

HiTemp ET Series Thermoelectric Cooler

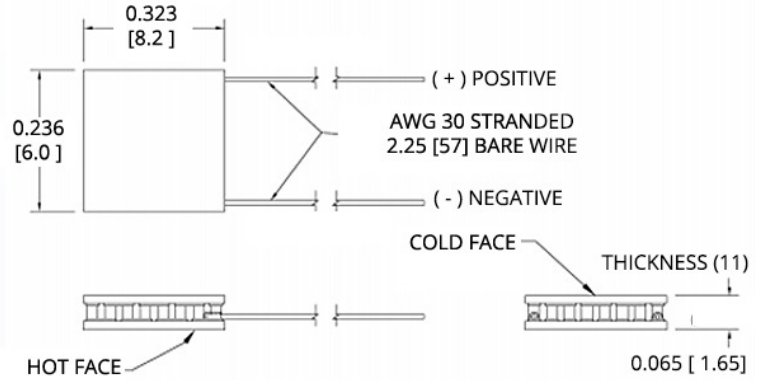
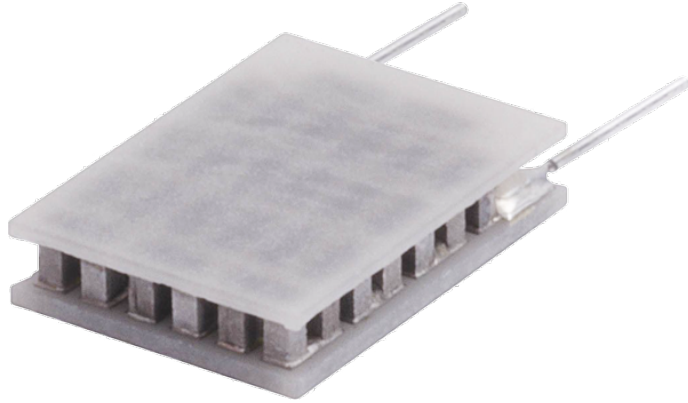
The ET19-23-F1N-0608-11-W2.25 high temperature Thermoelectric Cooler uses Laird's enhanced Thermoelectric Module construction preventing performance degrading copper diffusion, which is common in standard grade TEMs operating in high temperature environments exceeding 80 °C. It has a maximum Qc of 3.1 Watts when ΔT = 0 and a maximum ΔT 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

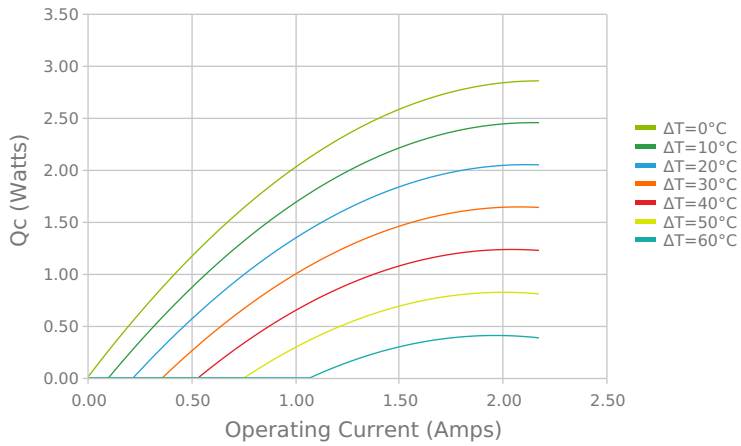


Ceramic Material: Aluminum Nitride (AlN)
 Solder Construction: 232°C, SbSn

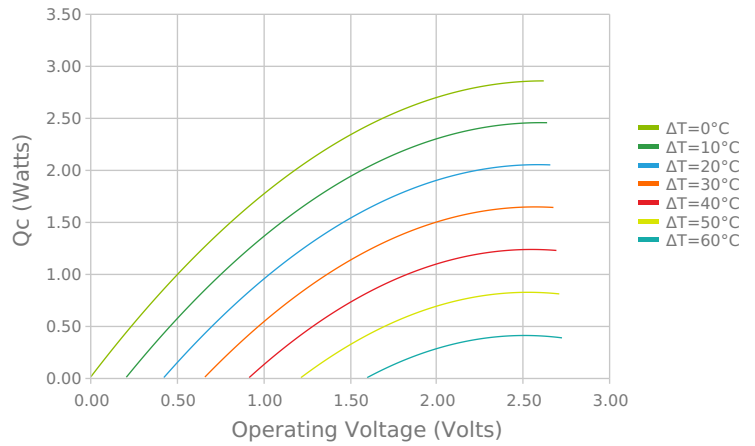
INCHES [MM]

