

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: 387005695

Description: PCX8-12-F1-4040-TA-RT-W6

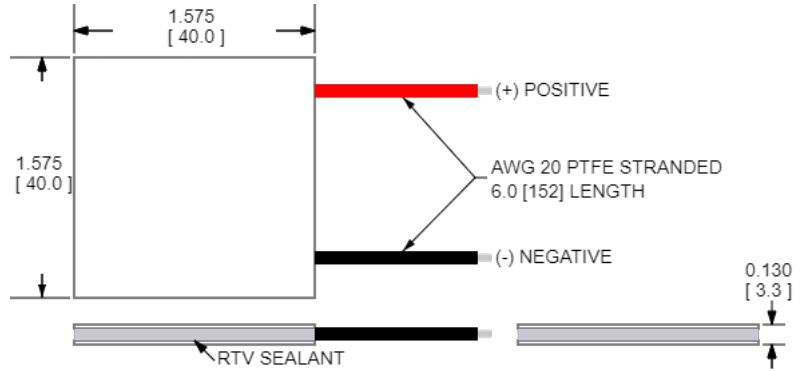


Features

- 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

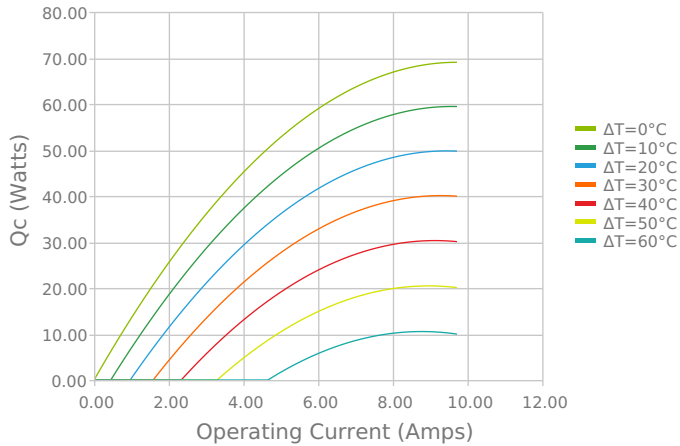
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

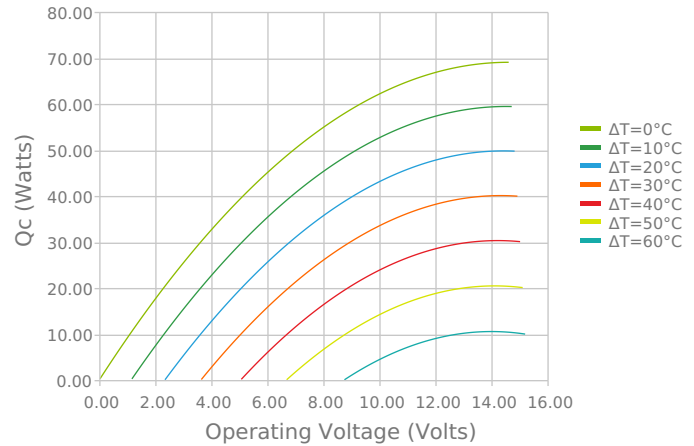
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

