

PowerCycling PCX Series Thermoelectric Cooler

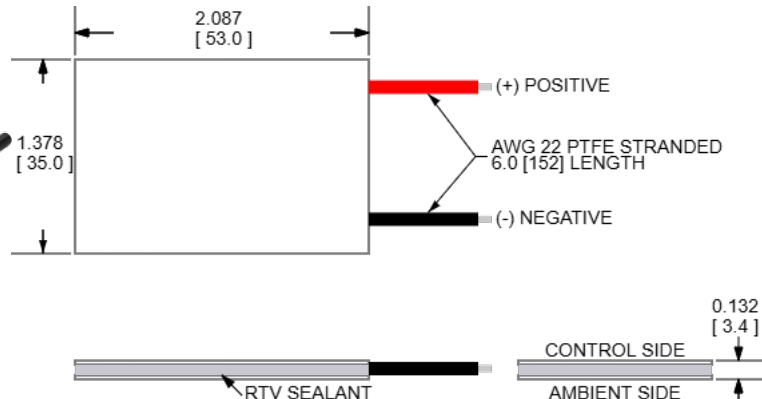
The PCX11-191-F1-3553-TA-RT-W6 is a high-performance thermoelectric cooler designed for thermal cycling between multiple temperature set points and is ideal for applications in healthcare among others, where fast temperature changes are required. The thermoelectric module is specially constructed to reduce the amount of stress induced on the thermoelectric elements during operation. It has a maximum Q_c of 147.8 Watts when $\Delta T = 0$ and a maximum ΔT of 73.6 °C at $Q_c = 0$.

**Features**

- High thermal cycling capability
- 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: Al_2O_3

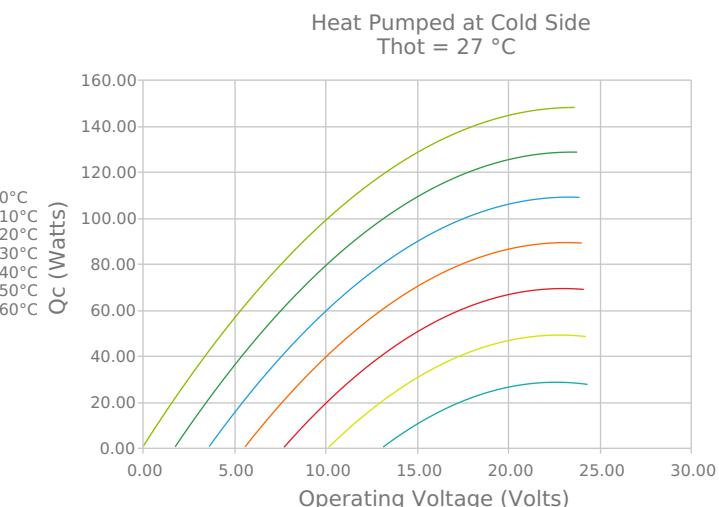
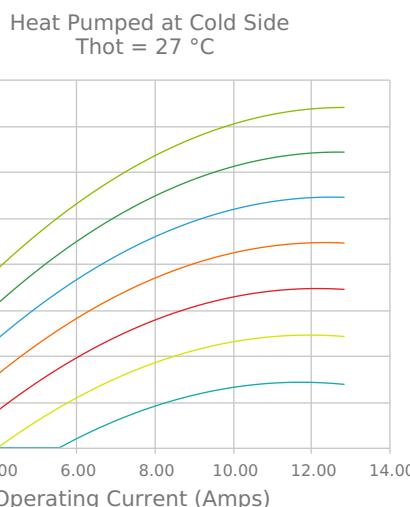
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

