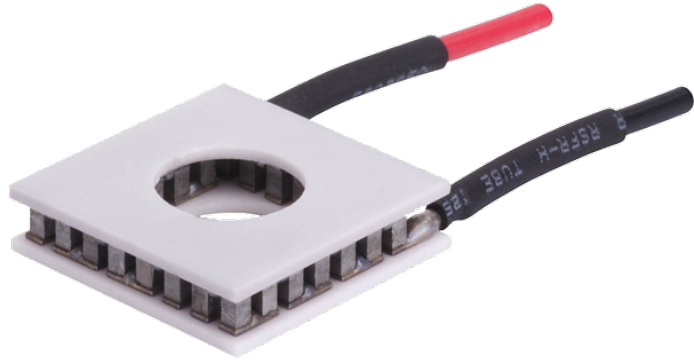


Annular SH Series Thermoelectric Cooler

The SH10-23-06-L1-W4.5 is an annular-style thermoelectric cooler. The hot and cold side ceramics have a circular hole in the center to accommodate light protrusion for optics, mechanical fastening or temperature probe. It has a maximum Qc of 4.6 Watts when $\Delta T = 0$ and a maximum ΔT of 70.5 °C at Qc = 0.

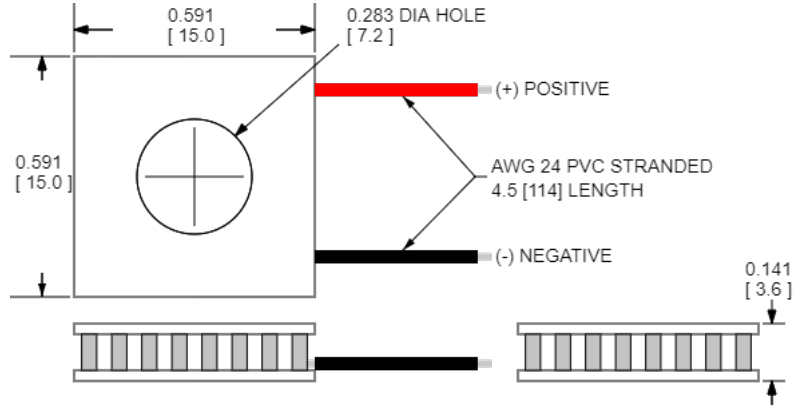


Features

- Center Hole
- Precise Temperature Control
- No sound or vibration
- Reliable solid-state
- DC Operation
- RoHS-compliant

Applications

- Thermoelectric Coolers for Reagent Storage
- Thermoelectric Coolers for Handheld Cosmetic Lasers
- Cooling for Centrifuges
- Heads-Up Displays, Imaging Sensors
- Peltier Cooling for Machine Vision

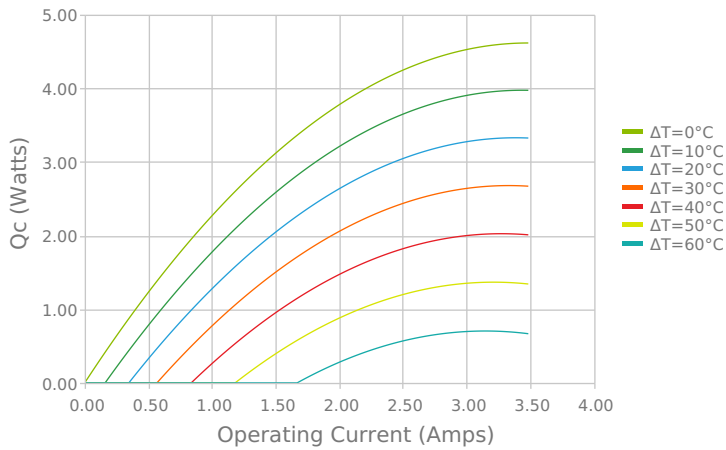


CERAMIC MATERIAL: Al₂O₃
 SOLDER CONSTRUCTION: 138°C, BiSn

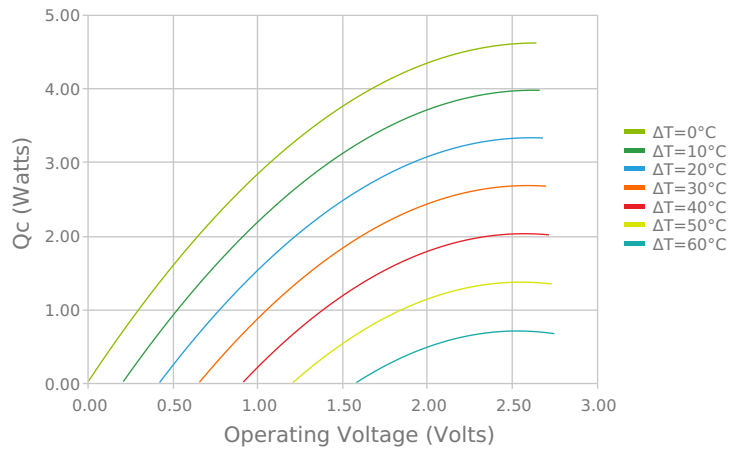
INCHES [MM]