ELECTRICAL AND THERMAL PERFORMANCE

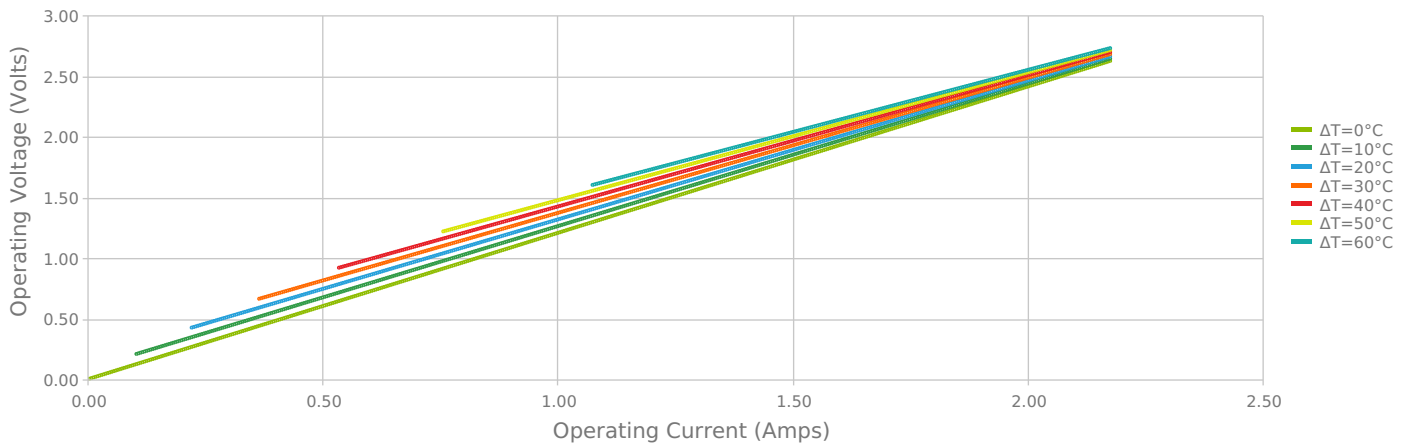
Heat Pumped at Cold Side
 Thot = 85 °C



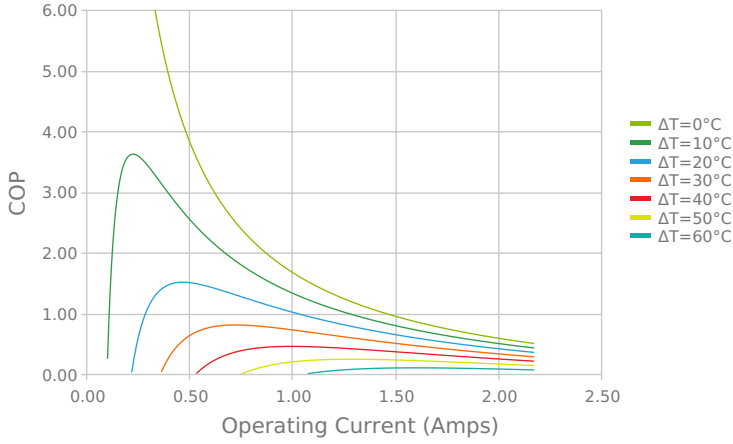
Heat Pumped at Cold Side
 Thot = 85 °C



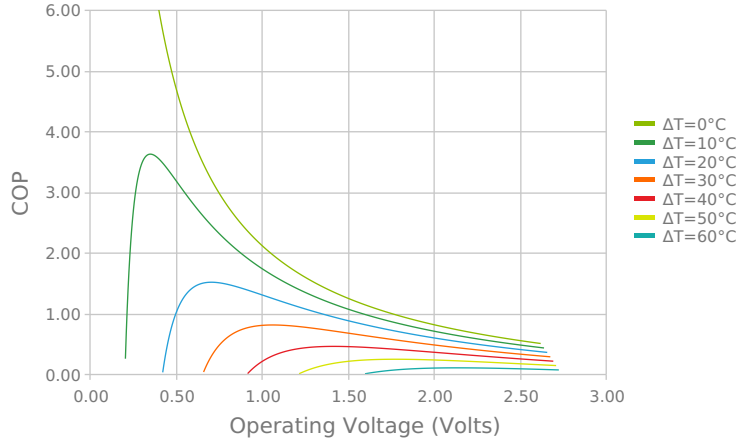
Current vs Voltage (I vs V)
 Thot = 85 °C