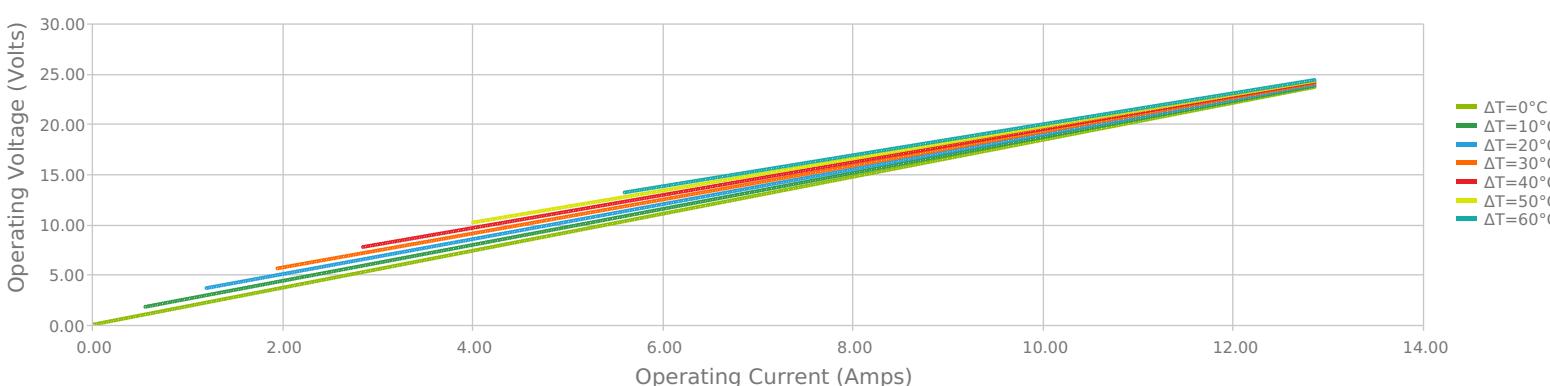
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

