

PolarTEC™ PT Series Thermoelectric Cooler

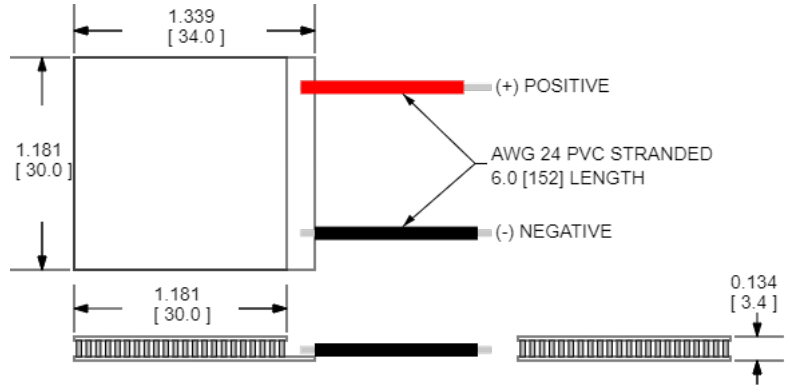
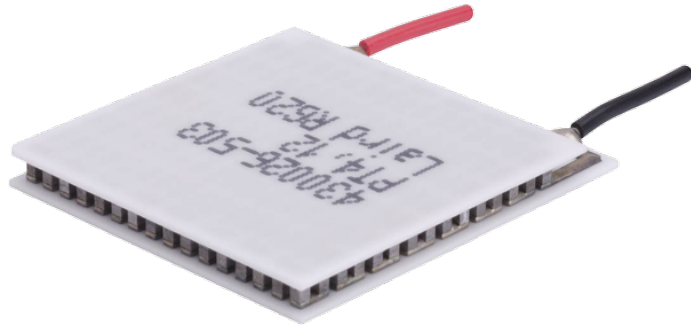
The PT4-12-F2-3030-TA-W6 is a porch-style thermoelectric cooler. The hot side ceramic has an extended edge, which allows for a strong lead attachment to accommodate the wiring of multiple thermoelectric coolers into an array. It has a maximum Qc of 33 Watts when $\Delta T = 0$ and a maximum ΔT of 70.5 °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

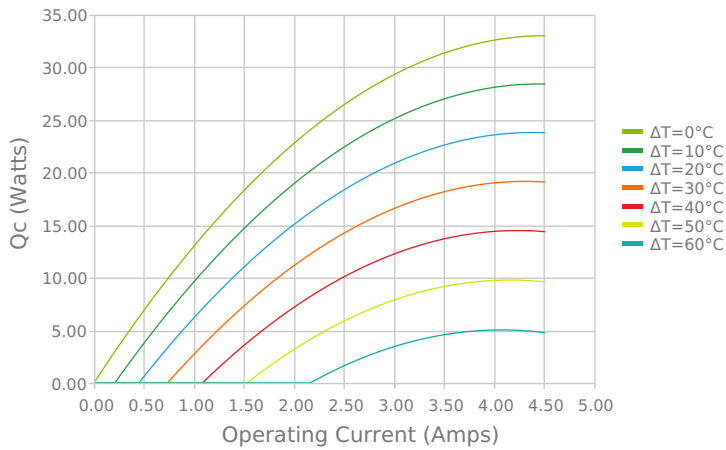


CERAMIC MATERIAL: Al₂O₃
SOLDER CONSTRUCTION: 138°C, BiSn

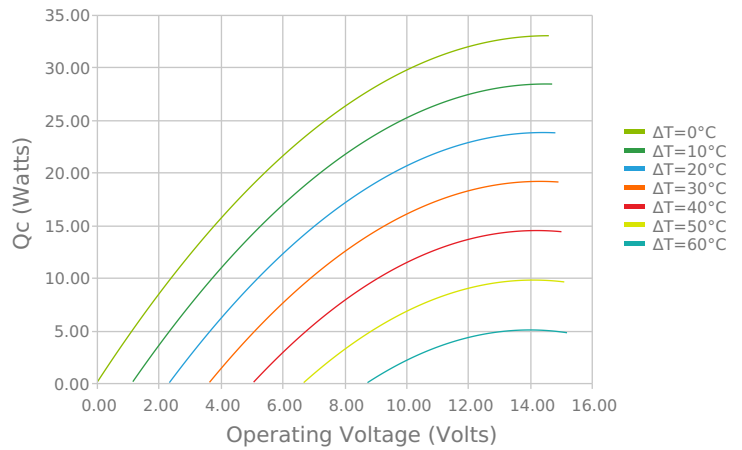
INCHES [MM]

