

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: 387005516

Description: PCX12-19-F1-4040-TA-RT-W6

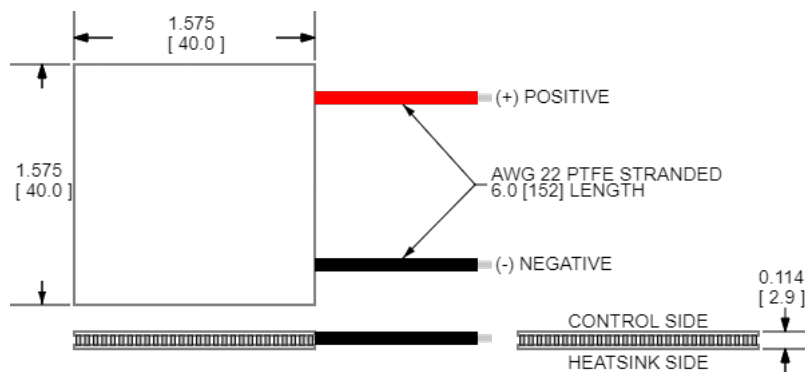


Features

- 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: Al_2O_3

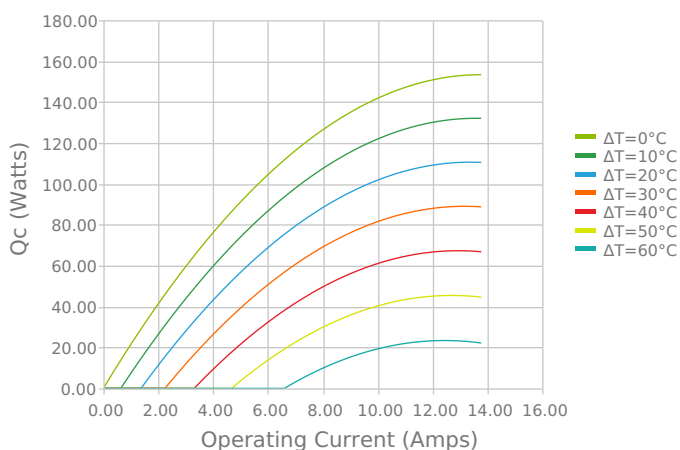
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

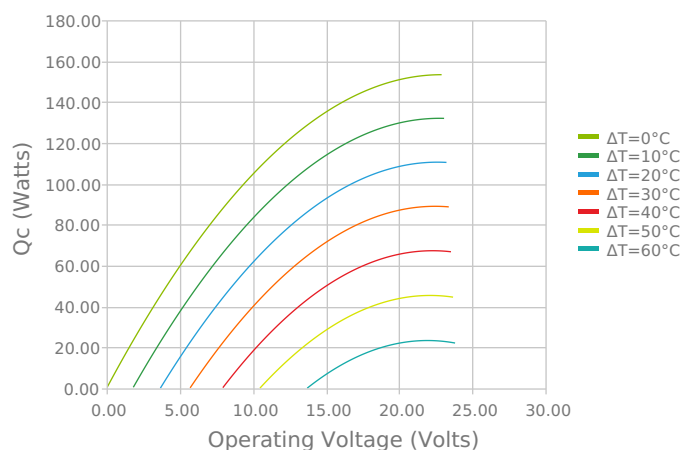
ELECTRICAL AND THERMAL PERFORMANCE

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.

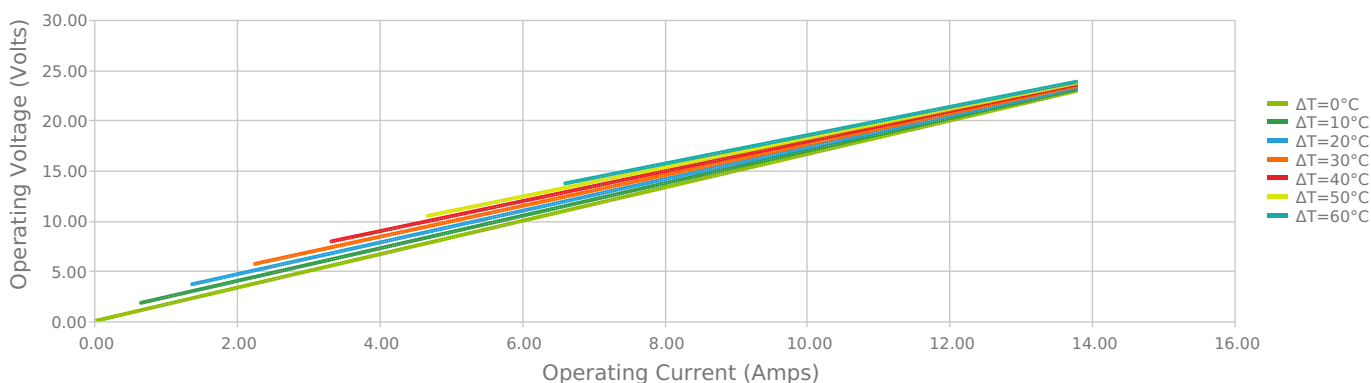
Heat Pumped at Cold Side
 $T_{\text{hot}} = 27^\circ\text{C}$



