

PowerCycling PC Series Thermoelectric Cooler

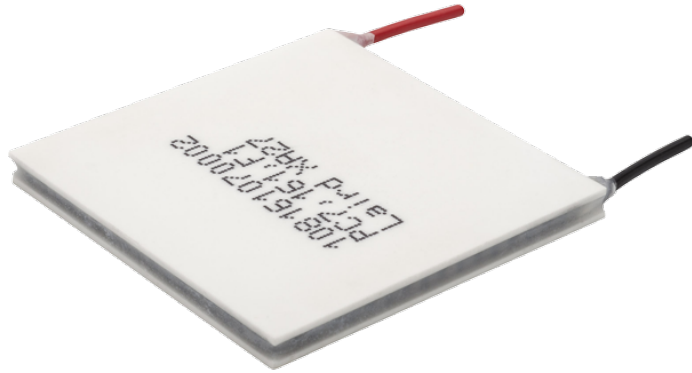
Note: This product is not recommended for new designs.

This product series has been replaced with the PowerCycling PCX Series.

The recommended replacement is:

MFG Part Number: 387005684

Description: PCX7-16-F1-4040-TA-RT-W6

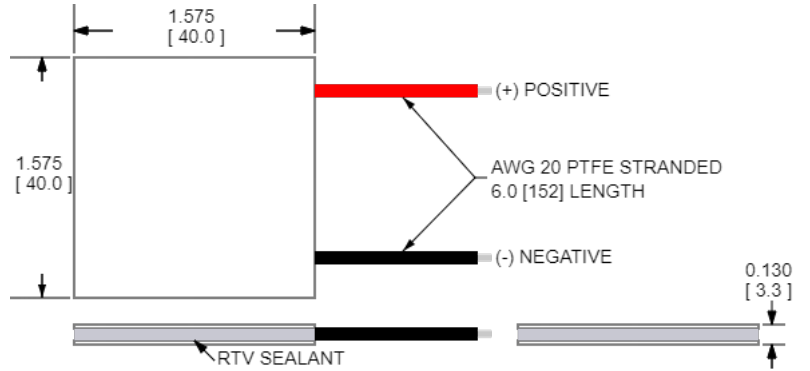


Features

- High thermal cycling capability
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- RoHS-compliant

Applications

- Thermoelectric Modules Accelerate PCR Thermal Cycling
- DNA Amplification (PCR)



CERAMIC MATERIAL: Al₂O₃

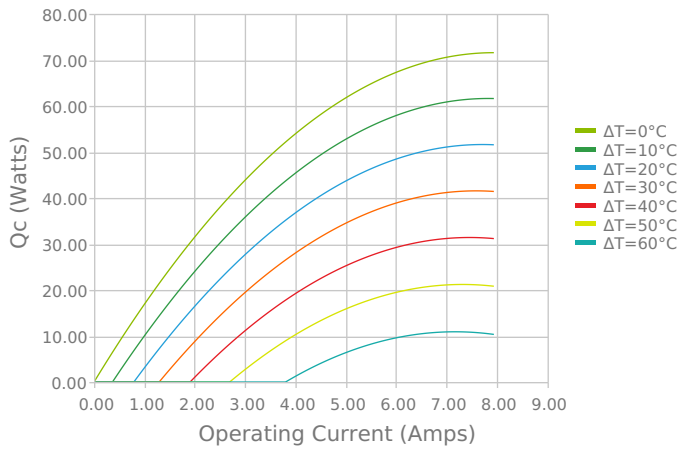
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

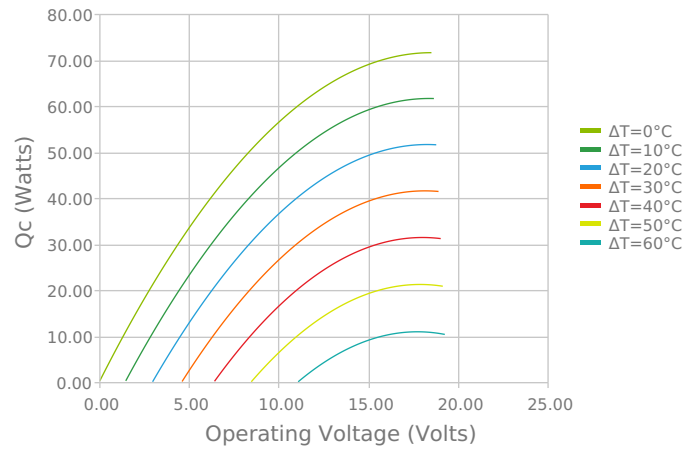
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

