PolarTEC™ PT Series PT4-12-F2-4040-TB-W6
MFG Part Number: 430023-510

PolarTEC™ PT Series Thermoelectric Cooler

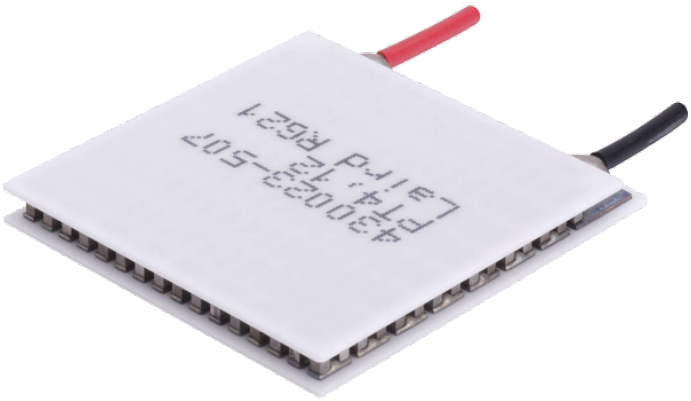
The PT4-12-F2-4040-TB-W6 is a porch-style thermoelectric cooler. The hot side ceramic has an extended edge, which allows for a strong lead attachment to accommodate the wiring of multiple thermoelectric coolers into an array. It has a maximum Qc of 31.8 Watts when ΔT = 0 and a maximum ΔT of 70.5 °C at Qc = 0.

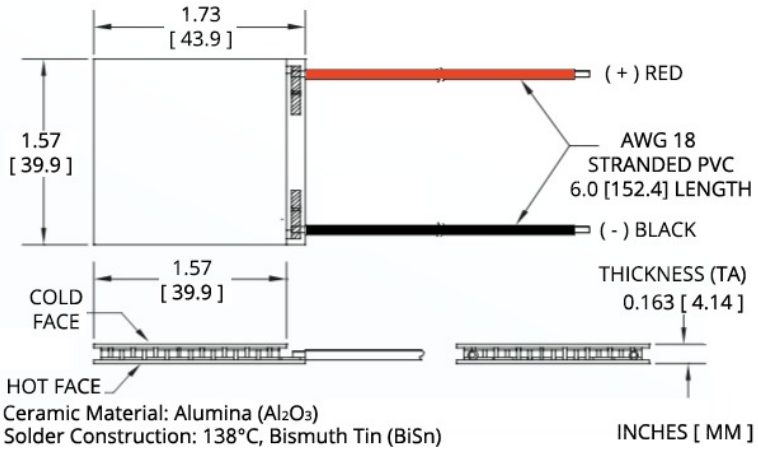
Features

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

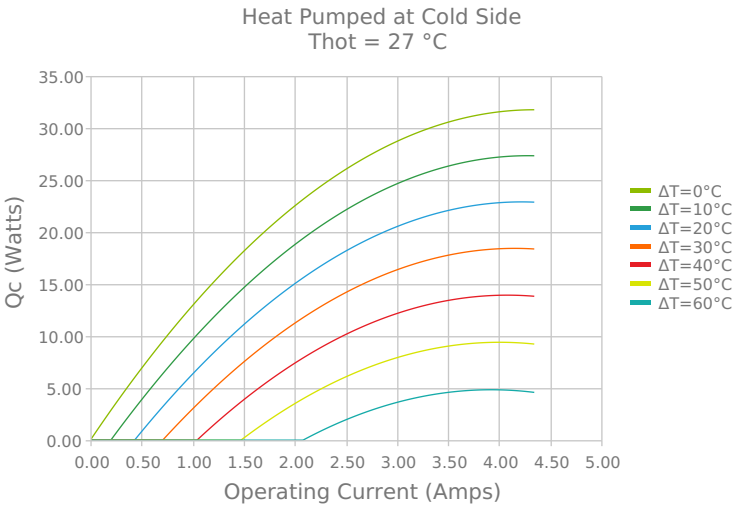
Applications

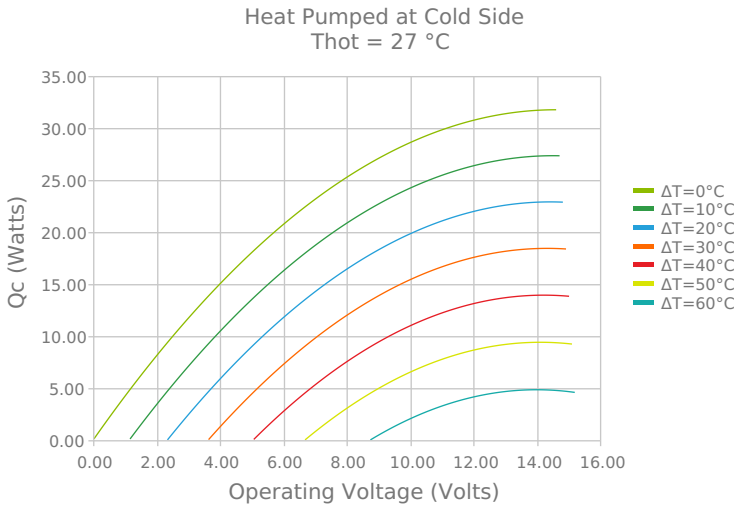
- Cooling for Mobile Base Stations and Cell Towers
- Thermal Management Solutions for Beverage Cooling
- Cooling for Centrifuges
- Energy Storage Systems