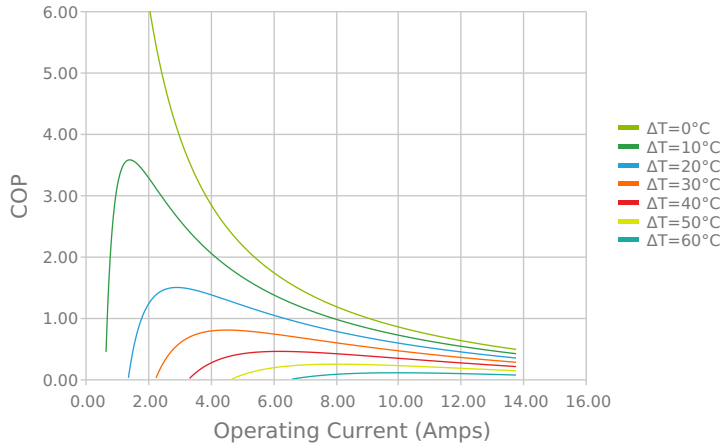
Heat Pumped at Cold Side
 $T_{\text{hot}} = 27^\circ\text{C}$



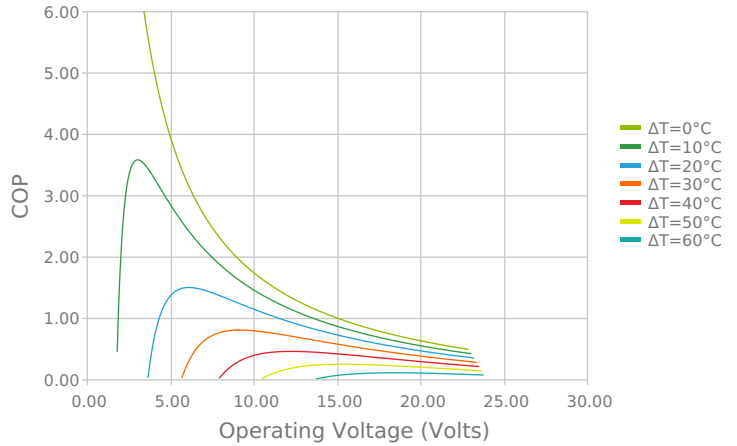
Current vs Voltage (I vs V)
 $T_{\text{hot}} = 27^\circ\text{C}$



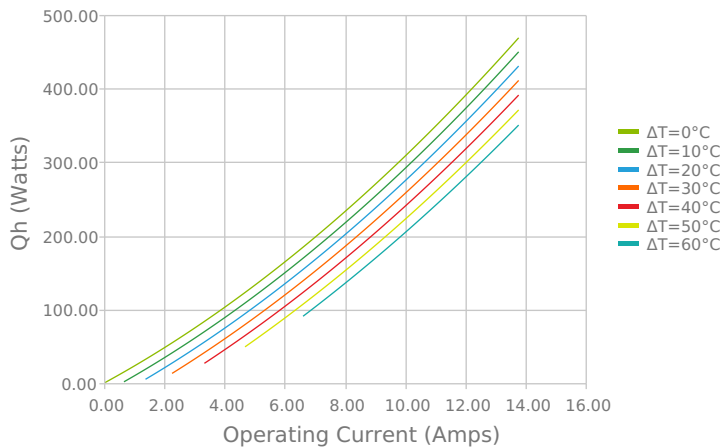
Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C



