

OptoTEC™ OTX Series Thermoelectric Cooler

The OTX12-66-F0-1211-TB-RT-W2.25 is a high-performance, miniature thermoelectric cooler. The OTX12-66-F0-1211-TB-RT-W2.25 is primarily used in applications to stabilize the temperature of sensitive optical components in the telecom and photonics industries. It has a maximum Q_c of 5.5 Watts when $\Delta T = 0$ and a maximum ΔT of 72.9 °C at $Q_c = 0$.

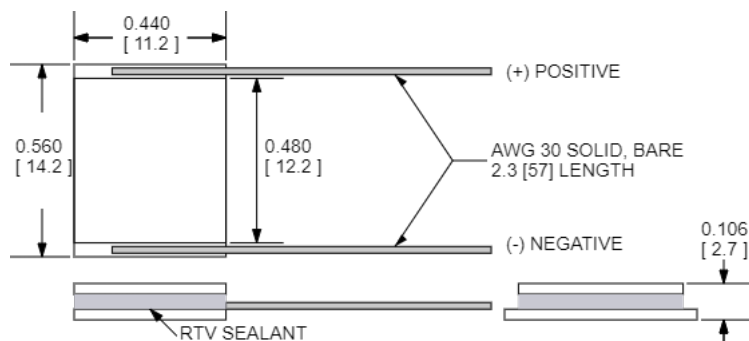


Features

- Miniature footprint
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- RoHS-compliant

Applications

- Laser Diodes
- Optical Transceivers
- Lidar Sensors
- Infrared Range (IR) Sensors
- CMOS Sensors
- Autonomous Systems
- Machine Vision
- Security Cameras



CERAMIC MATERIAL: Al_2O_3

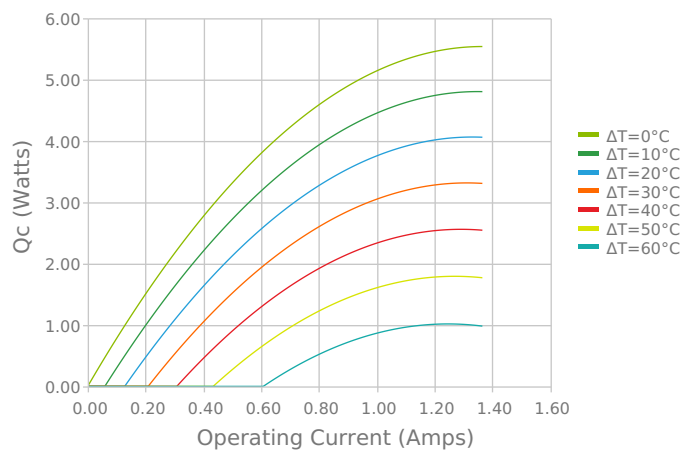
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

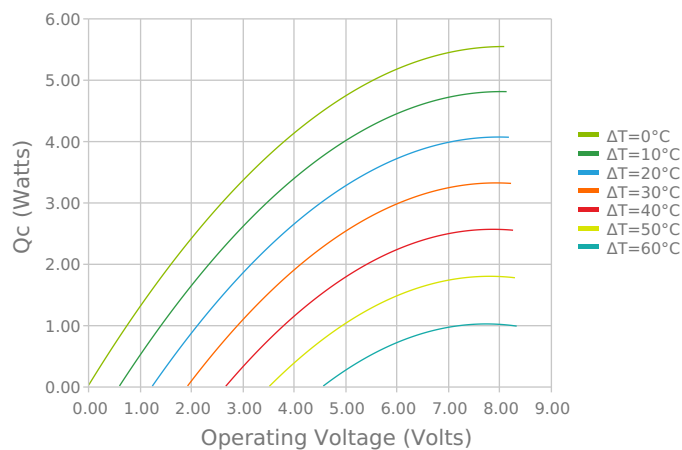
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

