

PowerCycling PC Series Thermoelectric Cooler

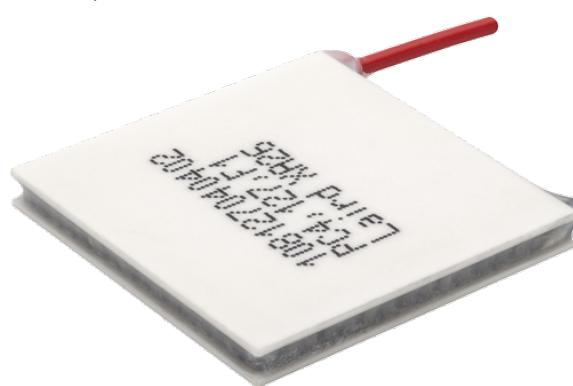
Note: This product is not recommended for new designs.

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

The recommended replacement is:

MFG Part Number: 387005670

Description: PCX4-12-F1-3030-TA-RT-W6

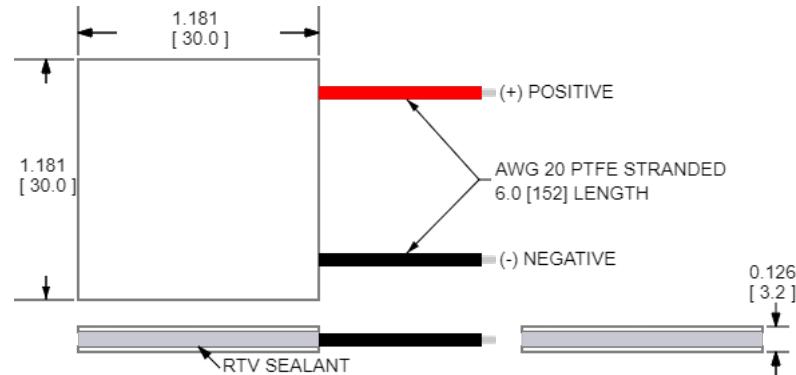


Features

- 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: Al_2O_3

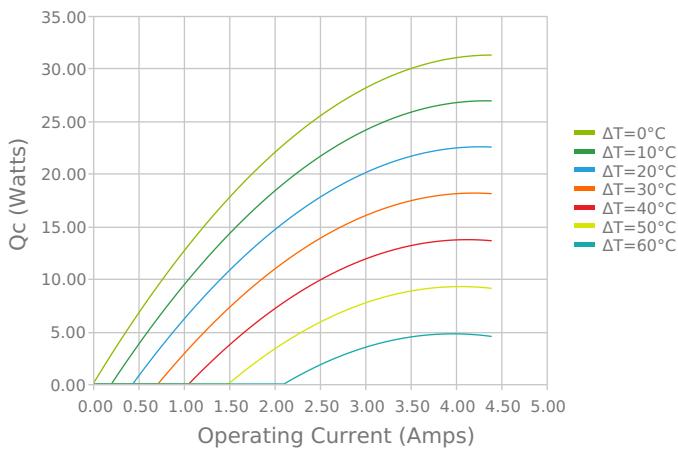
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

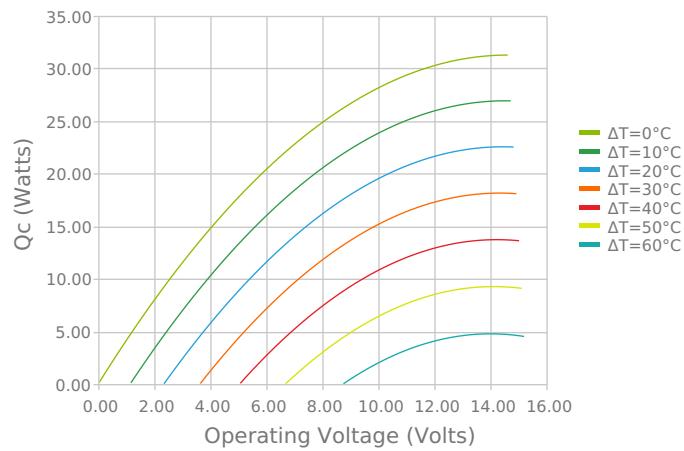
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