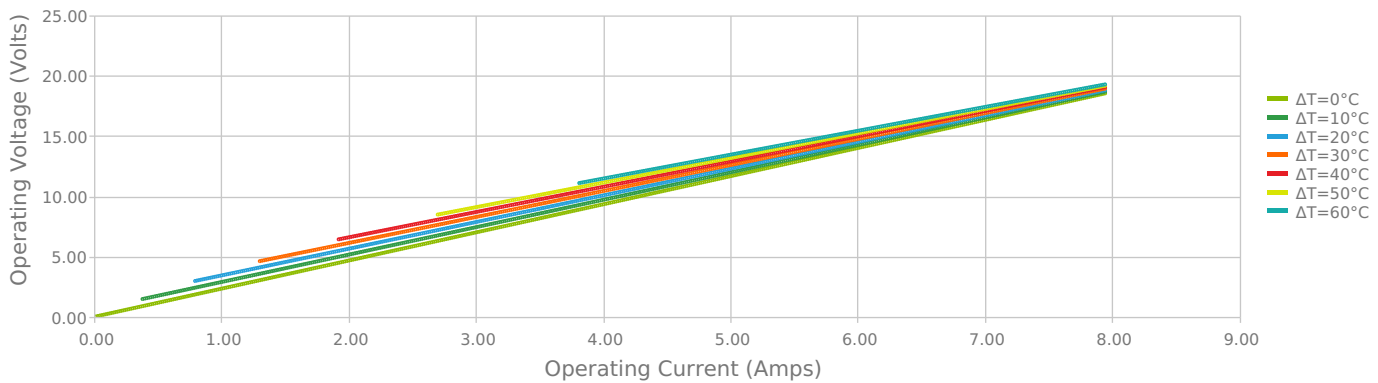
Heat Pumped at Cold Side
Thot = 27 °C



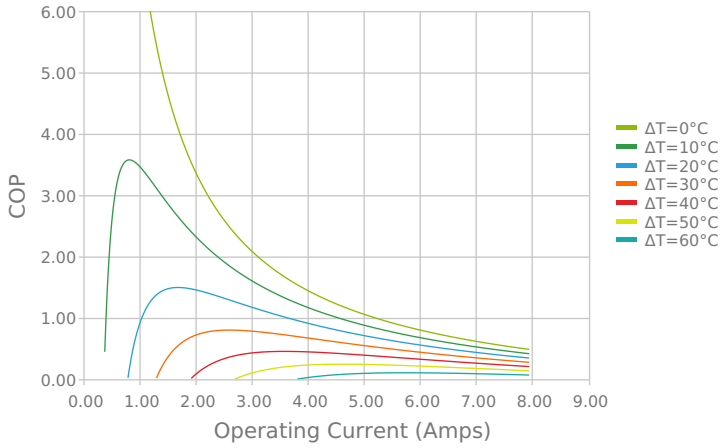
Heat Pumped at Cold Side
Thot = 27 °C



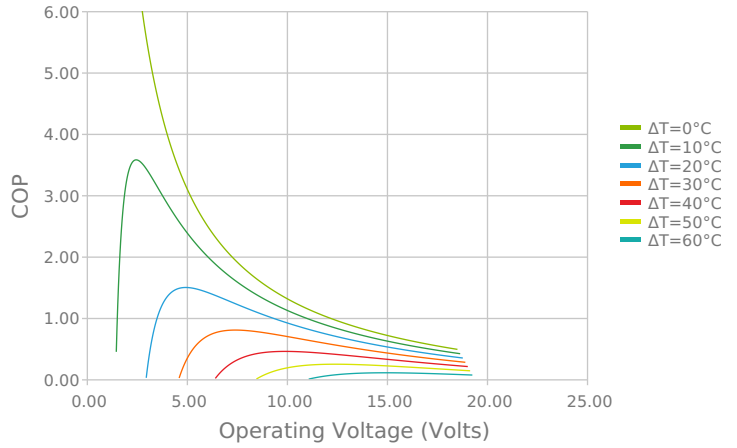
Current vs Voltage (I vs V)
Thot = 27 °C



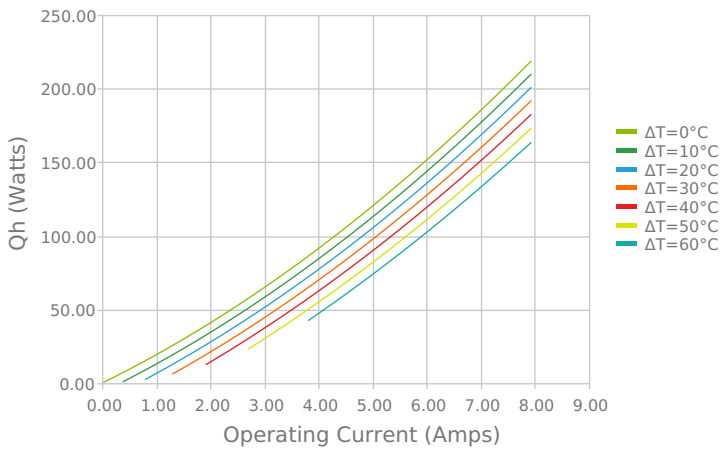
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



