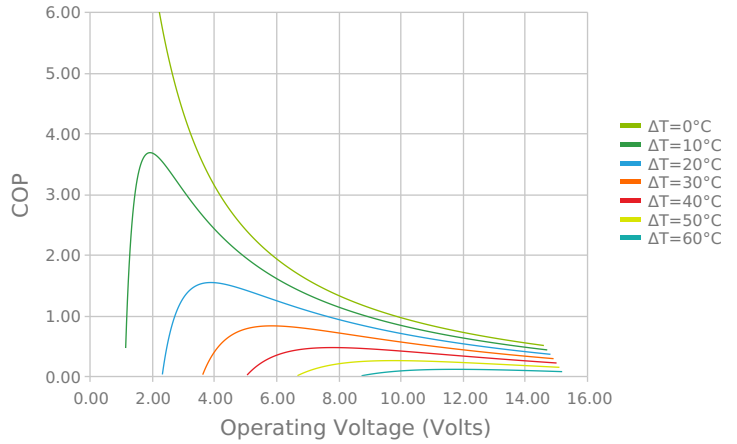
Current vs Voltage (I vs V)  
Thot = 27 °C



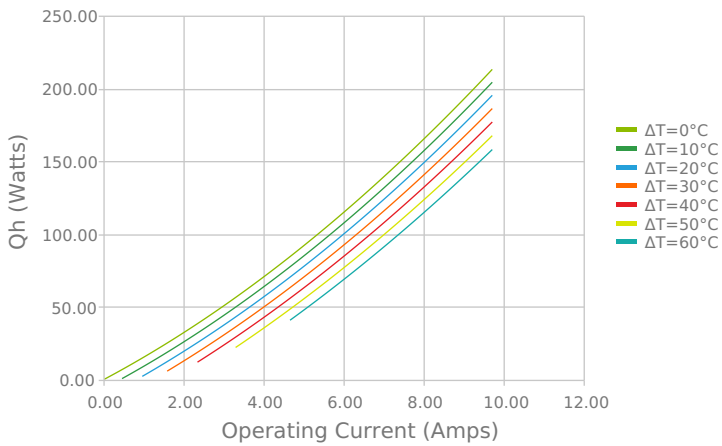
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



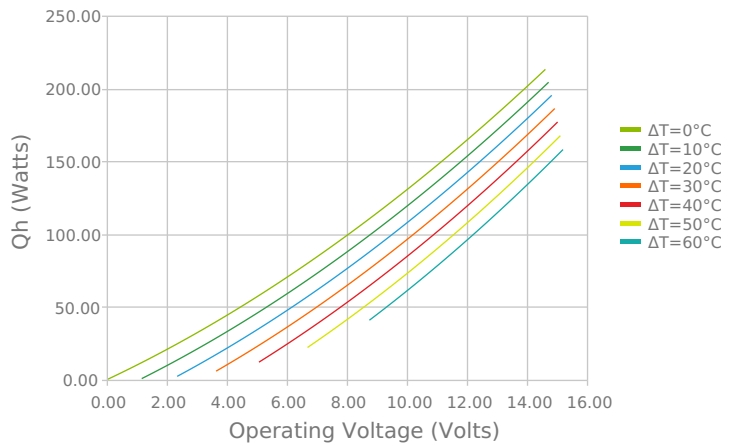
Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C



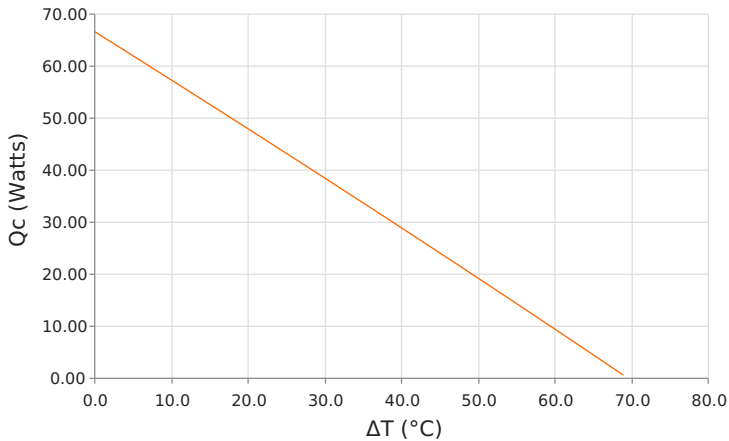
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



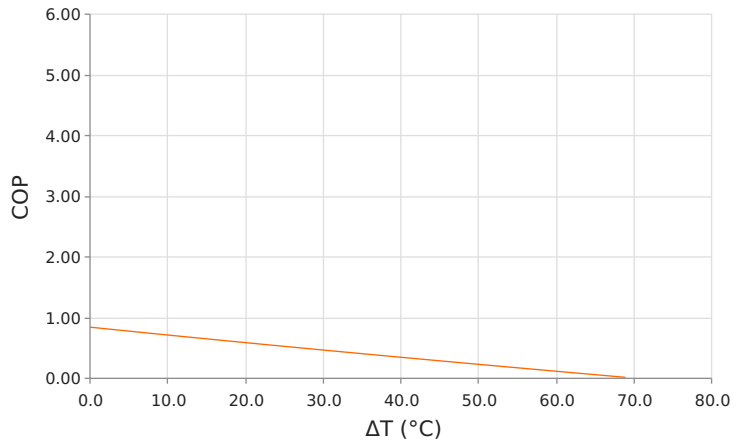
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
Thot = 27 °C



Heat Pumped at Cold Side (Qc)  
Thot = 27 °C | Current = 7.3 Amps



Coefficient of Performance (COP = Qc/Pin)  
Thot = 27 °C | Current = 7.3 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 ( $\Delta T = 0$ )	71.0 Watts	73.2 Watts	77.0 Watts
$\Delta T_{max}$ ( $Q_c = 0$ )	70.5°C	73.5°C	78.8°C
I <sub>max</sub> (I @ $\Delta T_{max}$ )	8.6 Amps	8.5 Amps	8.4 Amps
V <sub>max</sub> (V @ $\Delta T_{max}$ )	13.9 Volts	14.4 Volts	15.4 Volts
Module Resistance	1.50 Ohms	1.57 Ohms	1.68 Ohms
Max Operating Temperature	80 °C		
Weight	23.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TB	3.480 ± 0.013 mm 0.137 ± 0.001 in	0.013 mm / 0.013 mm 0.0005 in / 0.0005 in	Lapped	Lapped	152.4 mm 6.00 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

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Date: 04/24/2020