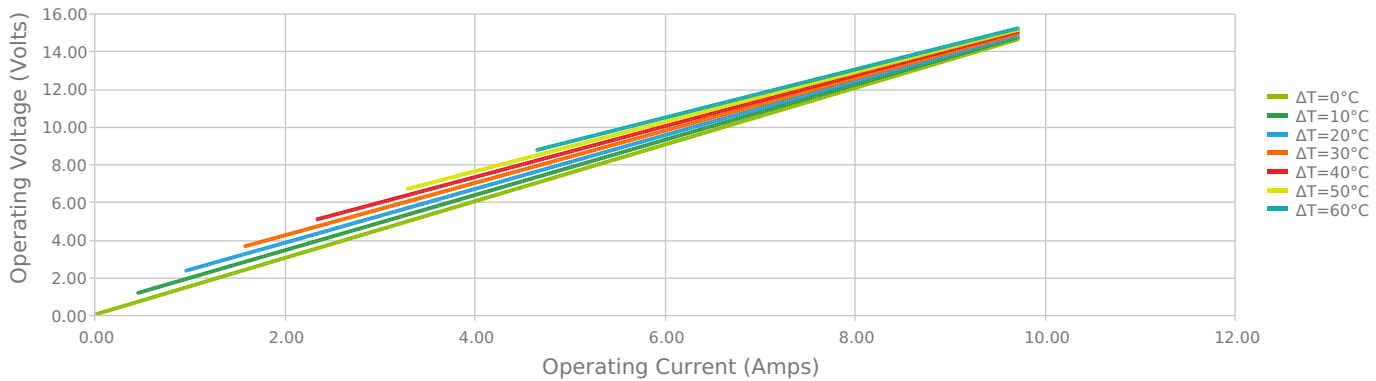
Heat Pumped at Cold Side
Thot = 27 °C



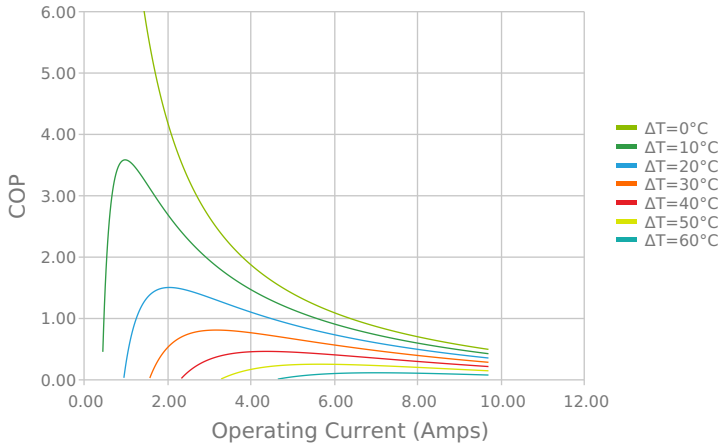
Heat Pumped at Cold Side
Thot = 27 °C



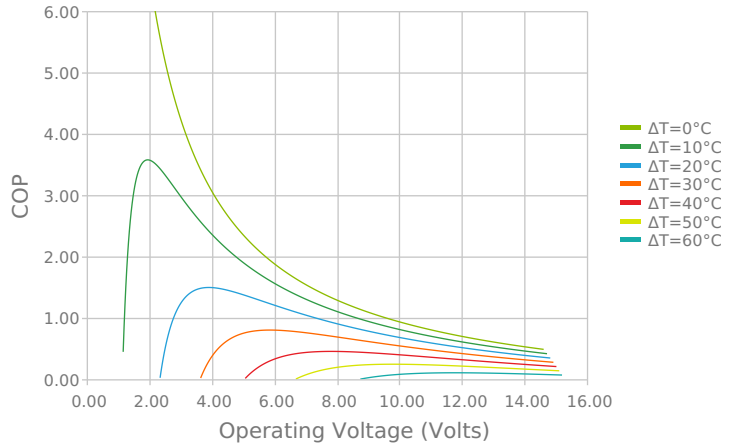
Current vs Voltage (I vs V)
Thot = 27 °C



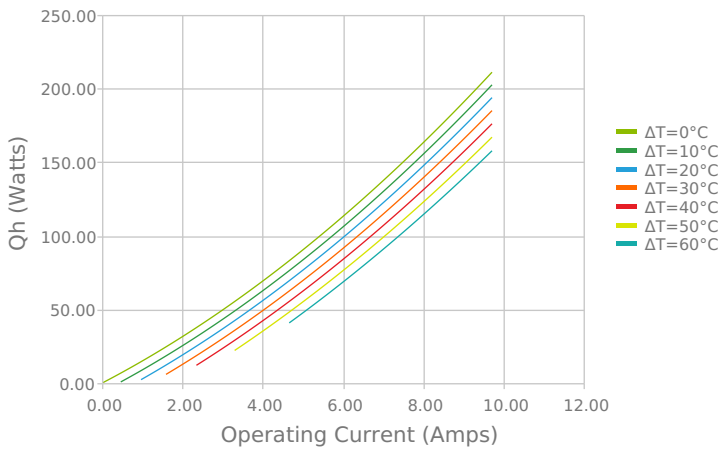
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



