

### PowerCycling PCX Series Thermoelectric Cooler

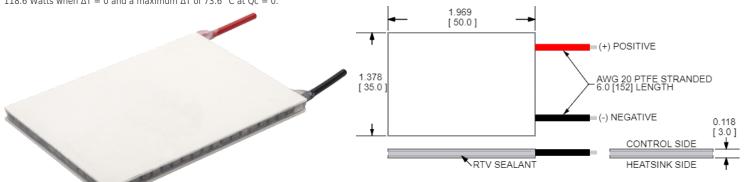
The PCX12-139-F1-3550-TA-RT-W6 is a high-performance thermoelectric cooler designed for thermal cycling between multiple temperature set points and is ideal for applications in healthcare among others, where fast temperature changes are required. The thermoelectric module is specially constructed to reduce the amount of stress induced on the thermoelectric elements during operation. It has a maximum Qc of 118.6 Watts when  $\Delta T=0$  and a maximum  $\Delta T$  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



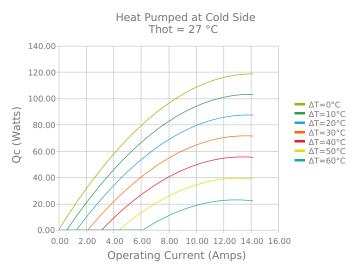
CERAMIC MATERIAL: Al₂O₃ SOLDER CONSTRUCTION: 232°C, SbSn

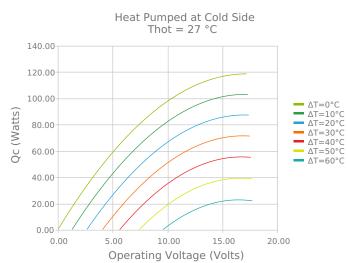
INCHES [ MM ]

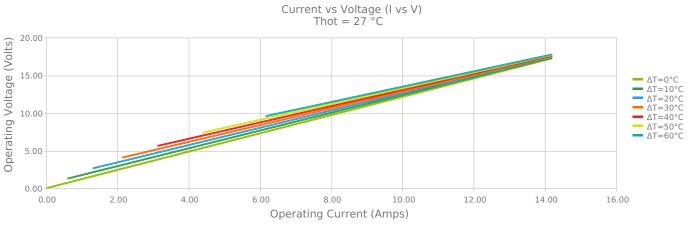
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

#### **ELECTRICAL AND THERMAL PERFORMANCE**

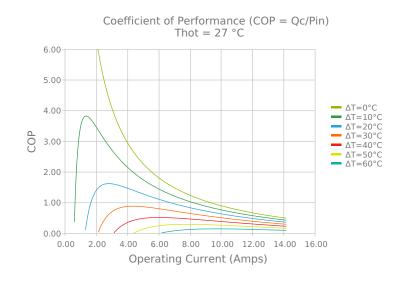
For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the HEATSINK side against the heat sink or other heat rejection method. The CONTROL side is always opposite the side with lead attachments. Lead attachment is a passive heat loss and less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

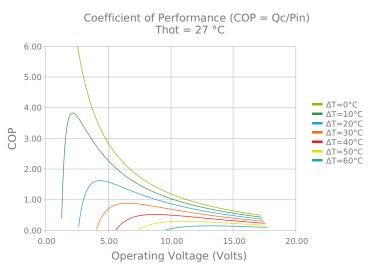


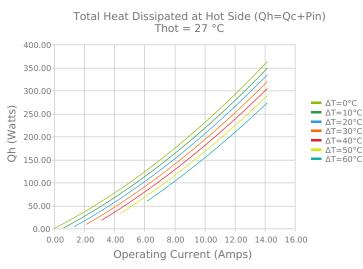


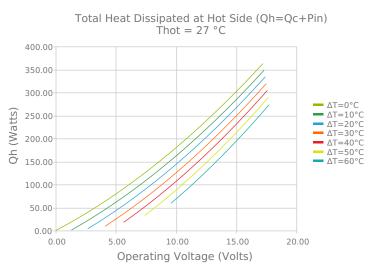


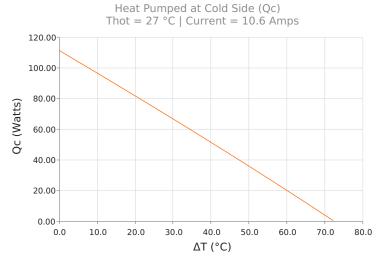


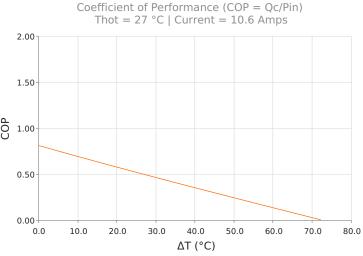














### **SPECIFICATIONS\***

**Hot Side Temperature** 

 $Qcmax (\Delta T = 0)$ 

 $\Delta T max (Qc = 0)$ 

Imax (I @ ATmax)

Vmax (V @  $\Delta$ Tmax)

**Module Resistance** 

**Max Operating Temperature** 

Weight

<sup>\*</sup> Specifications reflect thermoelectric coefficients updated March 2020

27.0 °C	50.0 °C	80.0 °C
118.6 Watts	127.7 Watts	136.9 Watts
73.6°C	82.6°C	93.1°C
12.6 Amps	12.3 Amps	12.0 Amps
16.3 Volts	18.1 Volts	20.4 Volts
1.21 Ohms	1.37 Ohms	1.56 Ohms
120 °C		
21.0 gram(s)		

### **FINISHING OPTIONS**

Suffix	Thickness	Flatness / Parallelism	<b>Hot Face</b>	Cold Face	<b>Lead Length</b>
		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	<b>Temp Range</b>	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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