

OptoTEC™ OTX Series Thermoelectric Cooler

The OTX12-66-F0-1211-GG-W2.25 is a high-performance, miniature thermoelectric cooler. The OTX12-66-F0-1211-GG-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 $Q_c = 0$.

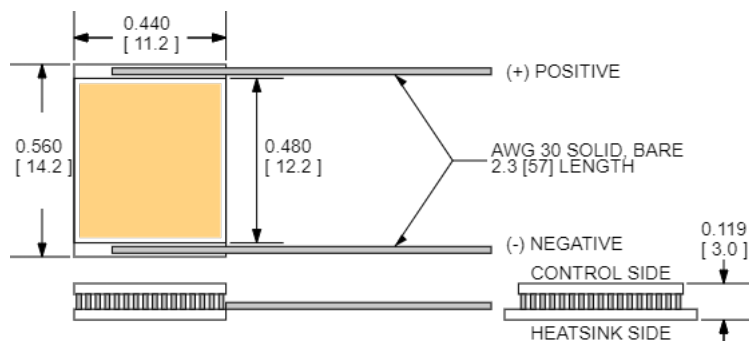


Features

- 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

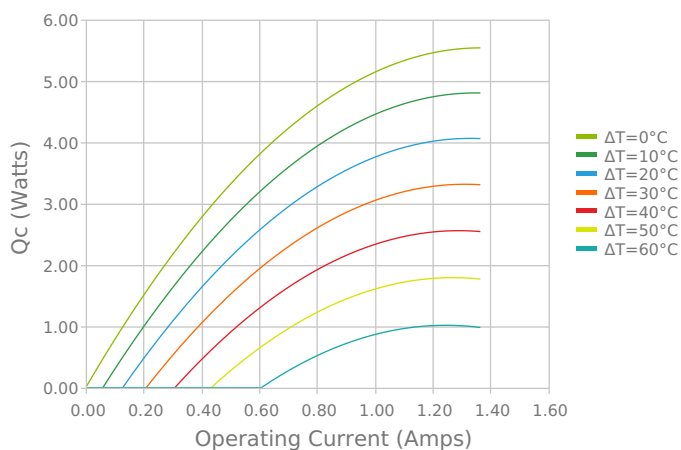
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

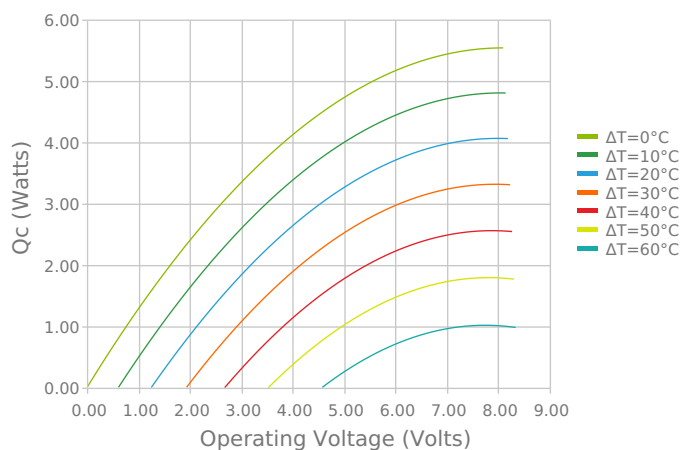
ELECTRICAL AND THERMAL PERFORMANCE

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.

