

OptoTEC™ OT Series Thermoelectric Cooler

Note: This product has reached end of production. Please use the recommended replacement.

The recommended replacement is:

MFG Part Number: 387006903

Description: OTX20-12-F0-0406-11-W2.25

The OT20-12-F0-0406-11-W2.25 is a miniature thermoelectric cooler. The OT20-12-F0-0406-11-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 1.5 Watts when $\Delta T = 0$ and a maximum ΔT of 68 °C at $Q_c = 0$.

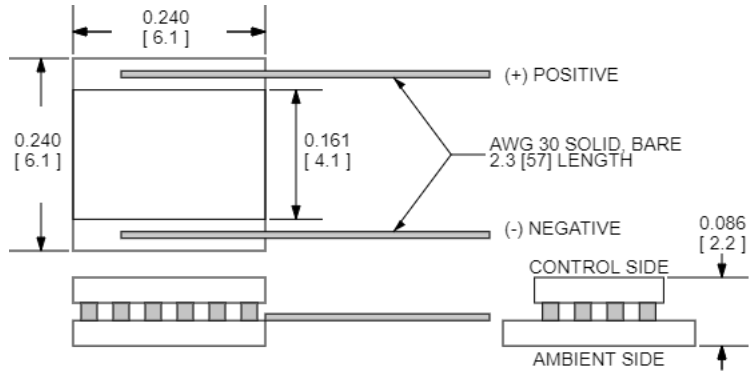


Features

- Miniature geometric sizes
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- DC operation
- RoHS-compliant

Applications

- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems



CERAMIC MATERIAL: Al_2O_3

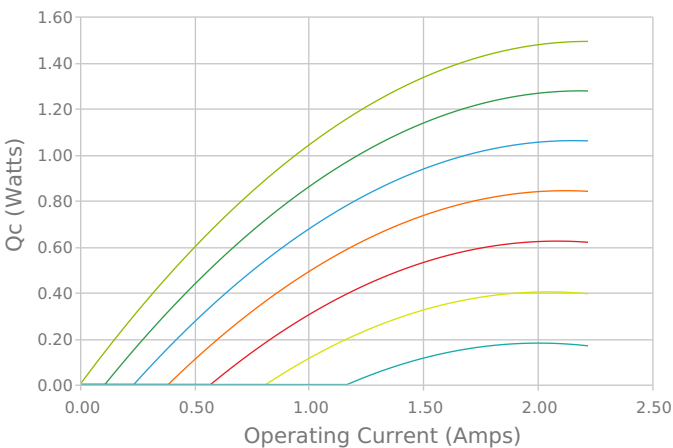
SOLDER CONSTRUCTION: 138°C, BiSn

INCHES [MM]