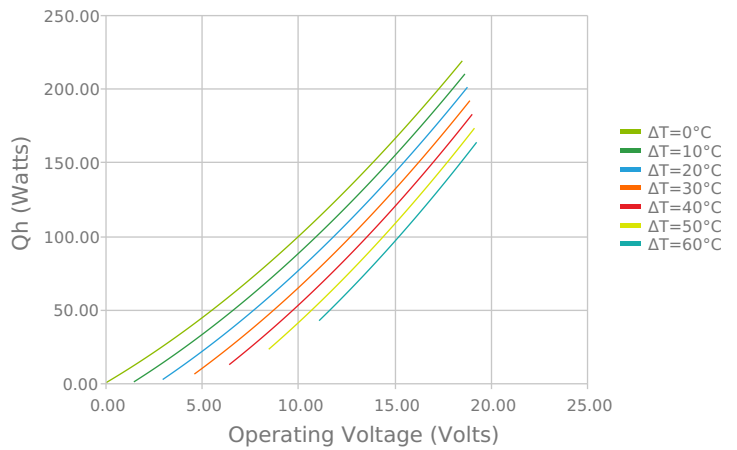
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



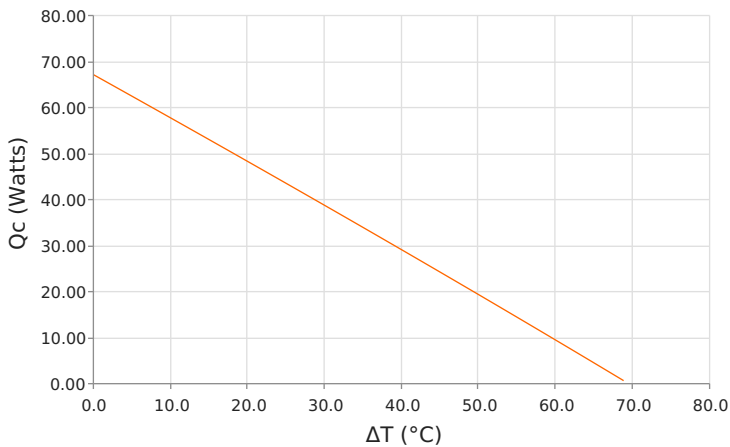
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



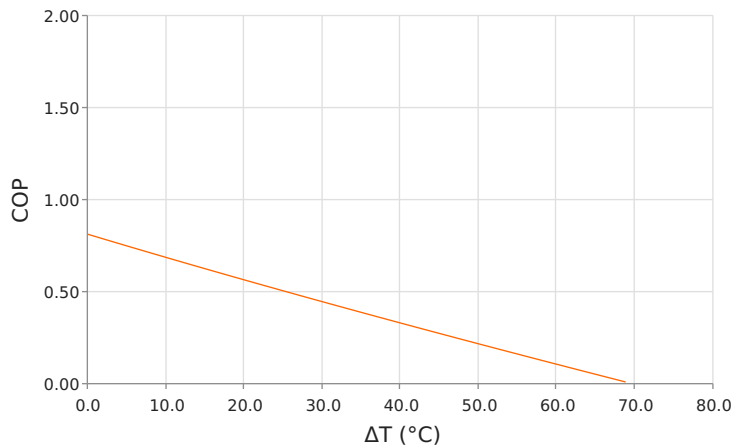
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



Heat Pumped at Cold Side (Qc)
Thot = 27 °C | Current = 6.0 Amps



Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 6.0 Amps



SPECIFICATIONS*

| Hot Side Temperature | 27.0 °C | 50.0 °C | 80.0 °C |
|---|--------------|------------|------------|
| Qcmax ($\Delta T = 0$) | 71.6 Watts | 77.6 Watts | 84.1 Watts |
| ΔT_{max} ($Q_c = 0$) | 70.5°C | 78.8°C | 88.8°C |
| I_{max} (I @ ΔT_{max}) | 7.0 Amps | 6.9 Amps | 6.8 Amps |
| V_{max} (V @ ΔT_{max}) | 17.6 Volts | 19.5 Volts | 22.0 Volts |
| Module Resistance | 2.33 Ohms | 2.61 Ohms | 2.97 Ohms |
| Max Operating Temperature | 120 °C | | |
| Weight | 20.0 gram(s) | | |

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|---------------------------------------|--|----------|-----------|---------------------|
| TA | 3.300 ± 0.025 mm 0.130 ± 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: 120°C
2. Do not exceed I_{max} or V_{max} when operating module
3. Reference assembly guidelines for recommended installation
4. Solder tinning also available on metallized ceramics

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