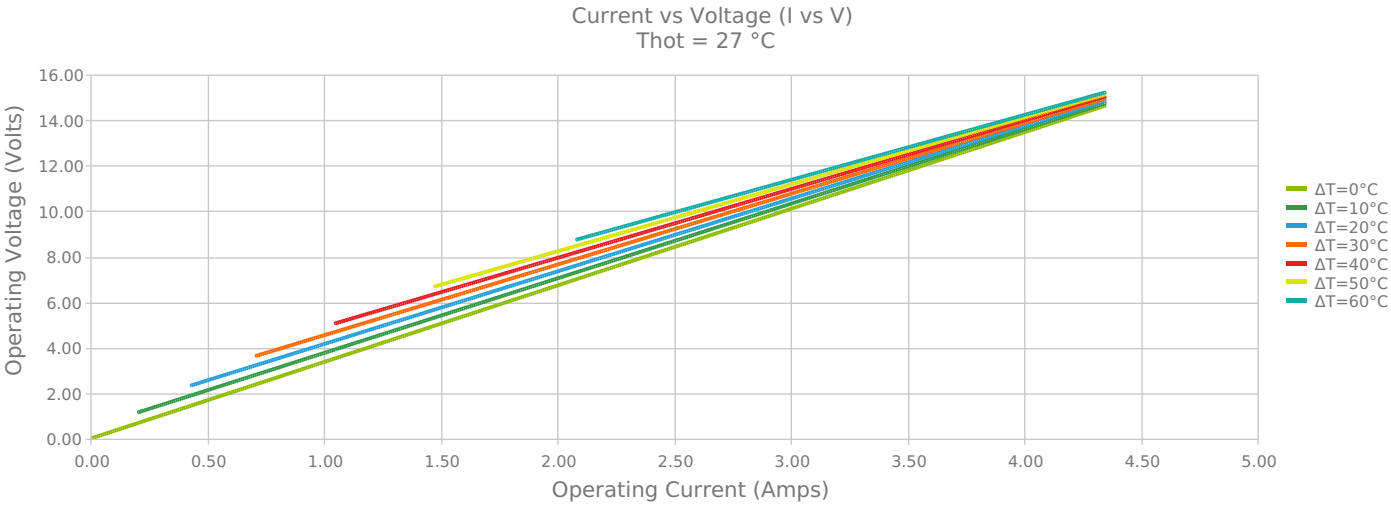




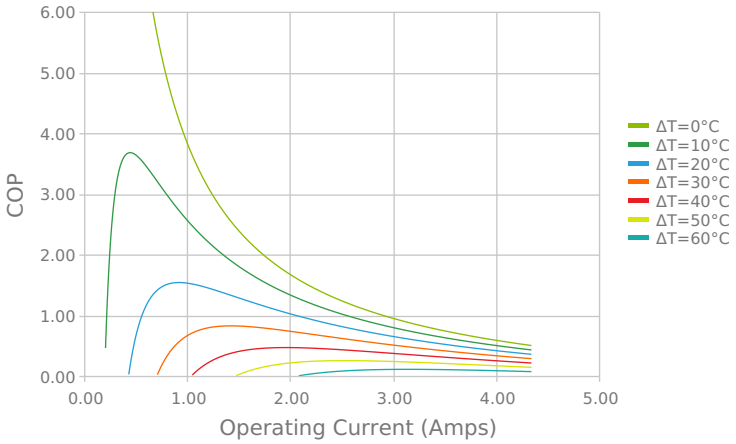
ELECTRICAL AND THERMAL PERFORMANCE







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



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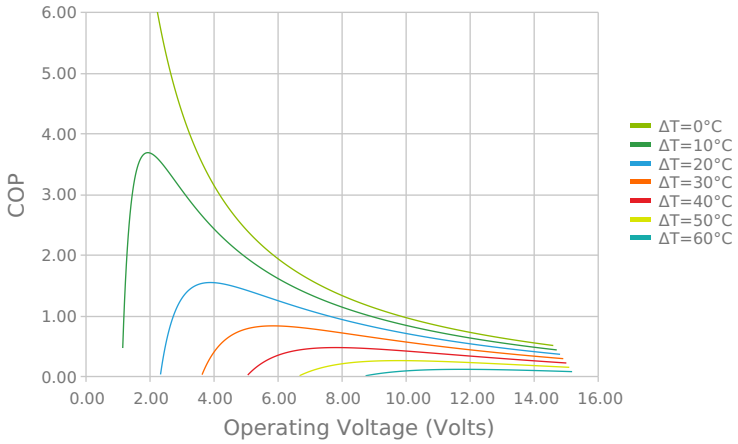
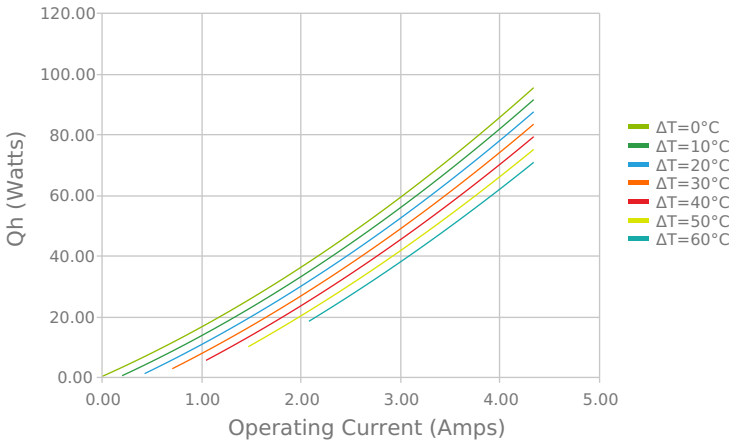


Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



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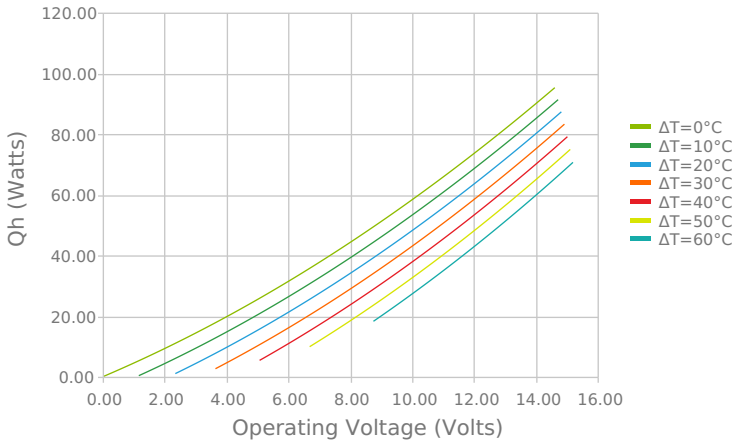
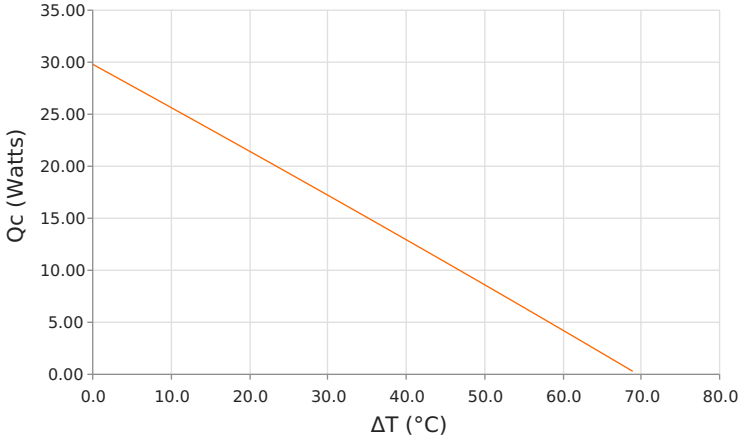
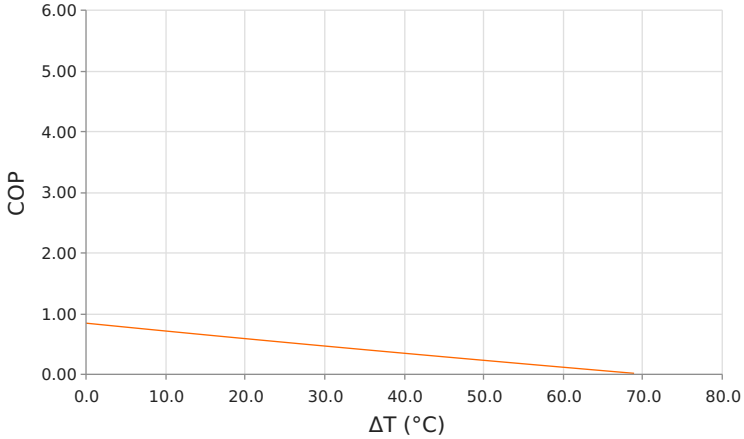


Heat Pumped at Cold Side (Qc)
Thot = 27 °C | Current = 3.3 Amps



Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 3.3 Amps



SPECIFICATIONS*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax (ΔT = 0)	31.8 Watts	32.7 Watts	34.4 Watts
ΔTmax (Qc = 0)	70.5°C	73.5°C	78.8°C
Imax (I @ ΔTmax)	3.8 Amps	3.8 Amps	3.8 Amps
Vmax (V @ ΔTmax)	13.9 Volts	14.4 Volts	15.4 Volts
Module Resistance	3.36 Ohms	3.50 Ohms	3.77 Ohms
Max Operating Temperature	80 °C		
Weight	21.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TB	4.191 ±0.013 mm 0.165 ± 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
	None			No sealing specified

NOTES

1. Max operating temperature: 80°C
2. Do not exceed Imax or Vmax when operating module
3. Reference assembly guidelines for recommended installation

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