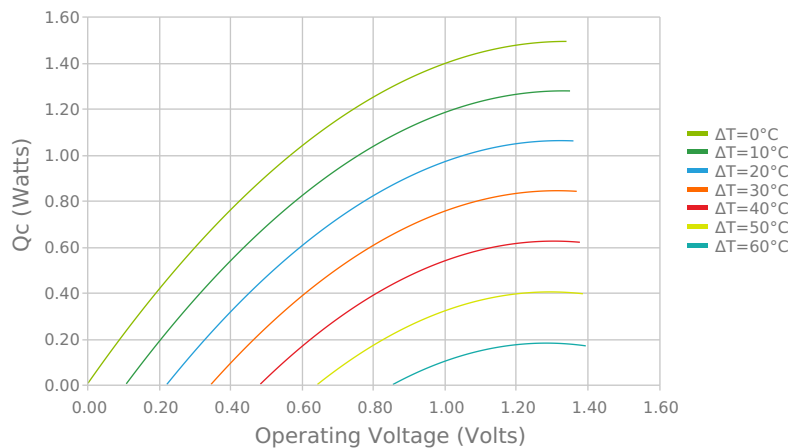
ELECTRICAL AND THERMAL PERFORMANCE

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

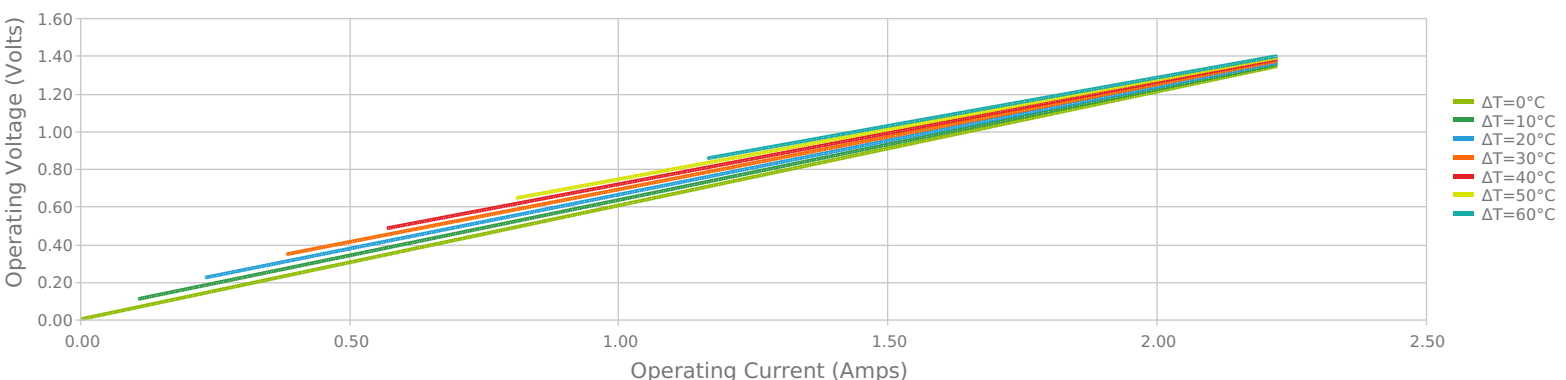
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



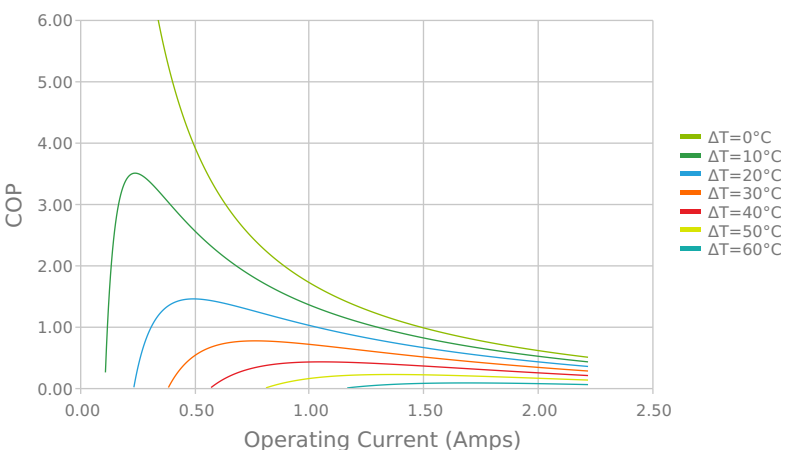
Heat Pumped at Cold Side
 $T_{hot} = 27\text{ °C}$



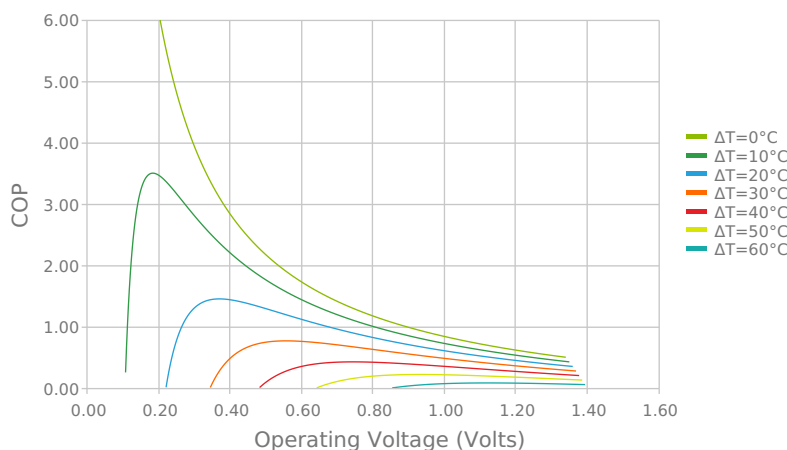
Current vs Voltage (I vs V)
 $T_{hot} = 27\text{ °C}$



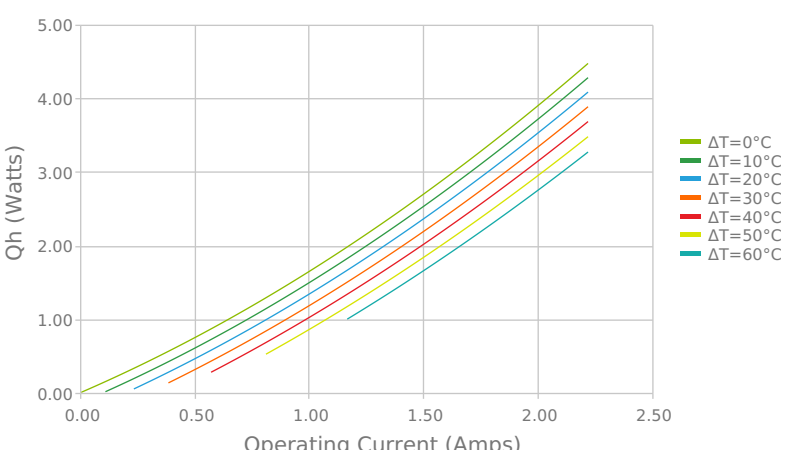
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



