

#### HiTemp ET Series Thermoelectric Cooler

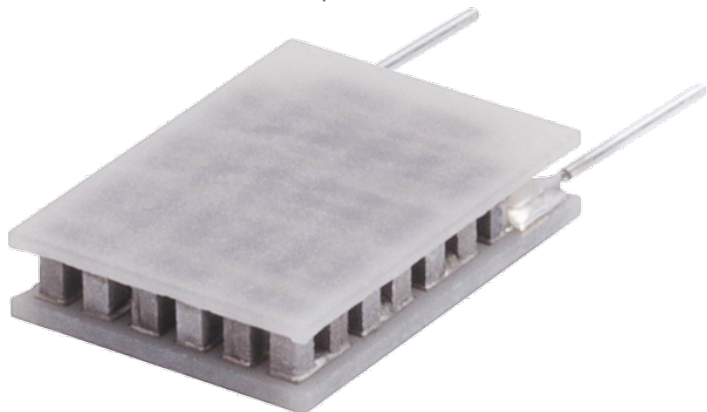
**Note: This product has reached end of production. Please use the recommended replacement.**

The recommended replacement is:

MFG Part Number: 387009454

Description: OTX19-23-F1N-0608-GG-W2.25

The ET19-23-F1N-0608-GG-W2.25 high temperature thermoelectric cooler uses Laird Thermal Systems' enhanced Thermoelectric Module construction preventing performance degrading diffusion, which is common in standard grade thermoelectric coolers operating in high temperature environments exceeding 80 °C. It has a maximum Qc of 3.1 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 77.9 °C at Qc = 0.

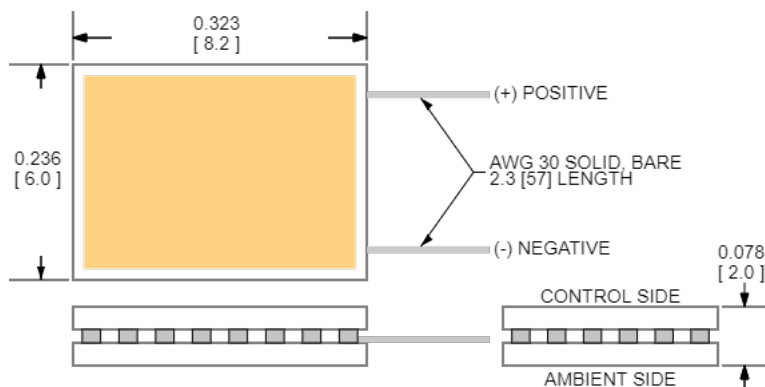


#### Features

- High-temperature operation
- Reliable solid-state
- No sound or vibration
- Environmentally-friendly
- RoHS-compliant

#### Applications

- Peltier Cooling for Refrigerated Centrifuges
- Peltier Cooling for Machine Vision
- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems
- Peltier Cooling for Digital Light Processors



CERAMIC MATERIAL: AlN

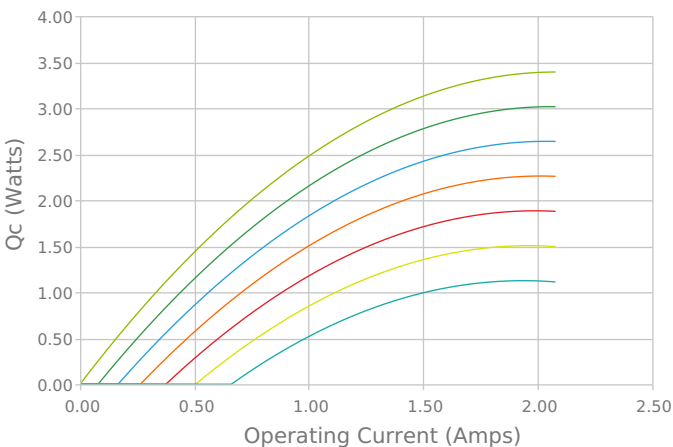
SOLDER CONSTRUCTION: 232°C, SbSn

INCHES [MM]