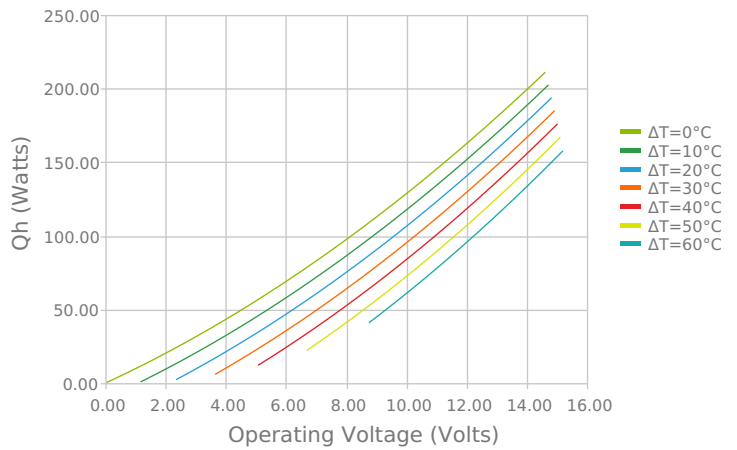
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



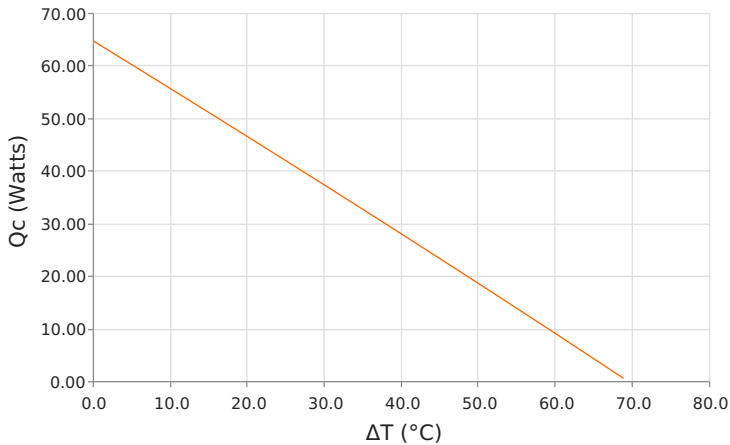
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



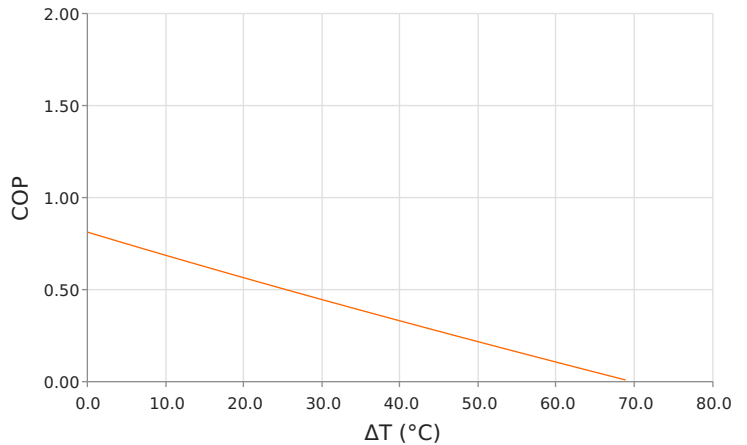
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



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



Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 7.3 Amps



SPECIFICATIONS*

Hot Side Temperature	27.0 °C	50.0 °C	80.0 °C
Qcmax ($\Delta T = 0$)	69.0 Watts	74.9 Watts	81.2 Watts
ΔT_{max} ($Q_c = 0$)	70.5°C	78.8°C	88.8°C
I_{max} (I @ ΔT_{max})	8.6 Amps	8.4 Amps	8.3 Amps
V_{max} (V @ ΔT_{max})	13.9 Volts	15.4 Volts	17.4 Volts
Module Resistance	1.50 Ohms	1.68 Ohms	1.92 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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Date: 01/08/2022