ELECTRICAL AND THERMAL PERFORMANCE

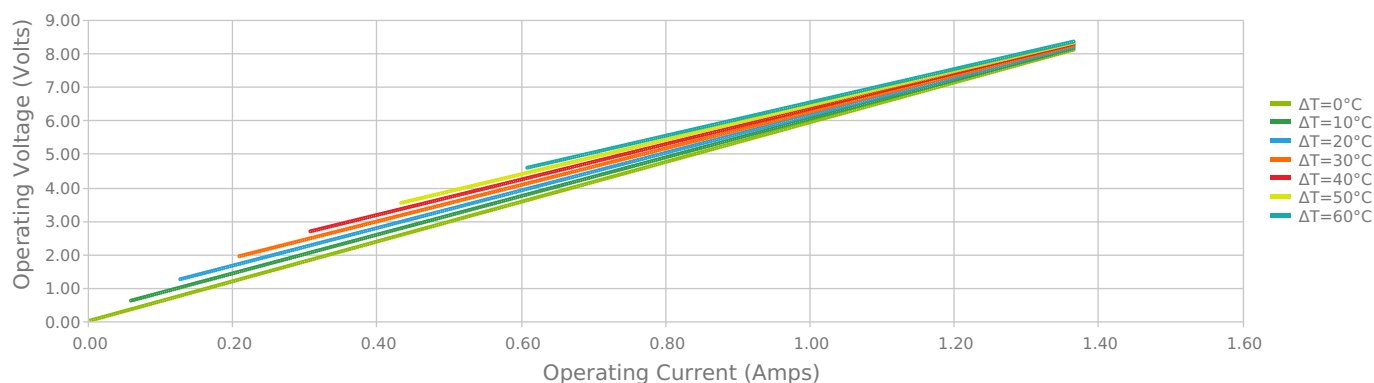
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



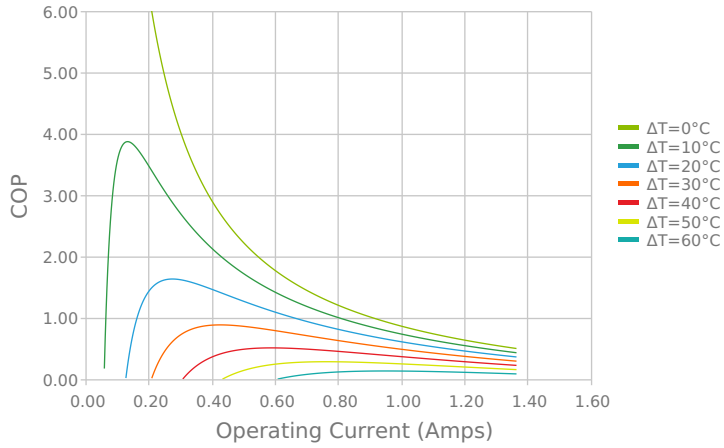
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



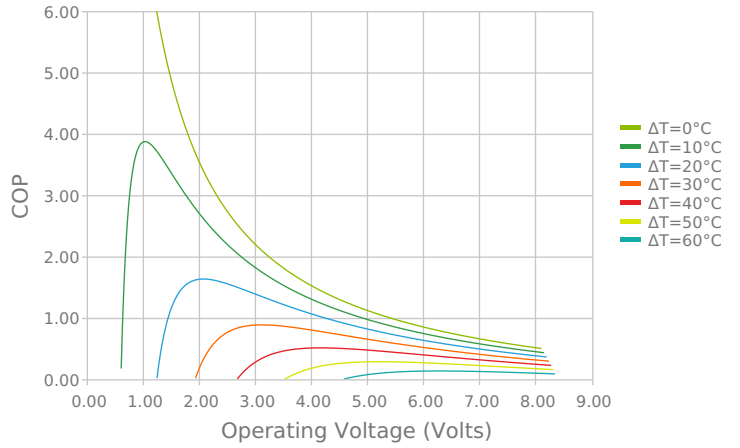
Current vs Voltage (I vs V)
 $T_{hot} = 27\text{ °C}$



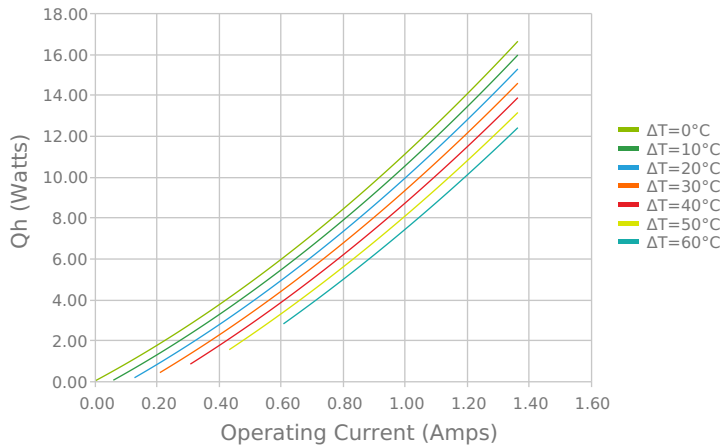
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27^\circ\text{C}$