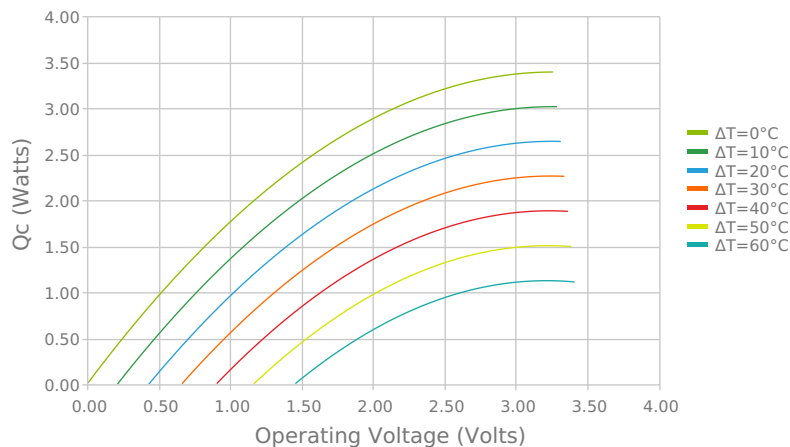
## ELECTRICAL AND THERMAL PERFORMANCE

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

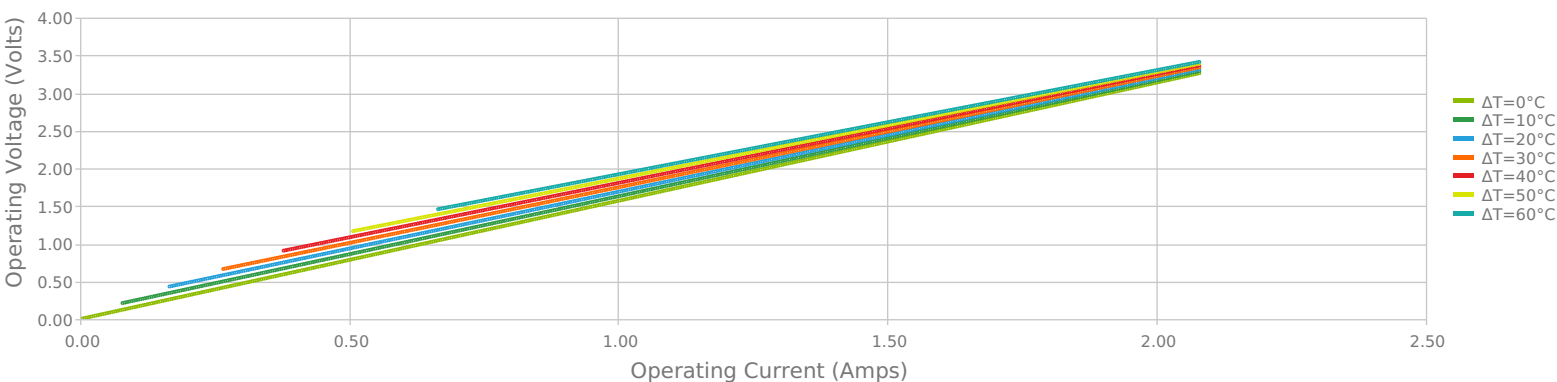
Heat Pumped at Cold Side  
Thot = 85 °C



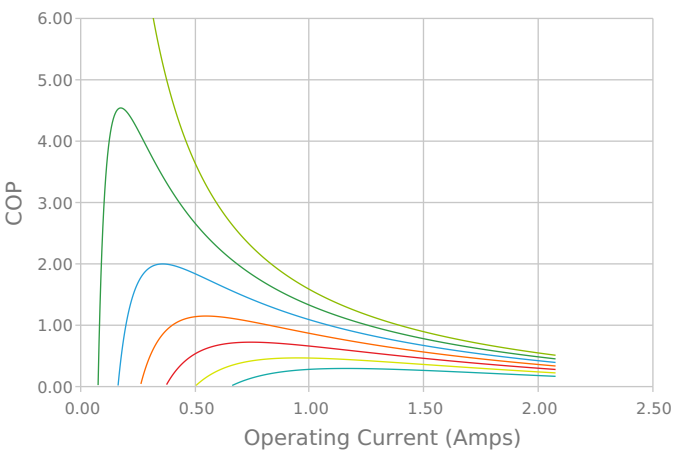
Heat Pumped at Cold Side  