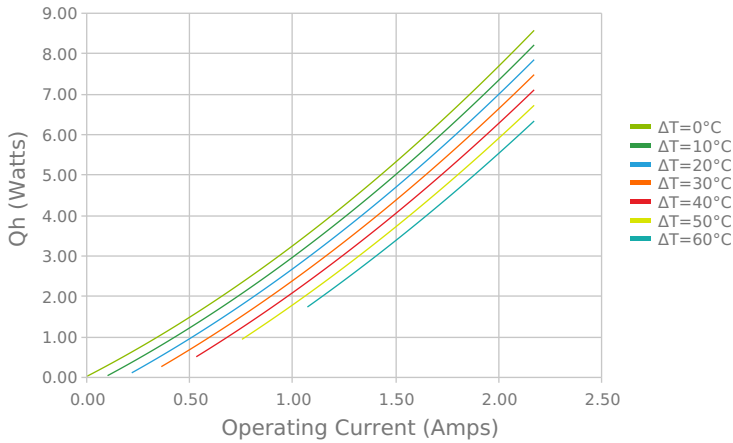
Coefficient of Performance (COP = Qc/Pin)
 Thot = 85 °C



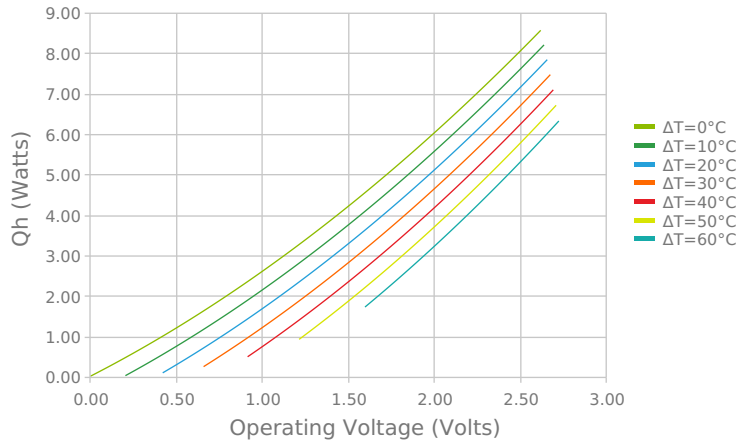
Coefficient of Performance (COP = Qc/Pin)
 Thot = 85 °C



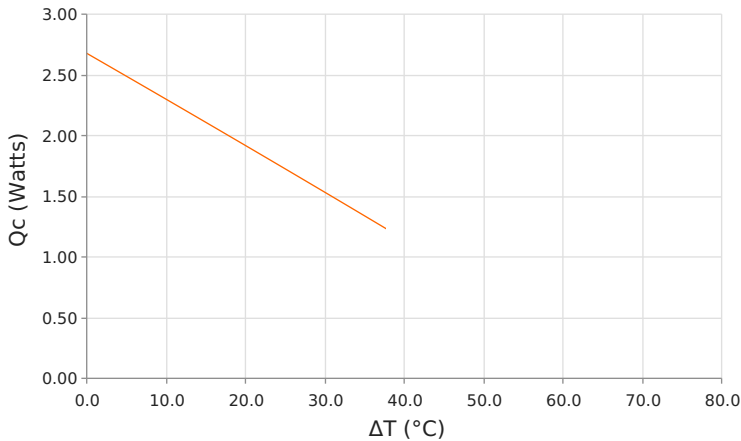
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 85 °C



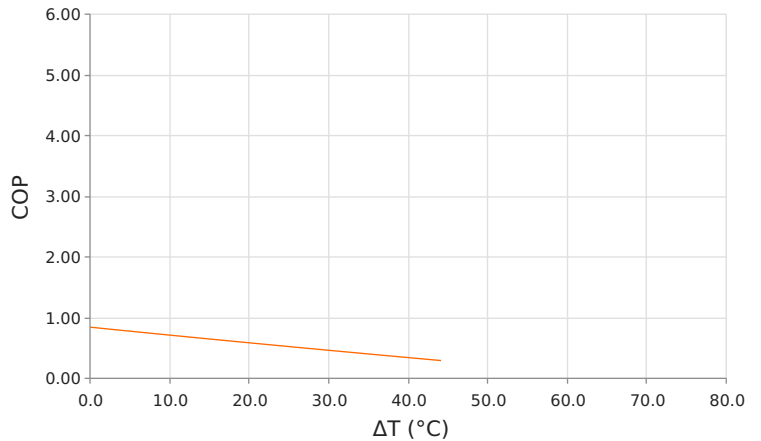
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 85 °C



Heat Pumped at Cold Side (Qc)
 Thot = 85 °C | Current = 1.6 Amps



Coefficient of Performance (COP = Qc/Pin)
 Thot = 85 °C | Current = 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
ΔT_{max} ($Q_c = 0$)	77.9°C	89.3°C	96.2°C
I_{max} (I @ ΔT_{max})	1.9 Amps	1.8 Amps	1.8 Amps
V_{max} (V @ ΔT_{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)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
11	1.651 ± 0.051 mm 0.065 ± 0.002 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: 150°C
2. Do not exceed I_{max} or V_{max} when operating module
3. Reference assembly guidelines for recommended installation

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