

## 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: 387006800

Description: OTX12-12-F0-0406-11-W2.25

The OT12-12-F0-0406-11-W2.25 is a miniature thermoelectric cooler. The OT12-12-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 0.9 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 68 °C at  $Q_c = 0$ .

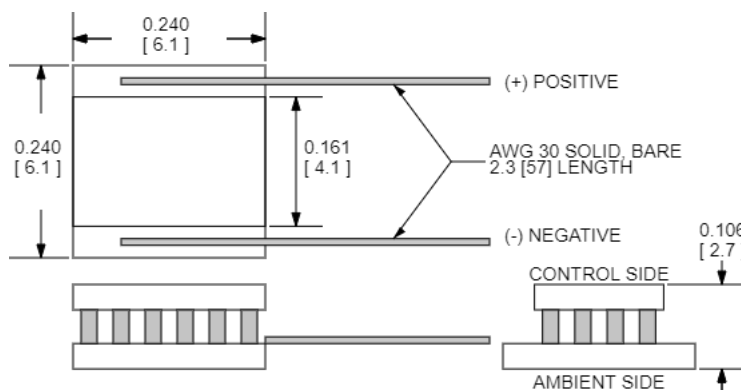


## Features

- 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



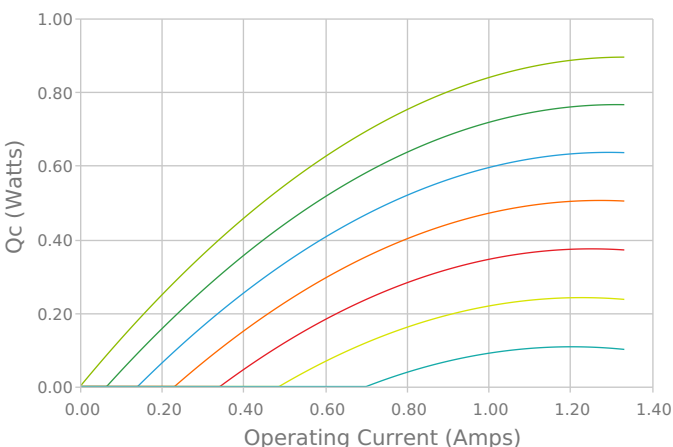
CERAMIC MATERIAL:  $Al_2O_3$   
SOLDER CONSTRUCTION: 138°C, BiSn

INCHES [MM]

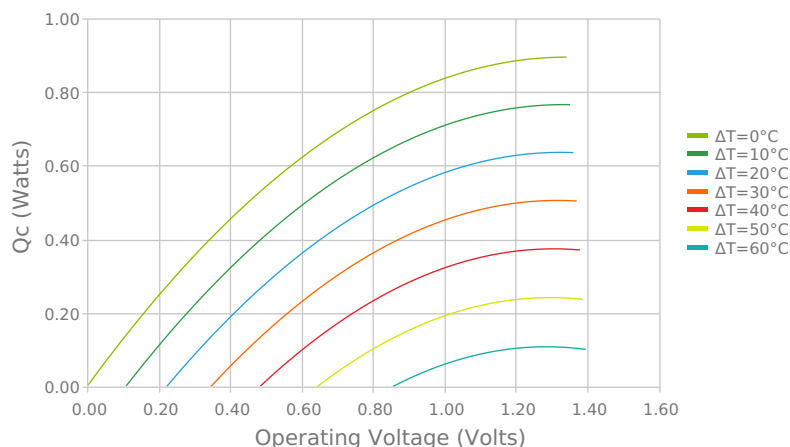
## ELECTRICAL AND THERMAL PERFORMANCE

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.

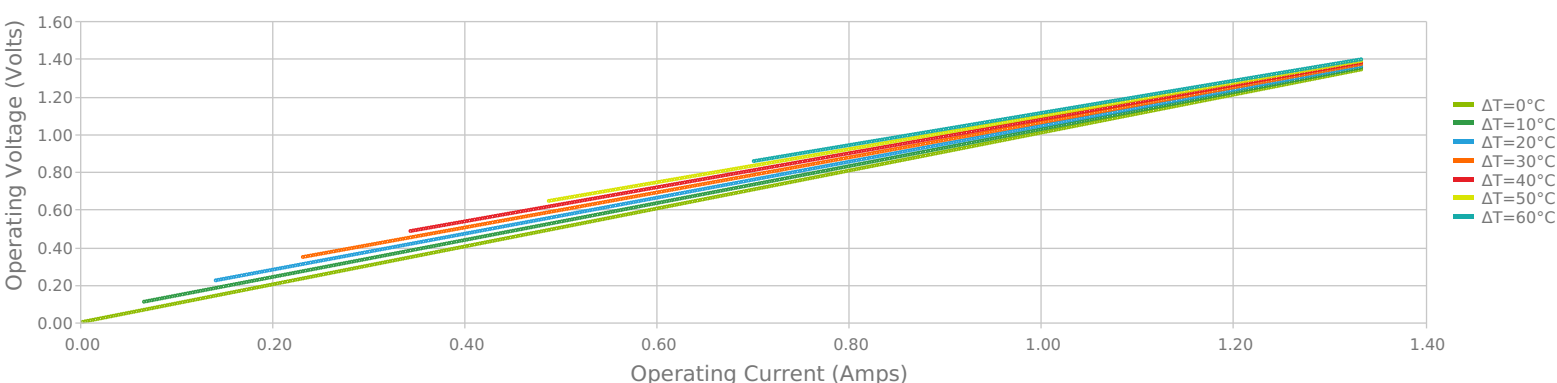
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