Thot = 85 °C



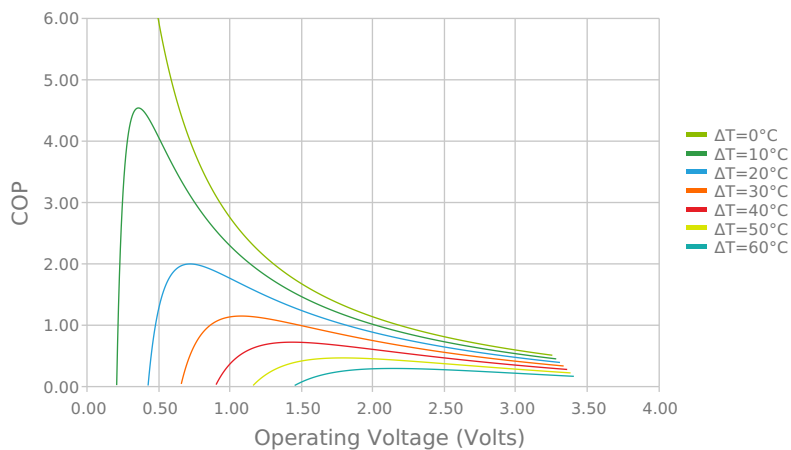
Current vs Voltage (I vs V)  
Thot = 85 °C



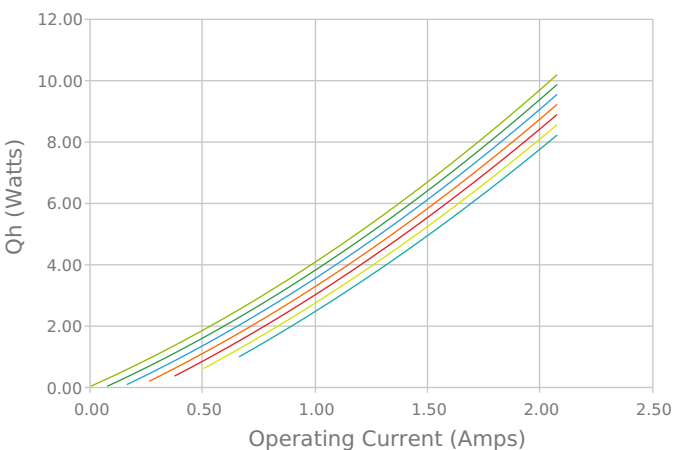
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$



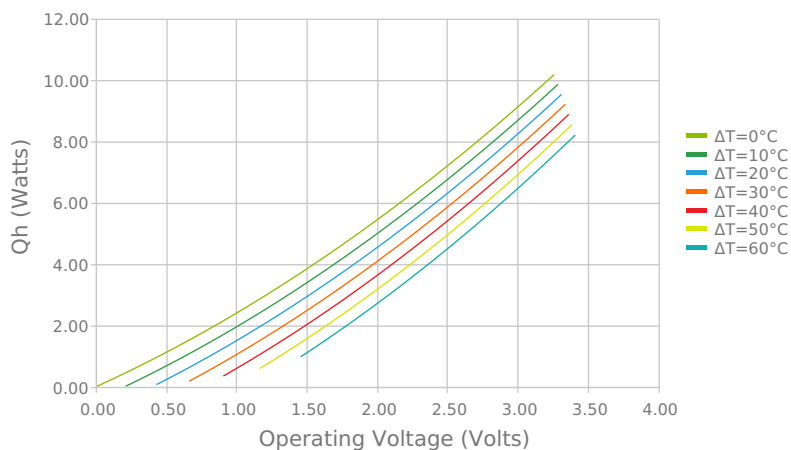
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$