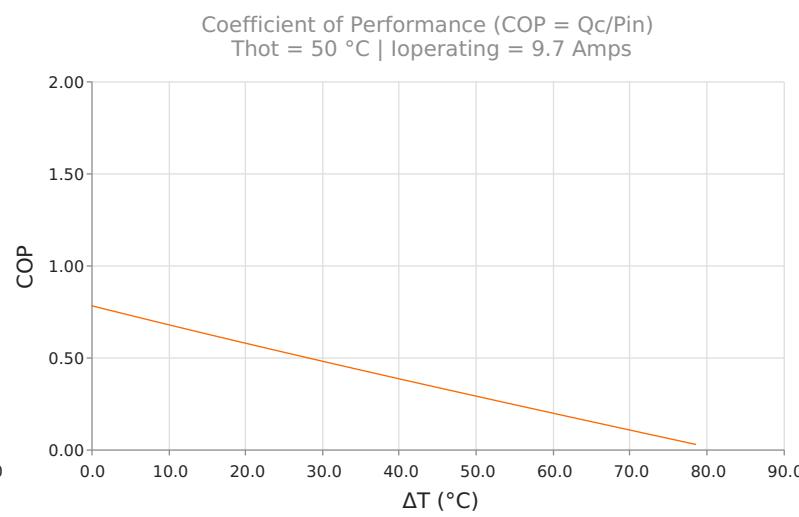
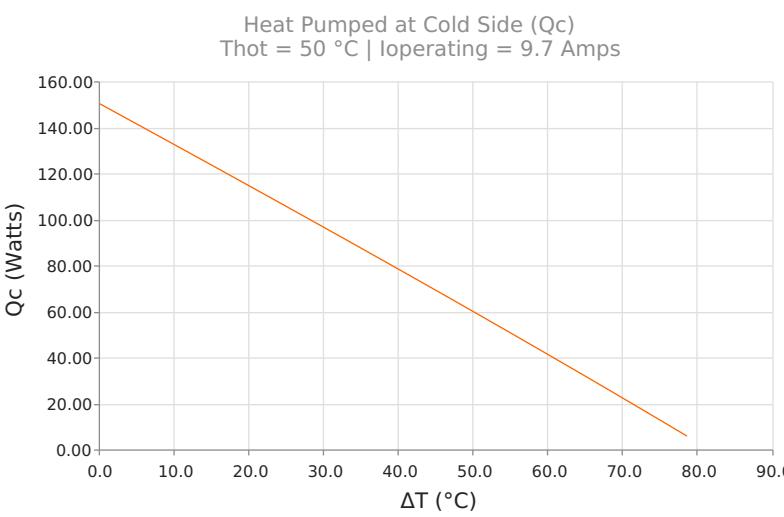
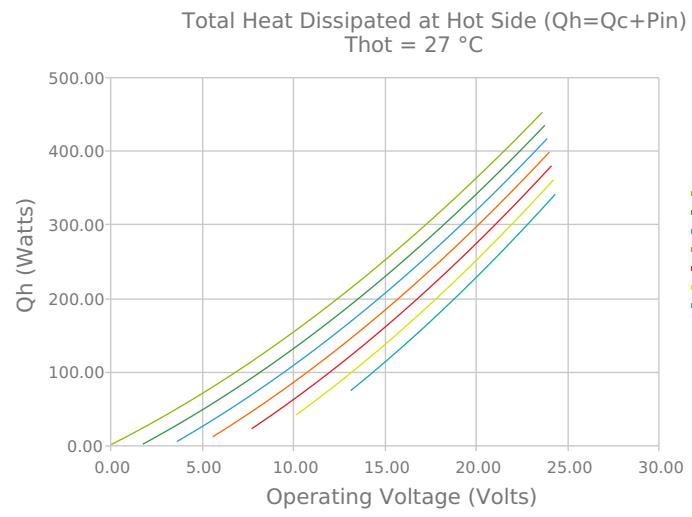
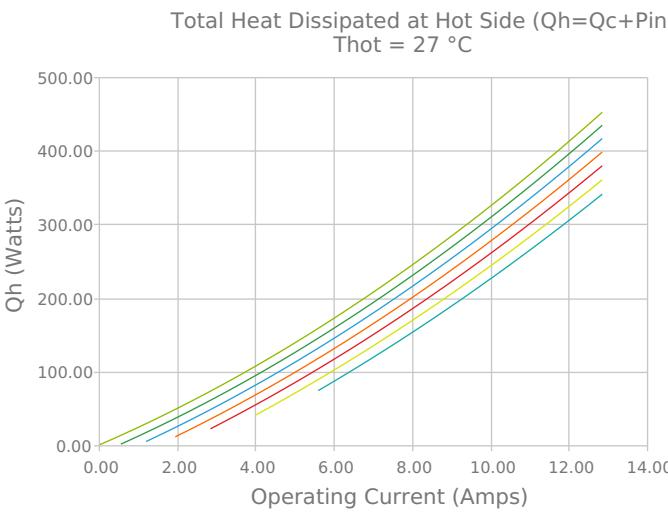
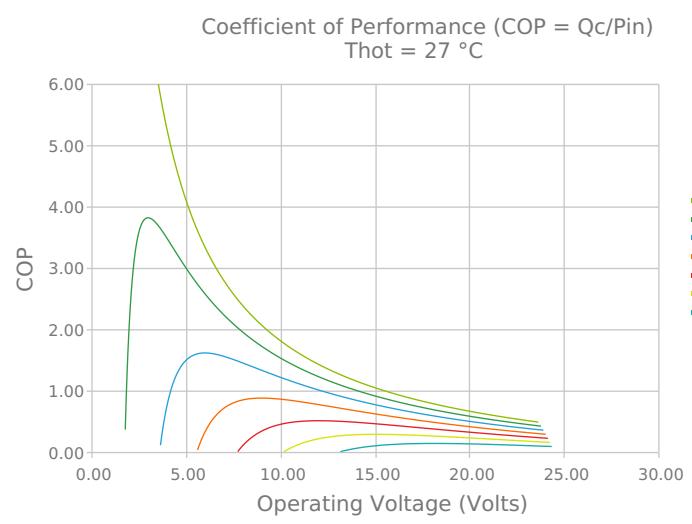
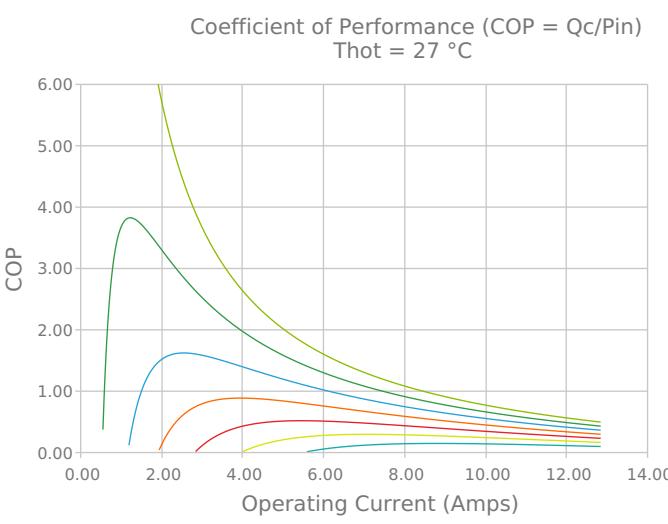
Electrical and Thermal Performance

For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the AMBIENT 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.



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





Specifications

| Hot Side Temperature | 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) | | |

Finishing Options

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|---|--|----------|-----------|---------------------|
| TA | 3.350 \pm 0.025 mm 0.132 \pm 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

Max operating temperature: 120°C
Do not exceed I_{max} or V_{max} when operating module
Reference assembly guidelines for recommended installation
Solder tinning also available on metallized ceramics

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