

PowerCycling PCX Series Thermoelectric Cooler

The PCX11-191-F1-3553-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 147.8 Watts when $\Delta T = 0$ and a maximum ΔT of 73.6 °C at Qc = 0.

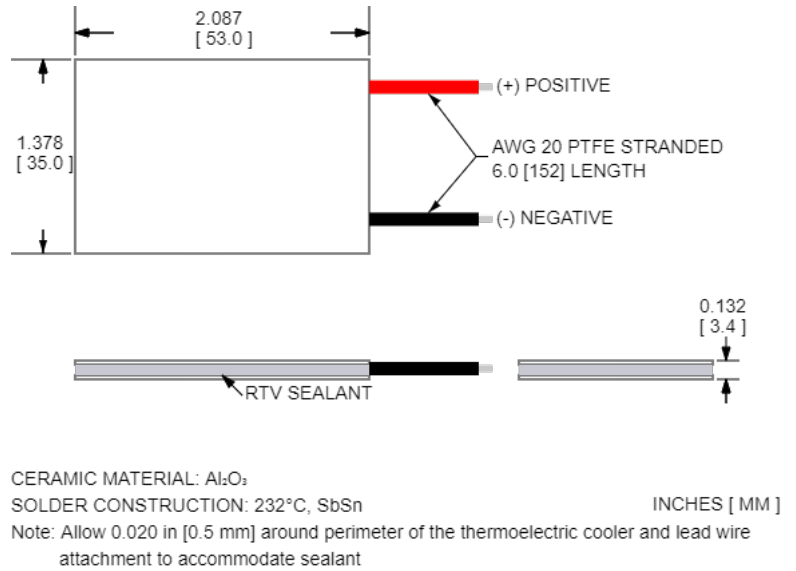


Features

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

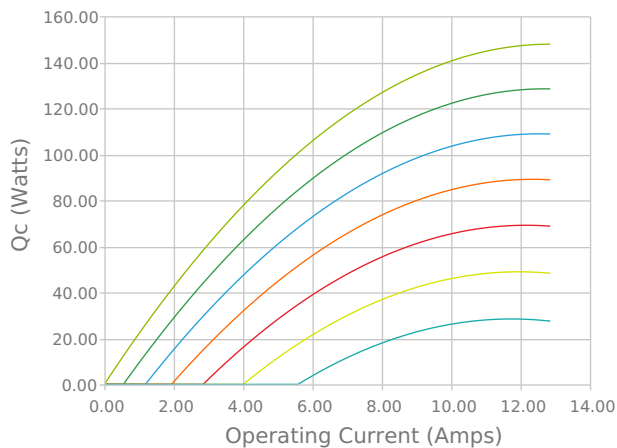
Applications

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

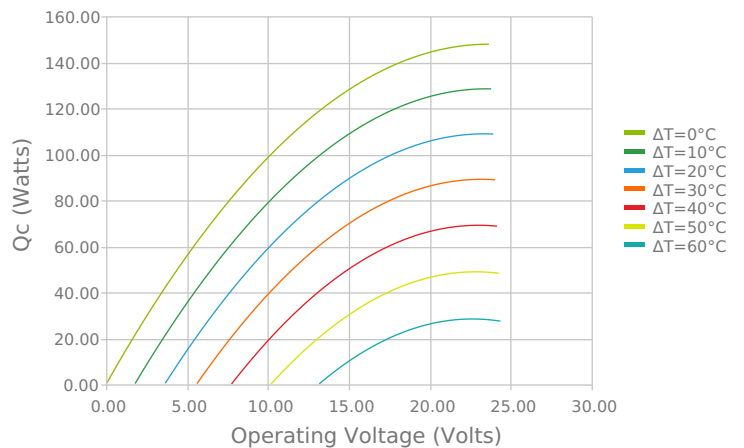