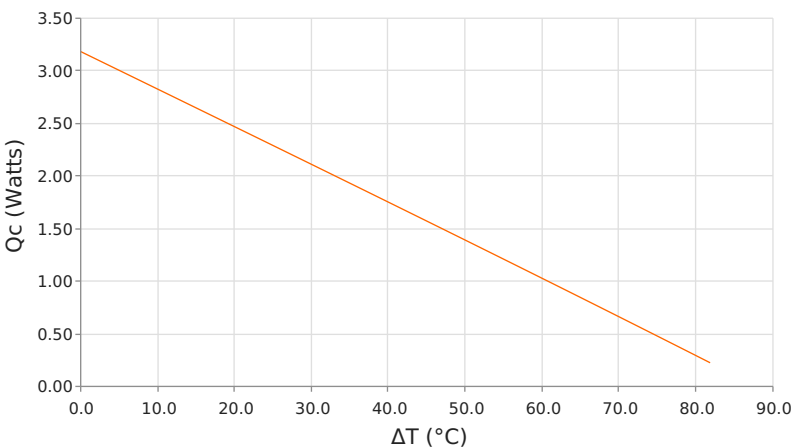
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$



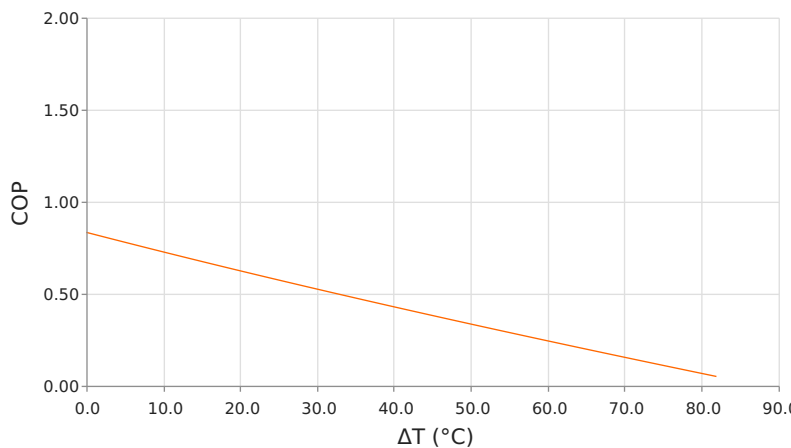
Total Heat Dissipated at Hot Side ( $Q_h = Q_c + P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$



Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 85^\circ\text{C}$  | operating = 1.6 Amps



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 85^\circ\text{C}$  | operating = 1.6 Amps



SPECIFICATIONS

Hot Side Temperature	50.0 °C	85.0 °C	110.0 °C
Qcmax ( $\Delta T = 0$ )	3.1 Watts	3.4 Watts	3.5 Watts
$\Delta T_{max}$ ( $Q_c = 0$ )	77.9°C	89.3°C	96.2°C
I <sub>max</sub> (I @ $\Delta T_{max}$ )	1.9 Amps	1.8 Amps	1.8 Amps
V <sub>max</sub> (V @ $\Delta T_{max}$ )	2.8 Volts	3.2 Volts	3.5 Volts
Module Resistance	1.35 Ohms	1.57 Ohms	1.72 Ohms
Max Operating Temperature	150 °C		
Weight	1.0 gram(s)		

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
GG	1.981 ±0.127 mm 0.078 ± 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: 150°C
2. Do not exceed I<sub>max</sub> or V<sub>max</sub> when operating module
3. Reference assembly guidelines for recommended installation

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Revision: 00 Date: 06-01-2022

Print Date: 06-24-2024