

PowerCycling PCX Series Thermoelectric Cooler

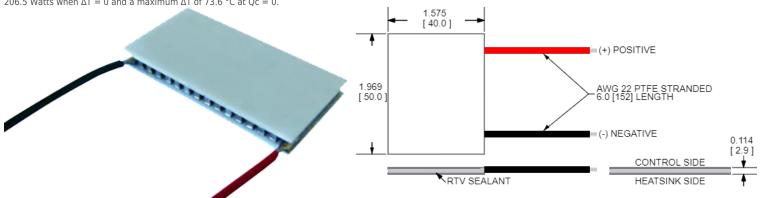
The PCX12-248-F1-5040-TA-RT-W6 is a high-performance thermoelectric cooler designed for thermal cycling between multiple temperature set points and is ideal for applications in healthcare among others, where fast temperature changes are required. The thermoelectric module is specially constructed to reduce the amount of stress induced on the thermoelectric elements during operation. It has a maximum Qc of 206.5 Watts when $\Delta T=0$ and a maximum ΔT of 73.6 °C at Qc = 0.

Features

- High thermal cycling reliability
- Precise temperature control
- Solid-state operation
- Boosted performance with next-gen material
- RoHS-compliant

Applications

- Molecular Diagnostics (DNA Amplification, PCR)
- Point of Care Testing Devices
- Thermal Test Sockets



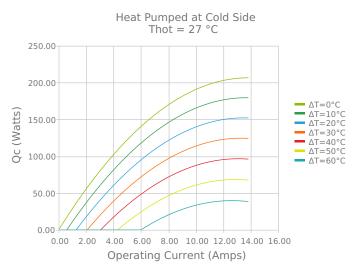
CERAMIC MATERIAL: Al₂O₃ SOLDER CONSTRUCTION: 232°C, SbSn

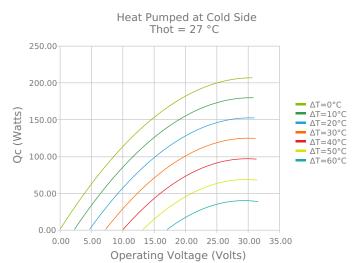
INCHES [MM]

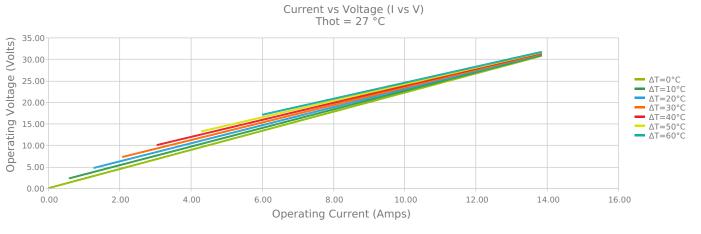
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

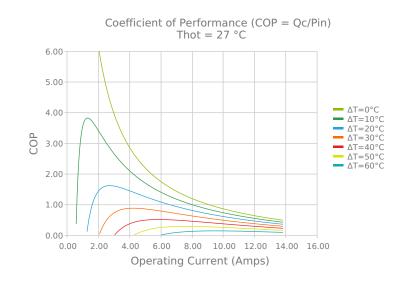
For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the HEATSINK side against the heat sink or other heat rejection method. The CONTROL side is always opposite the side with lead attachments. Lead attachment is a passive heat loss and less impactful if located on the side that attaches to the heat exchanger.

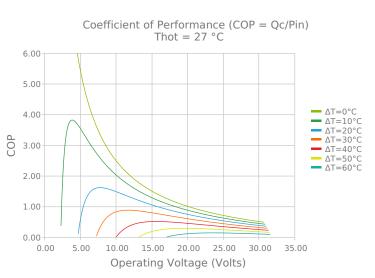


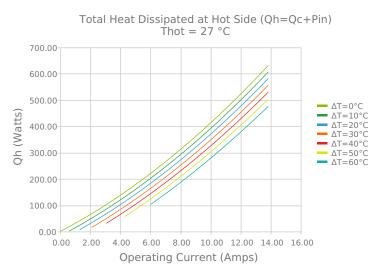


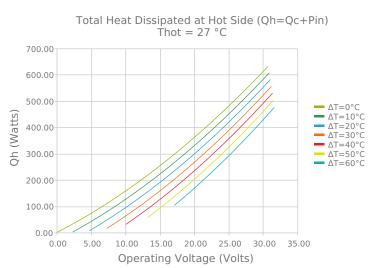


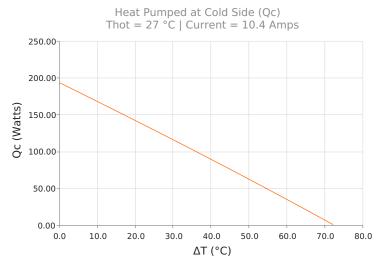


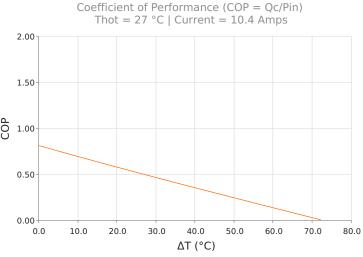














SPECIFICATIONS*

Hot Side Temperature

 $Qcmax (\Delta T = 0)$

 $\Delta T max (Qc = 0)$

Imax (I @ ATmax)

Vmax (V @ Δ Tmax)

Module Resistance

Max Operating Temperature

Weight

27.0 °C	50.0 °C	80.0 °C
206.5 Watts	222.2 Watts	238.3 Watts
73.6°C	82.6°C	93.1°C
12.3 Amps	12.0 Amps	11.7 Amps
29.0 Volts	32.3 Volts	36.4 Volts
2.22 Ohms	2.50 Ohms	2.86 Ohms
120 °C		
36.0 gram(s)		

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
		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 Imax or Vmax when operating module
- 3. Reference assembly guidelines for recommended installation
- 4. Solder tinning also available on metallized ceramics

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^{*} Specifications reflect thermoelectric coefficients updated March 2020