ELECTRICAL AND THERMAL PERFORMANCE

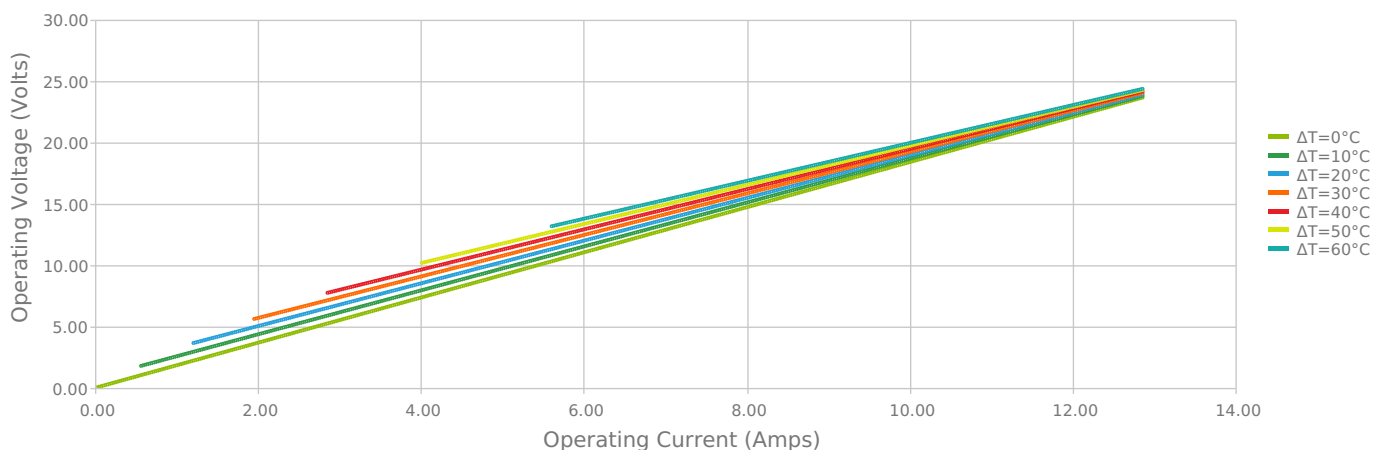
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



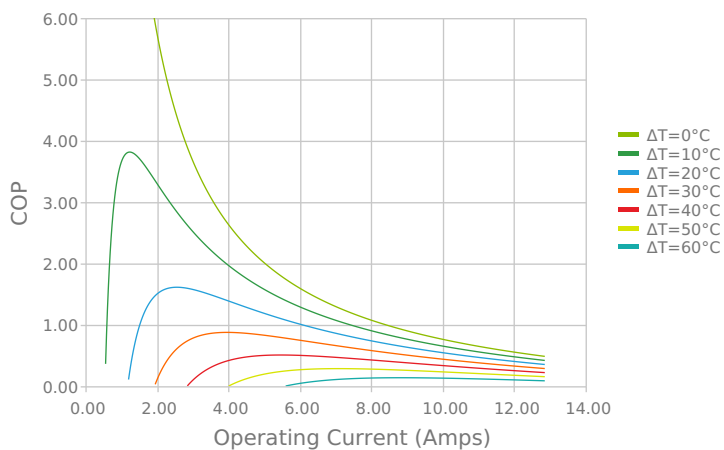
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



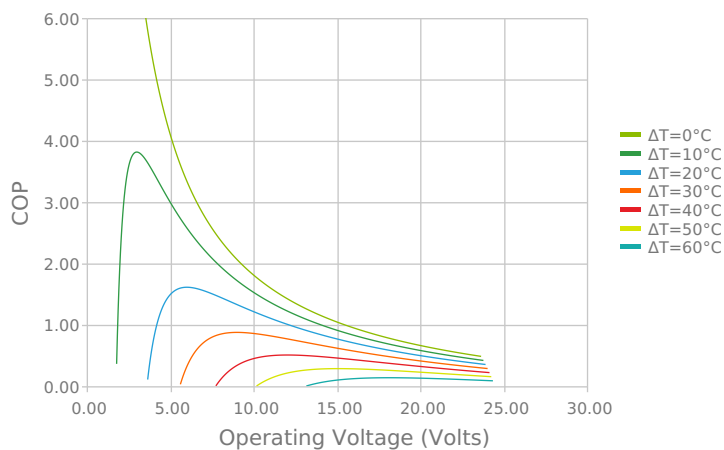
Current vs Voltage (I vs V)
 $T_{hot} = 27\text{ °C}$



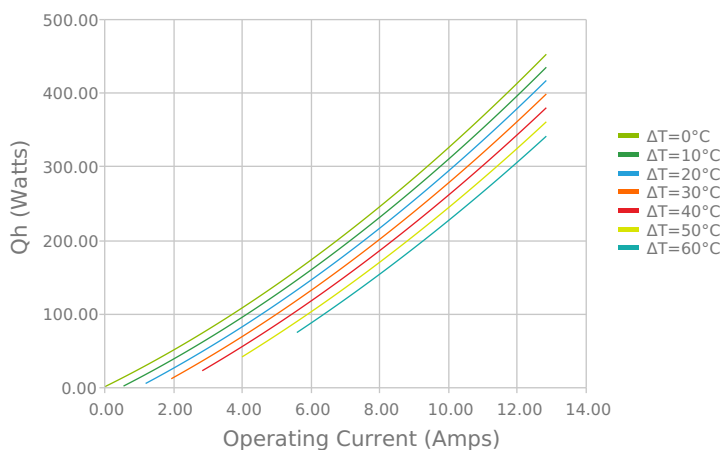
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