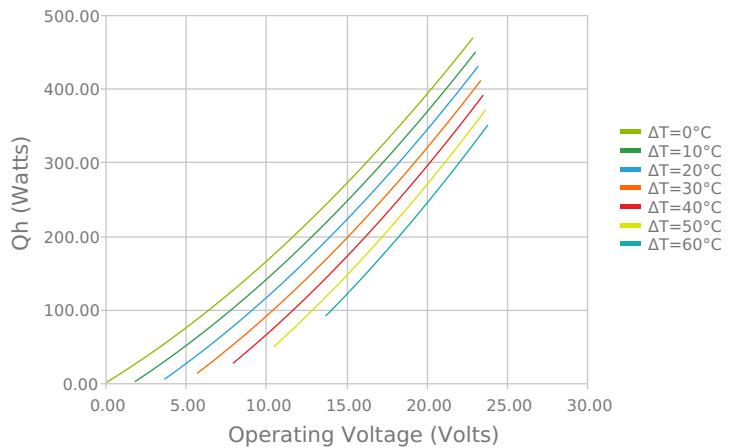
Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C



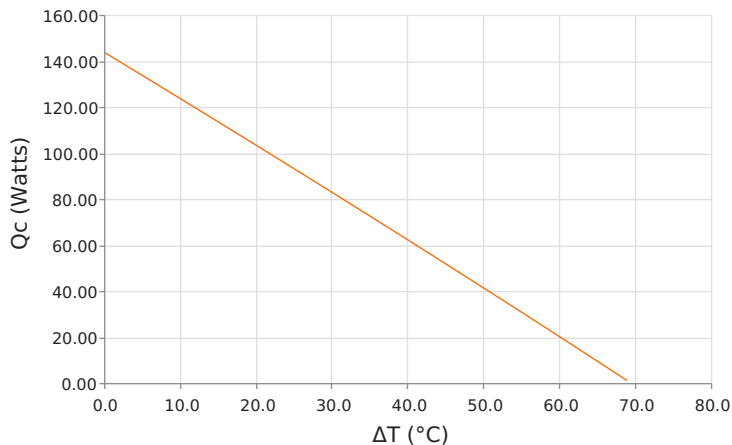
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Thot = 27 °C



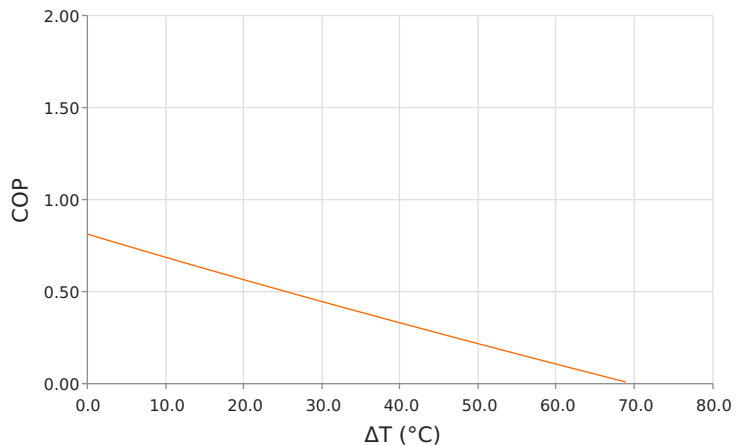
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
Thot = 27 °C



Heat Pumped at Cold Side (Q_c)
Thot = 27 °C | Current = 10.3 Amps



Coefficient of Performance (COP = Q_c/P_{in})
Thot = 27 °C | Current = 10.3 Amps



SPECIFICATIONS*

Hot Side Temperature

Qcmax ($\Delta T = 0$)

ΔT_{max} ($Q_c = 0$)

I_{max} (I @ ΔT_{max})

V_{max} (V @ ΔT_{max})

Module Resistance

Max Operating Temperature

Weight

	27.0 °C	50.0 °C	80.0 °C
Qcmax ($\Delta T = 0$)	153.4 Watts	166.3 Watts	180.3 Watts
ΔT_{max} ($Q_c = 0$)	70.5°C	78.8°C	88.8°C
I _{max} (I @ ΔT_{max})	12.2 Amps	12.0 Amps	11.7 Amps
V _{max} (V @ ΔT_{max})	21.7 Volts	24.1 Volts	27.2 Volts
Module Resistance	1.66 Ohms	1.86 Ohms	2.12 Ohms
Max Operating Temperature	120 °C		
Weight	50.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	2.900 ±0.025 mm 0.114 ± 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: 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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