ELECTRICAL AND THERMAL PERFORMANCE

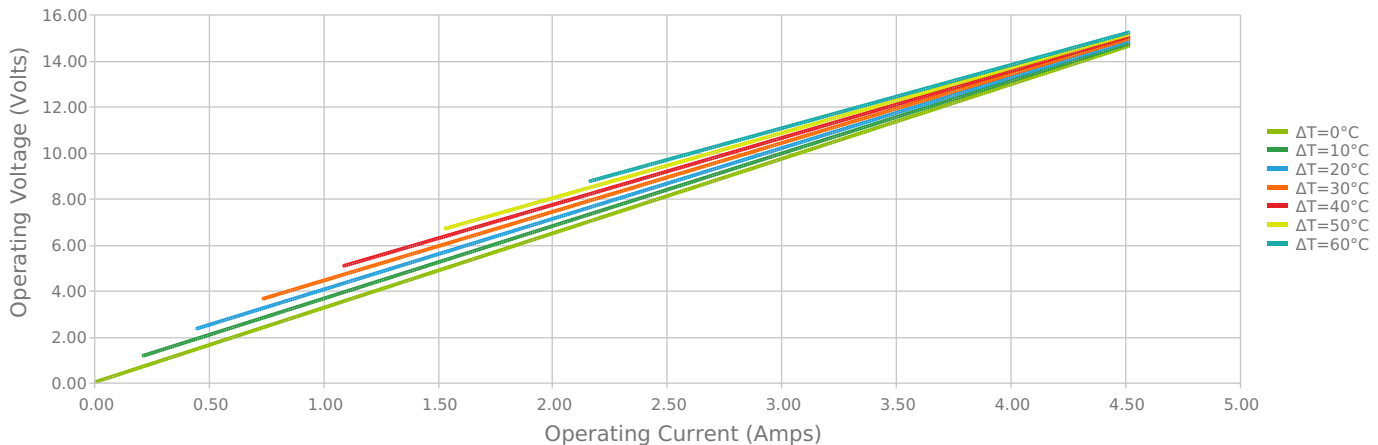
Heat Pumped at Cold Side
Thot = 27 °C



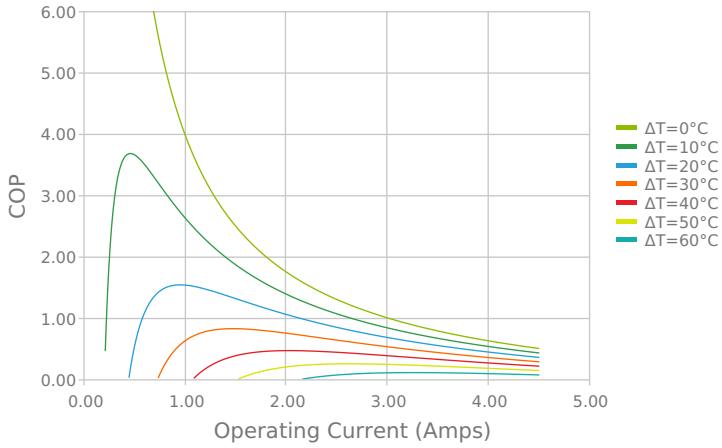
Heat Pumped at Cold Side
Thot = 27 °C



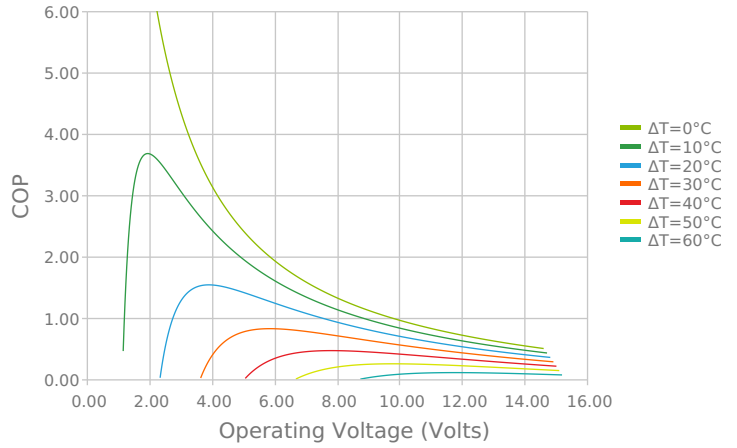
Current vs Voltage (I vs V)
Thot = 27 °C



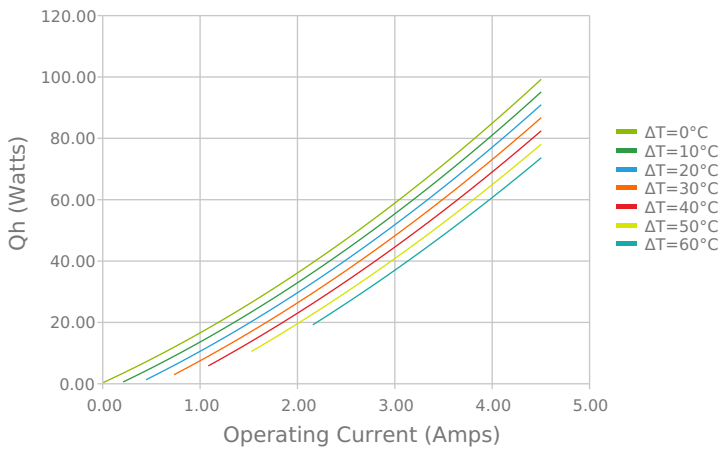
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