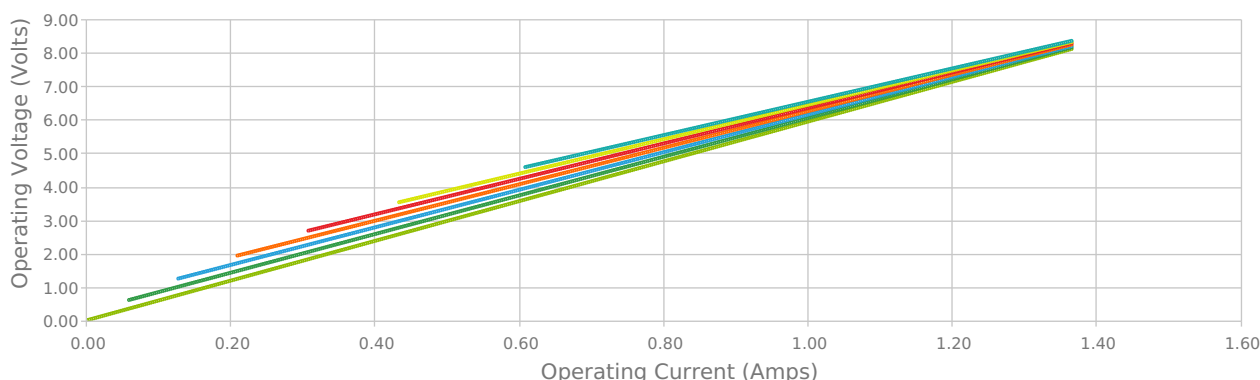
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



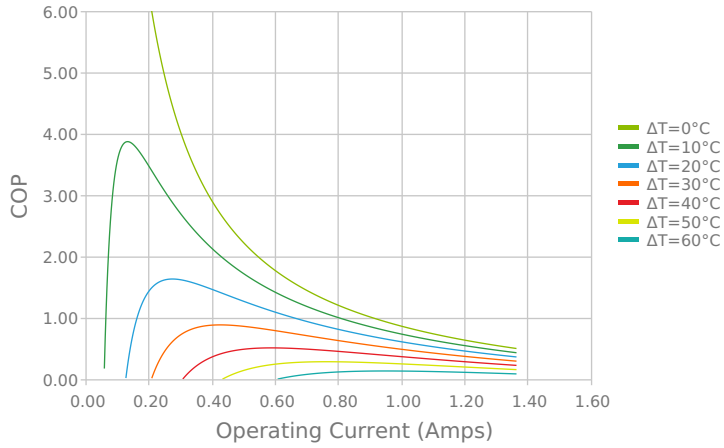
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



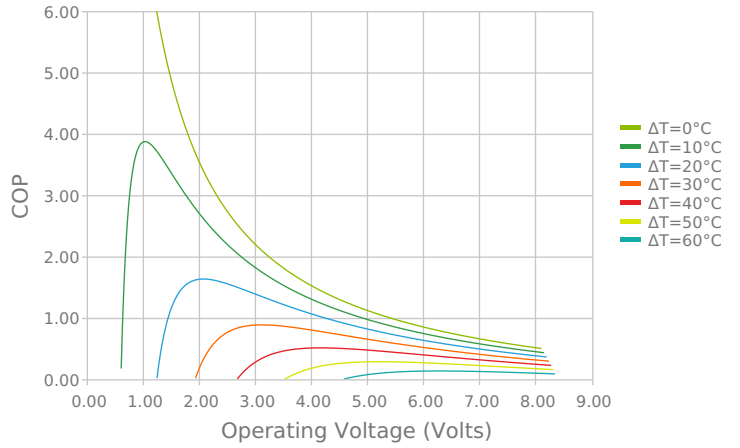
Current vs Voltage (I vs V)
 $T_{hot} = 27\text{ °C}$



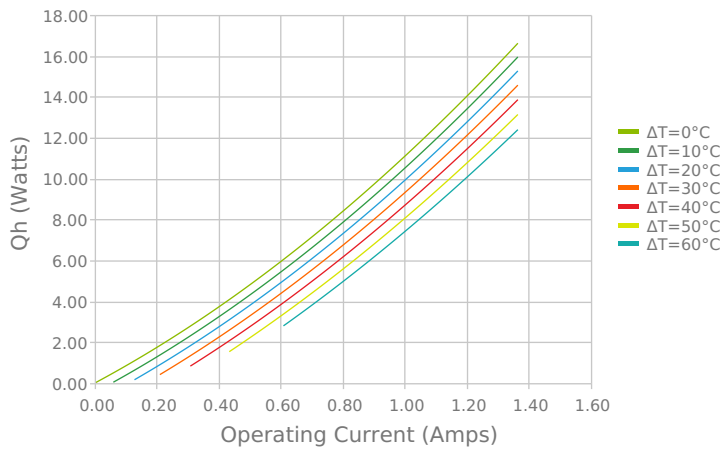
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