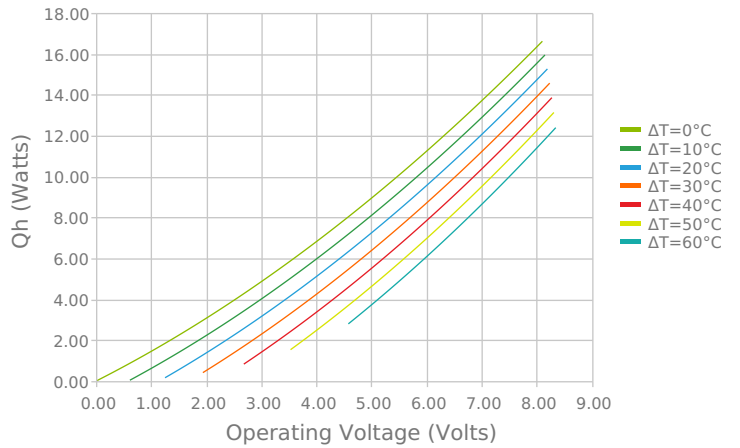
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27^\circ\text{C}$



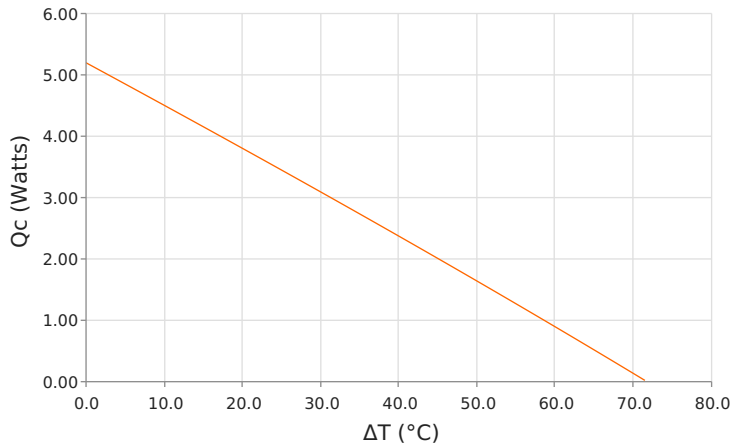
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27^\circ\text{C}$



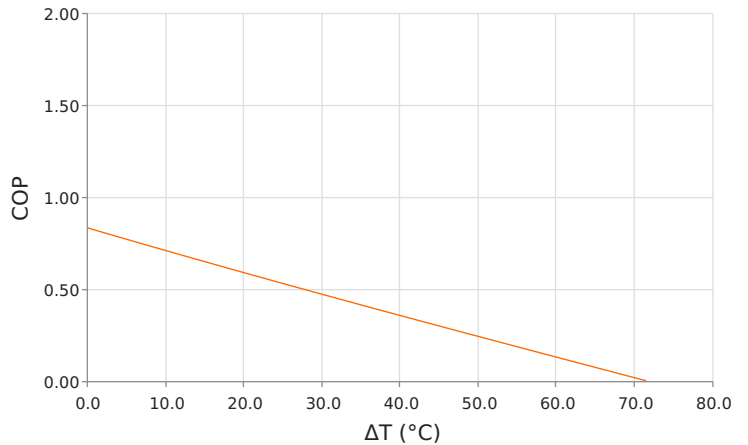
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27^\circ\text{C}$



Heat Pumped at Cold Side (Q_c)
 $T_{hot} = 27^\circ\text{C}$ | Current = 1.0 Amps



Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27^\circ\text{C}$ | Current = 1.0 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 ($\Delta T = 0$)	5.5 Watts	6.0 Watts	6.4 Watts
ΔT_{max} ($Q_c = 0$)	72.9°C	81.8°C	92.1°C
I _{max} (I @ ΔT_{max})	1.2 Amps	1.2 Amps	1.2 Amps
V _{max} (V @ ΔT_{max})	7.7 Volts	8.5 Volts	9.6 Volts
Module Resistance	5.93 Ohms	6.68 Ohms	7.64 Ohms
Max Operating Temperature	120 °C		
Weight	2.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TB	2.692 ±0.013 mm 0.106 ± 0.0005 in	0.013 mm / 0.013 mm 0.0005 in / 0.0005 in	Lapped	Lapped	50.8 mm 2.00 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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