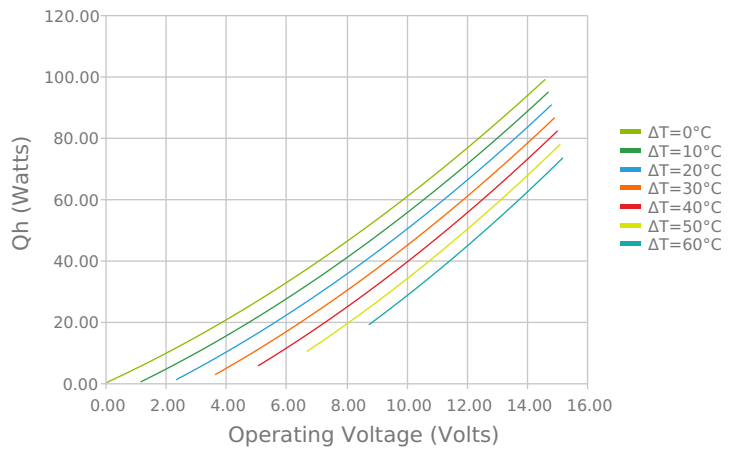
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



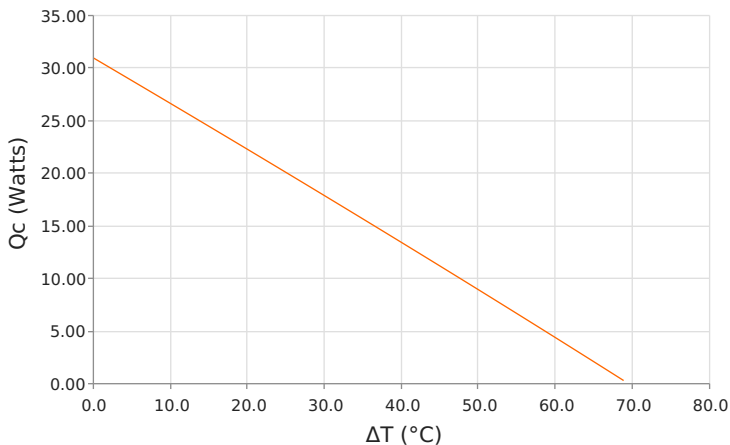
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



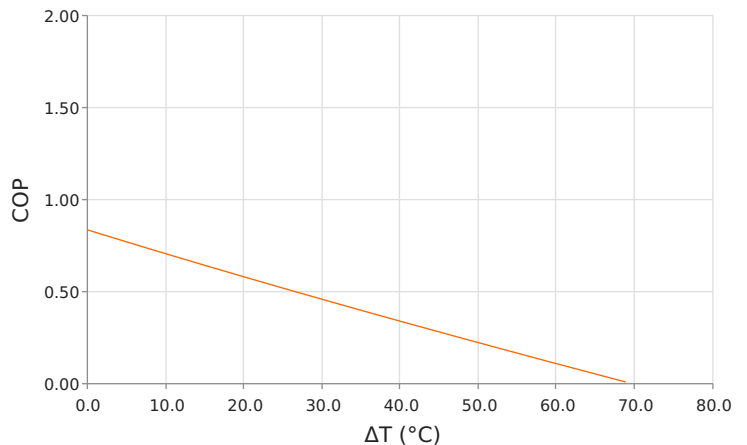
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



Heat Pumped at Cold Side (Qc)
Thot = 27 °C | Current = 3.4 Amps



Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 3.4 Amps



SPECIFICATIONS*

| Hot Side Temperature | 27.0 °C | 35.0 °C | 50.0 °C |
|---|--------------|------------|------------|
| Q_{cmax} (ΔT = 0) | 33.0 Watts | 34.0 Watts | 35.8 Watts |
| ΔT_{max} (Q_c = 0) | 70.5°C | 73.5°C | 78.8°C |
| I_{max} (I @ ΔT_{max}) | 4.0 Amps | 4.0 Amps | 3.9 Amps |
| V_{max} (V @ ΔT_{max}) | 13.9 Volts | 14.4 Volts | 15.4 Volts |
| Module Resistance | 3.24 Ohms | 3.37 Ohms | 3.62 Ohms |
| Max Operating Temperature | 80 °C | | |
| Weight | 11.0 gram(s) | | |

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|--------------------------------------|--|----------|-----------|---------------------|
| TA | 3.404 ±0.025 mm 0.134 ± 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 |
|--------|---------|-------|------------|----------------------|
| | None | | | No sealing specified |

NOTES

1. Max operating temperature: 80°C
2. Do not exceed I_{max} or V_{max} when operating module
3. Reference assembly guidelines for recommended installation

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