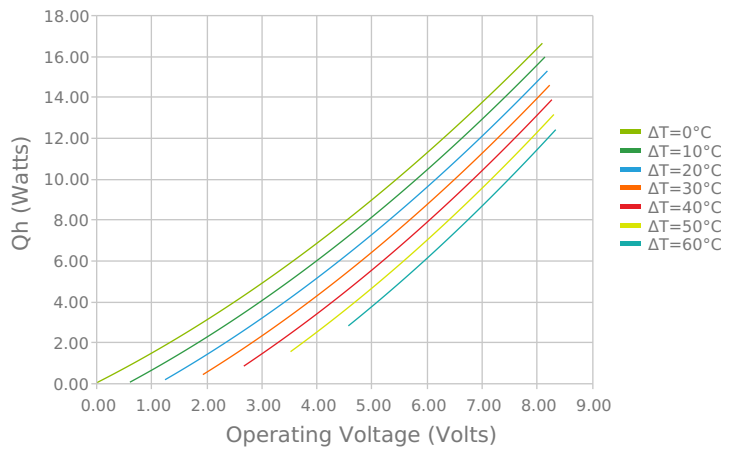
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



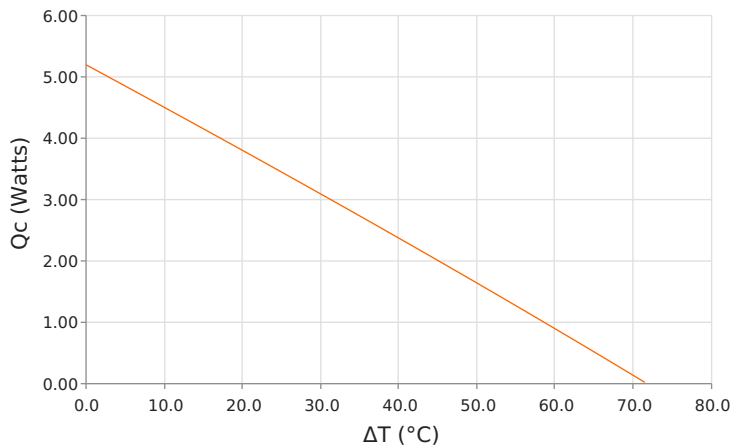
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



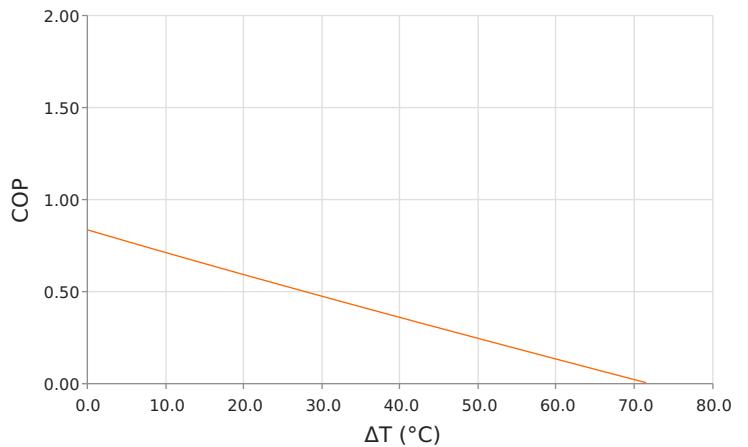
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



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



Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$ | 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 |
|--------|--------------------------------------|------------------------|-----------|-----------|--------------------|
| GG | 3.022 ±0.127 mm 0.119 ± 0.0050 in | N/A / N/A | Au Plated | Au Plated | 50.8 mm 2.00 in |

SEALING OPTIONS

| Suffix | Sealant | Color | Temp Range | Description |
|--------|---------|-------|------------|----------------------|
| | None | | | No sealing specified |

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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