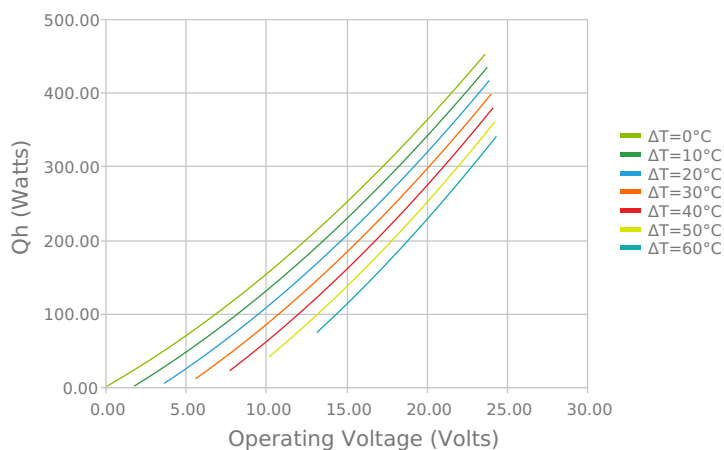
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



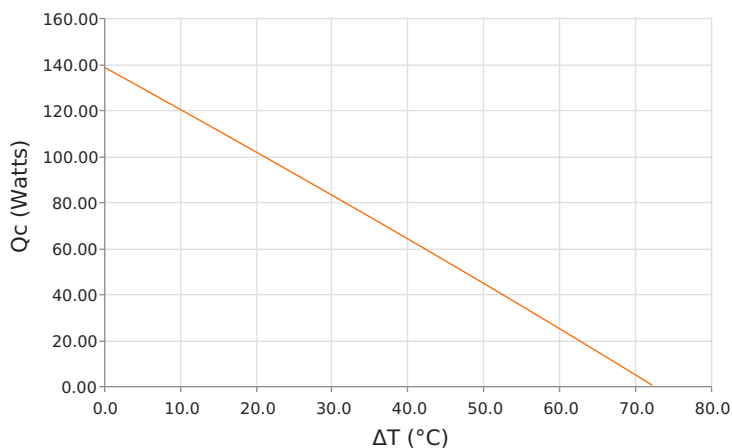
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



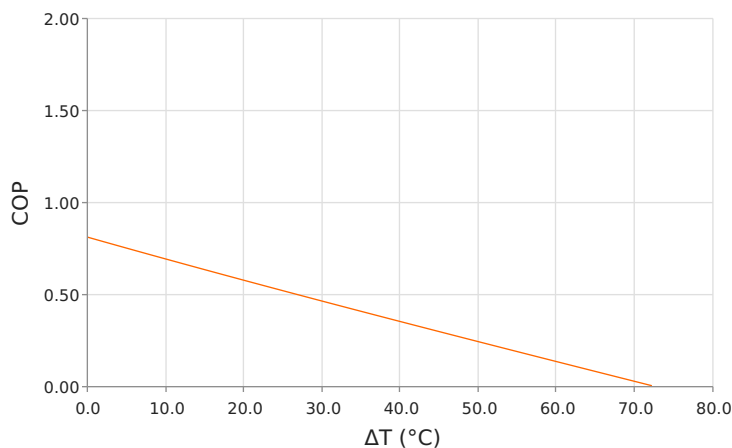
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



Heat Pumped at Cold Side (Q_c)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$ | Current = 9.6 Amps



Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$ | Current = 9.6 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 ($\Delta T = 0$)	147.8 Watts	159.1 Watts	170.6 Watts
ΔT_{max} ($Q_c = 0$)	73.6°C	82.6°C	93.1°C
I _{max} (I @ ΔT_{max})	11.4 Amps	11.2 Amps	10.8 Amps
V _{max} (V @ ΔT_{max})	22.4 Volts	24.8 Volts	28.0 Volts
Module Resistance	1.84 Ohms	2.07 Ohms	2.37 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	3.350 ±0.025 mm 0.132 ± 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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