PolarTEC[™] PT Series PT6-12-F2-4040-TA-RT-W6 **MFG Part Number: 7050040-502**

PolarTEC[™] PT Series Thermoelectric Cooler

The PT6-12-F2-4040-TA-RT-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 50.6 Watts when $\Delta T = 0$ and a maximum ΔT of 70.5 °C at Qc = 0.

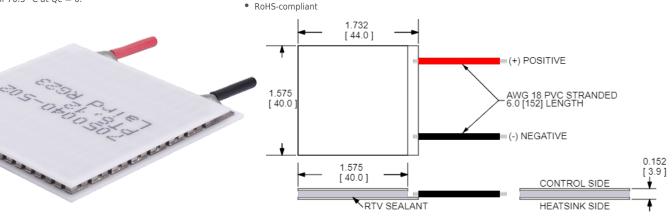


Strong lead attachment

- Precise temperature control
- Reliable solid-state operation No sound or vibration
- DC operation

Applications

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



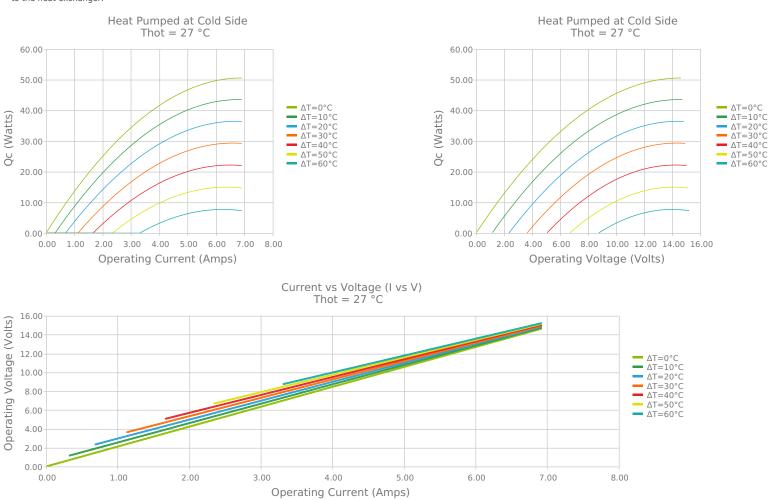
CERAMIC MATERIAL: Al2O3

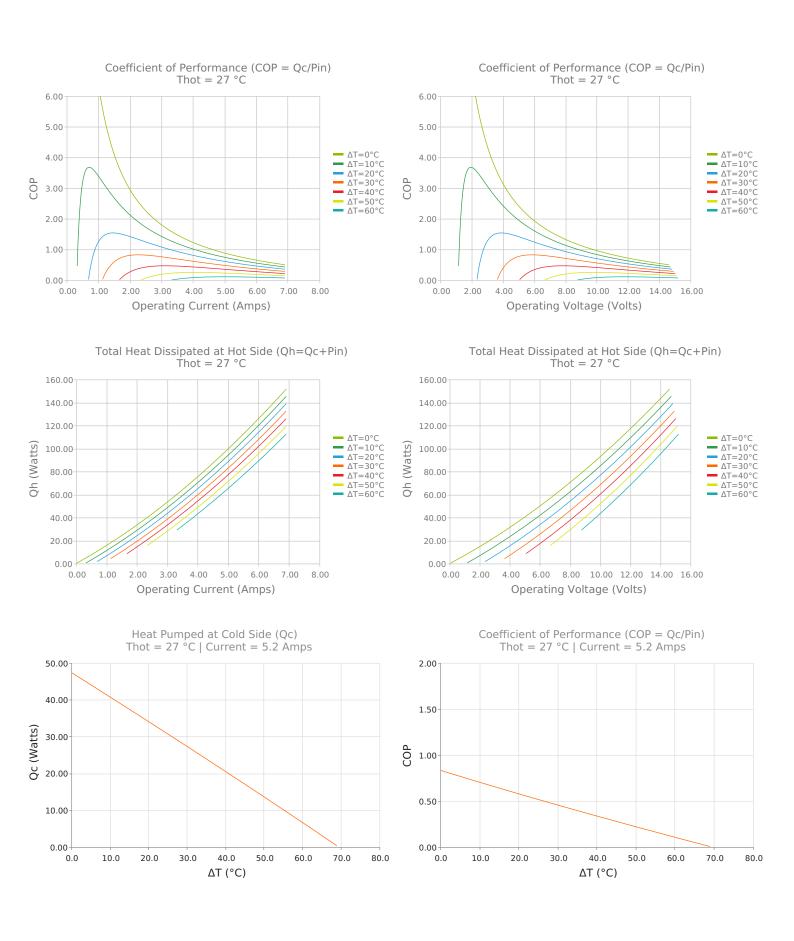
INCHES [MM]

SOLDER CONSTRUCTION: 138°C, BiSn 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

For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the HEATSINK side against the heat sink or other heat rejection method. The CONTROL side is always opposite the side with lead attachments. Lead attachment is a passive heat loss and less impactful if located on the side that attaches to the heat exchanger.





SPECIFICATIONS*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
$Qcmax (\Delta T = 0)$	50.6 Watts	52.1 Watts	54.8 Watts
ΔTmax (Qc = 0)	70.5°C	73.5°C	78.8°C
lmax (I @ ΔTmax)	6.1 Amps	6.1 Amps	6.0 Amps
Vmax (V @ ΔTmax)	13.9 Volts	14.4 Volts	15.4 Volts
Module Resistance	2.11 Ohms	2.20 Ohms	2.37 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
ТА	3.861 ±0.025 mm 0.152 ± 0.0010 in	0.025 mm / 0.025 mm 0.001 in / 0.001 in	Lapped	Lapped	152.4 mm 6.00 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 Imax or Vmax when operating module
- 3. Reference assembly guidelines for recommended installation

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