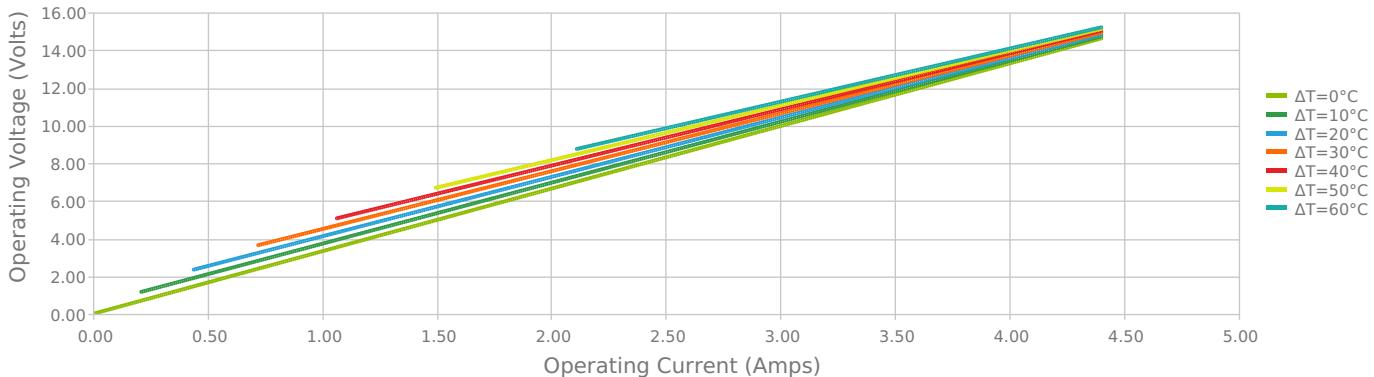
Heat Pumped at Cold Side
Thot = 27 °C

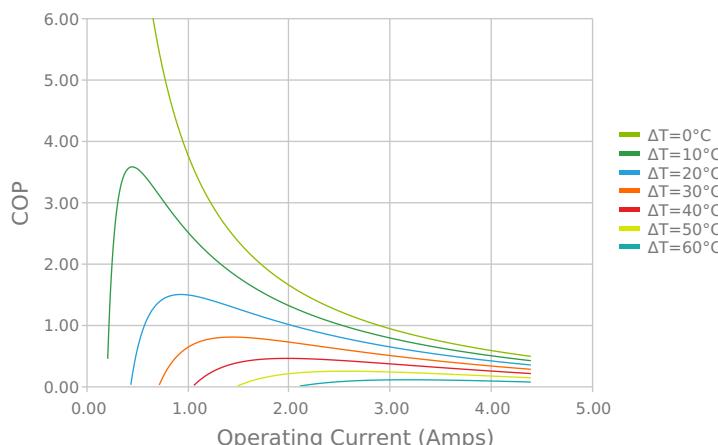
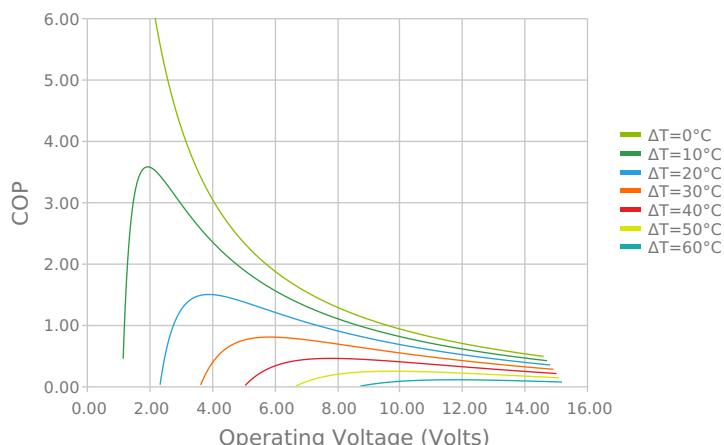
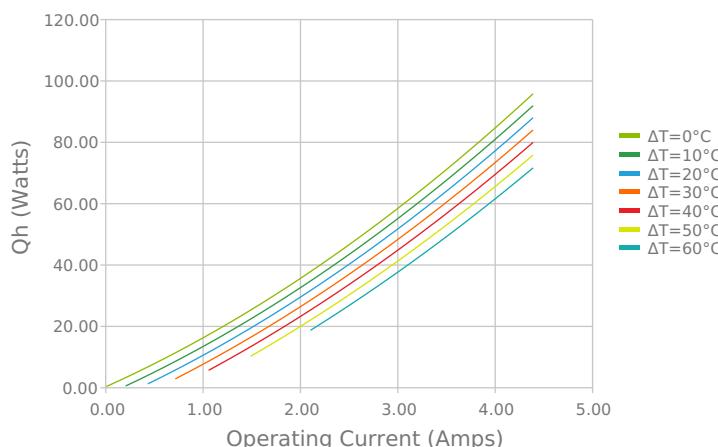
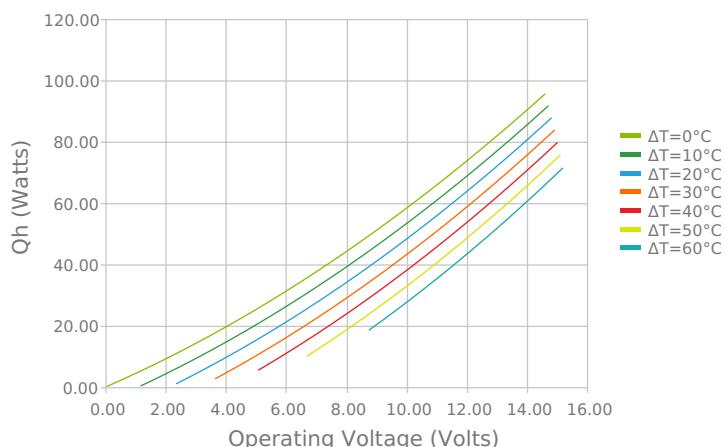
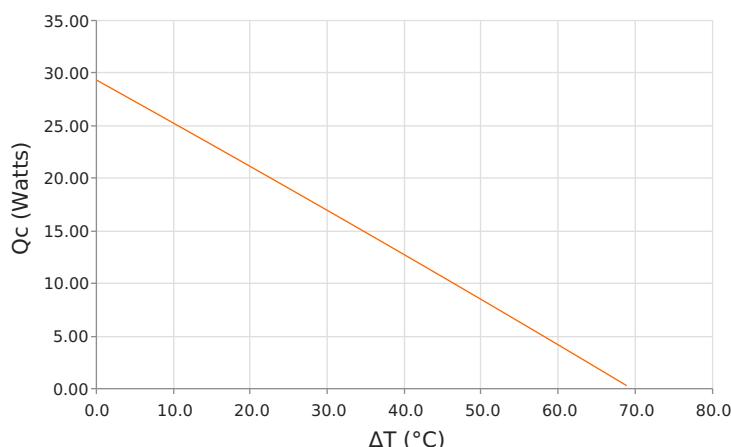
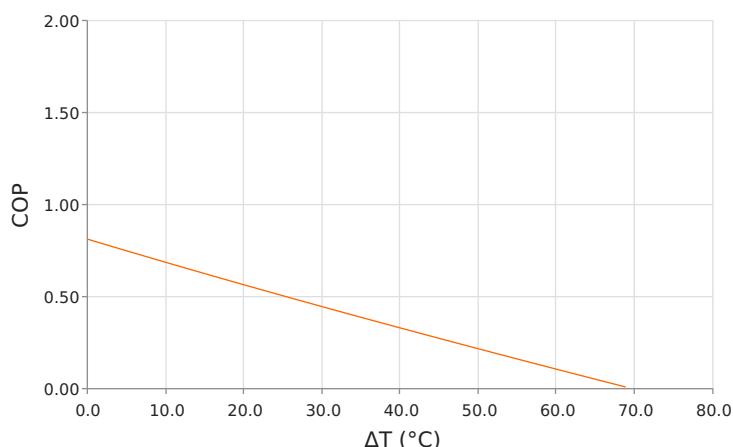


Heat Pumped at Cold Side
Thot = 27 °C



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



Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27^\circ\text{C}$

 Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27^\circ\text{C}$

 Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27^\circ\text{C}$

 Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27^\circ\text{C}$

 Heat Pumped at Cold Side (Q_c)
 $T_{hot} = 27^\circ\text{C}$ | Current = 3.3 Amps

 Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27^\circ\text{C}$ | Current = 3.3 Amps


SPECIFICATIONS*

	27.0 °C	50.0 °C	80.0 °C
Qcmax (ΔT = 0)	31.3 Watts	33.9 Watts	36.8 Watts
ΔTmax (Qc = 0)	70.5°C	78.8°C	88.8°C
I_{max} (I @ ΔT_{max})	3.9 Amps	3.8 Amps	3.7 Amps
V_{max} (V @ ΔT_{max})	13.9 Volts	15.4 Volts	17.4 Volts
Module Resistance	3.32 Ohms	3.72 Ohms	4.23 Ohms
Max Operating Temperature	120 °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	3.200 ± 0.025 mm 0.126 ± 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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