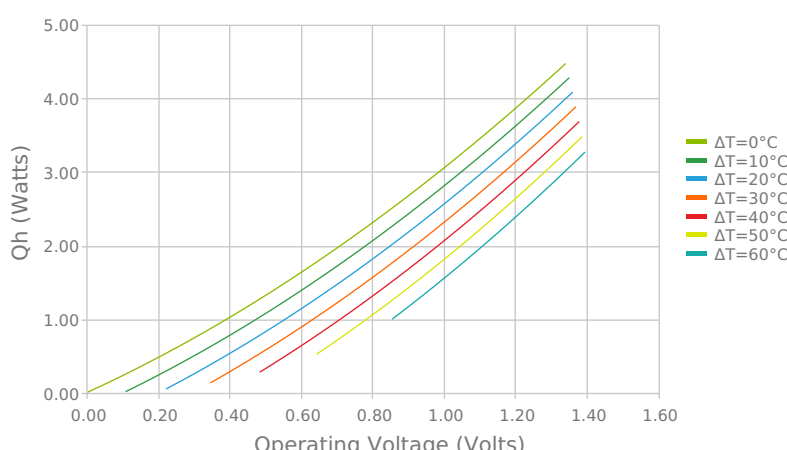
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



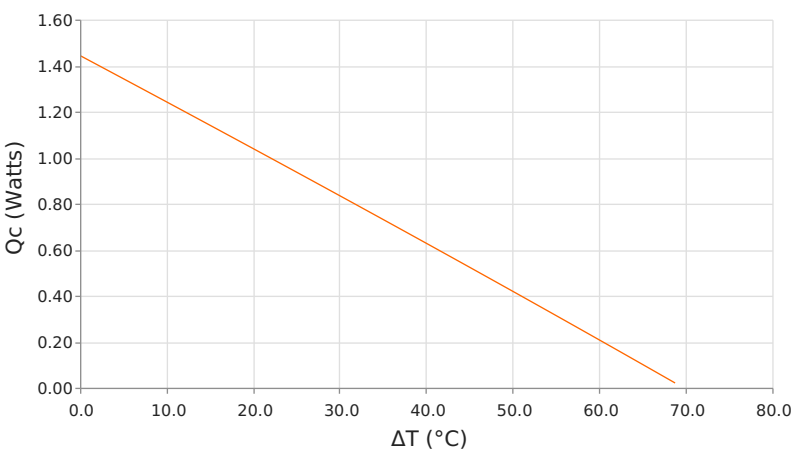
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



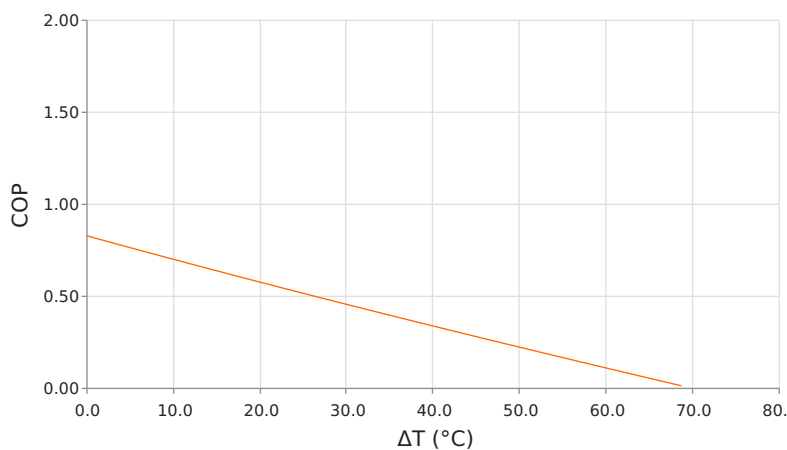
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



Heat Pumped at Cold Side (Q_c)
 $T_{hot} = 35\text{ }^{\circ}\text{C}$ | operating = 1.7 Amps



Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 35\text{ }^{\circ}\text{C}$ | operating = 1.7 Amps



SPECIFICATIONS

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax (ΔT = 0)	1.5 Watts	1.5 Watts	1.6 Watts
ΔTmax (Qc = 0)	68.0°C	70.9°C	76.0°C
Imax (I @ ΔTmax)	2.0 Amps	2.0 Amps	1.9 Amps
Vmax (V @ ΔTmax)	1.3 Volts	1.3 Volts	1.4 Volts
Module Resistance	0.60 Ohms	0.63 Ohms	0.68 Ohms
Max Operating Temperature	80 °C		
Weight	1.0 gram(s)		

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
11	2.184 ±0.127 mm 0.086 ± 0.0050 in	0.051 mm / 0.051 mm 0.002 in / 0.002 in	Lapped	Lapped	50.8 mm 2.00 in

SEALING OPTIONS

Suffix	Sealant	Color	Temp Range	Description
	None			No sealing specified

NOTES

- 1. Max operating temperature: 80°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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