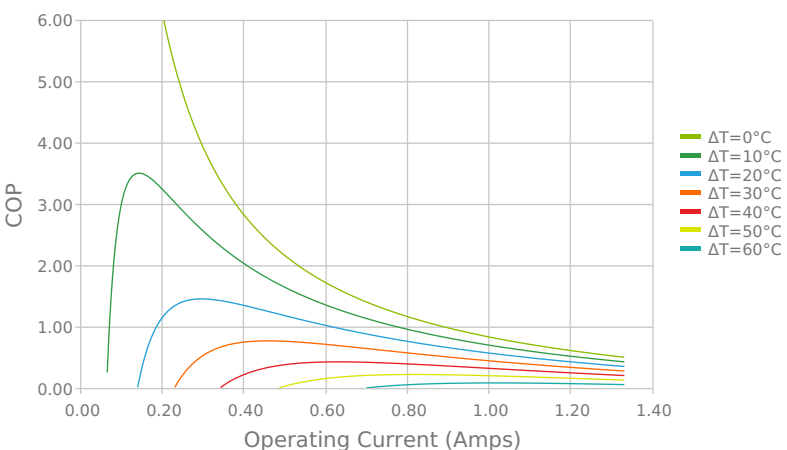
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



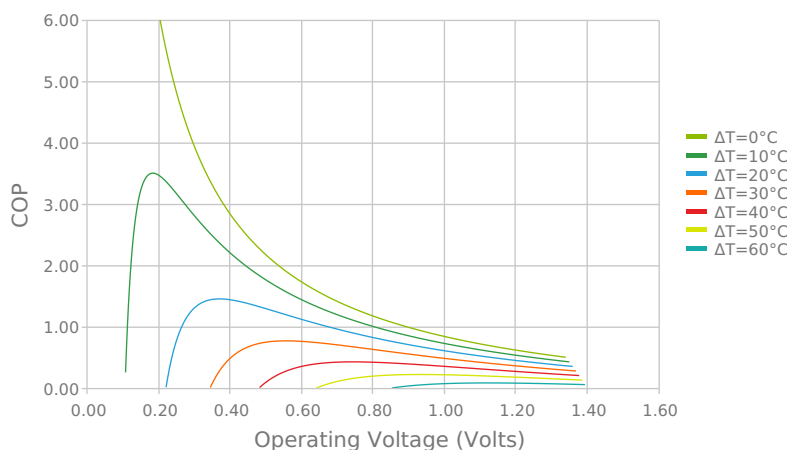
Current vs Voltage (I vs V)  
 $T_{hot} = 27\text{ °C}$



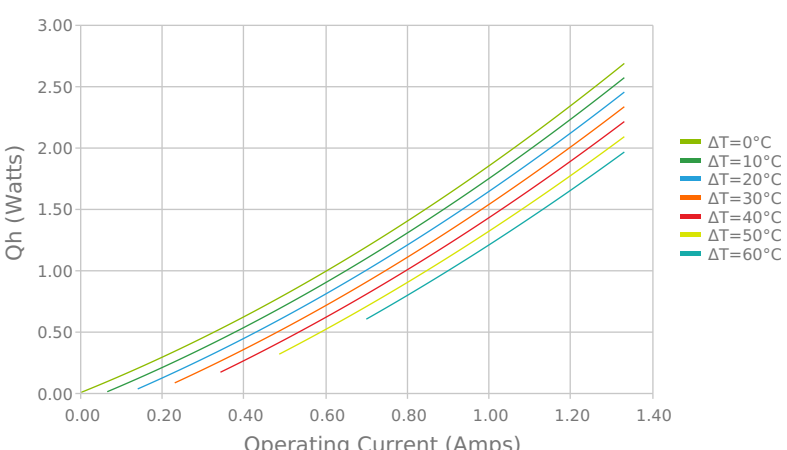
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



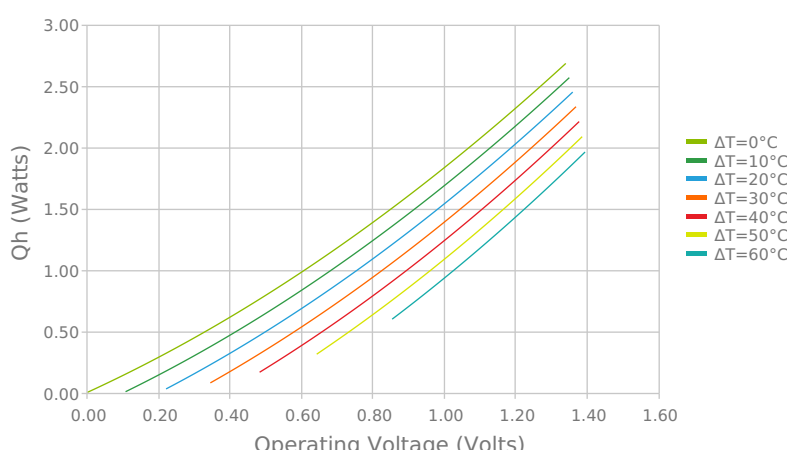
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



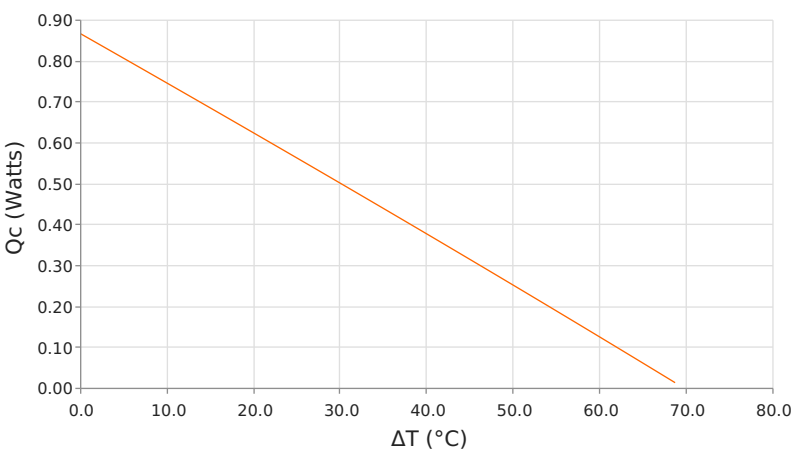
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



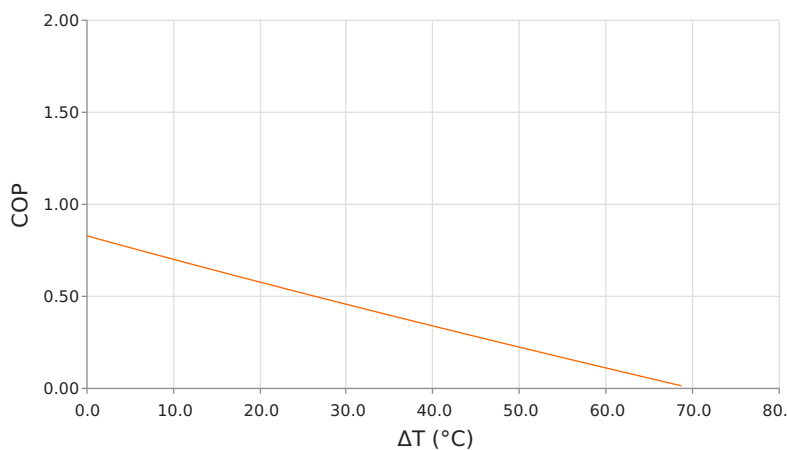
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 35\text{ }^{\circ}\text{C}$  |  $I_{operating} = 1\text{ Amps}$



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 35\text{ }^{\circ}\text{C}$  |  $I_{operating} = 1\text{ Amps}$



SPECIFICATIONS

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax (ΔT = 0)	0.9 Watts	0.9 Watts	1.0 Watts
ΔTmax (Qc = 0)	68.0°C	70.9°C	76.0°C
Imax (I @ ΔTmax)	1.2 Amps	1.2 Amps	1.2 Amps
Vmax (V @ ΔTmax)	1.3 Volts	1.3 Volts	1.4 Volts
Module Resistance	1.01 Ohms	1.05 Ohms	1.13 Ohms
Max Operating Temperature	80 °C		
Weight	1.0 gram(s)		

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
11	2.692 ±0.127 mm 0.106 ± 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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