ELECTRICAL AND THERMAL PERFORMANCE

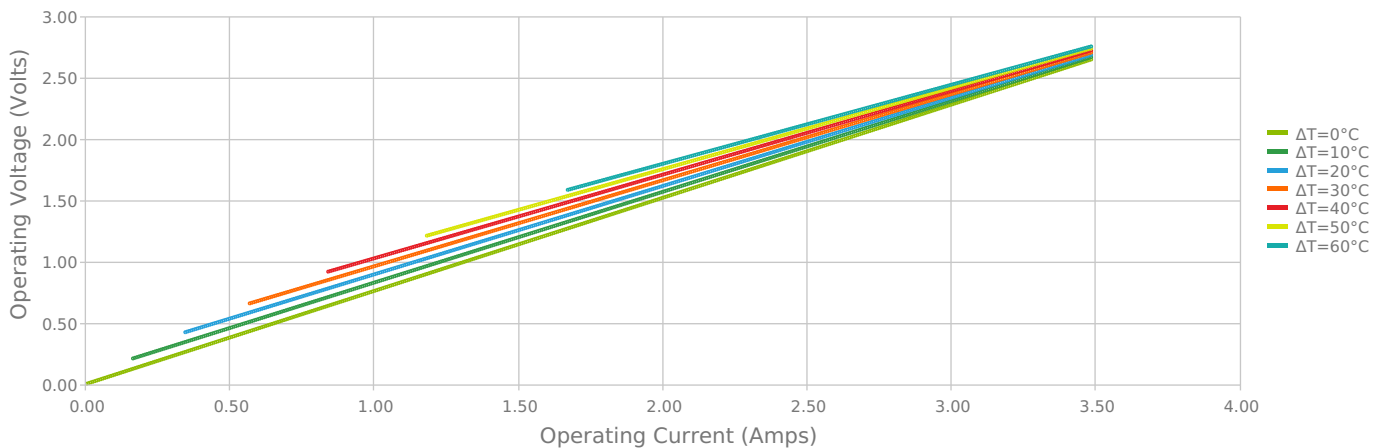
Heat Pumped at Cold Side
 Thot = 27 °C



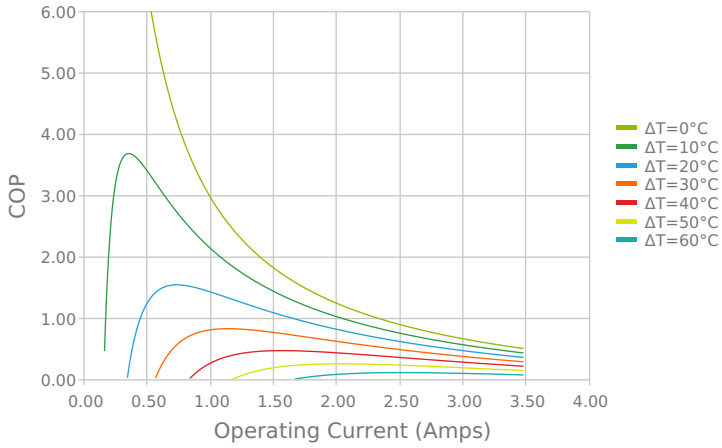
Heat Pumped at Cold Side
 Thot = 27 °C



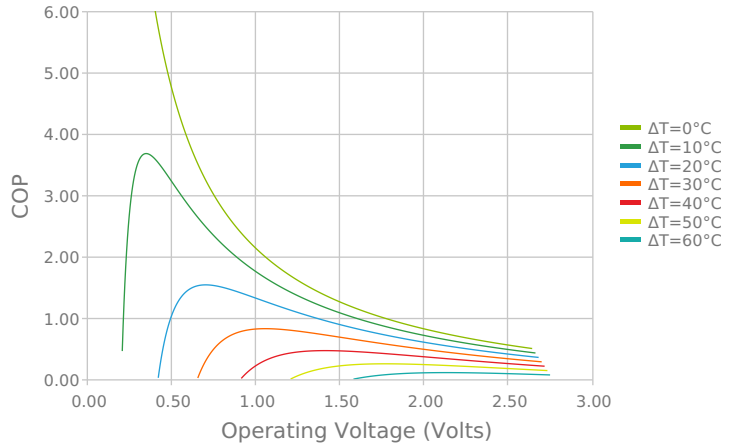
Current vs Voltage (I vs V)
 Thot = 27 °C



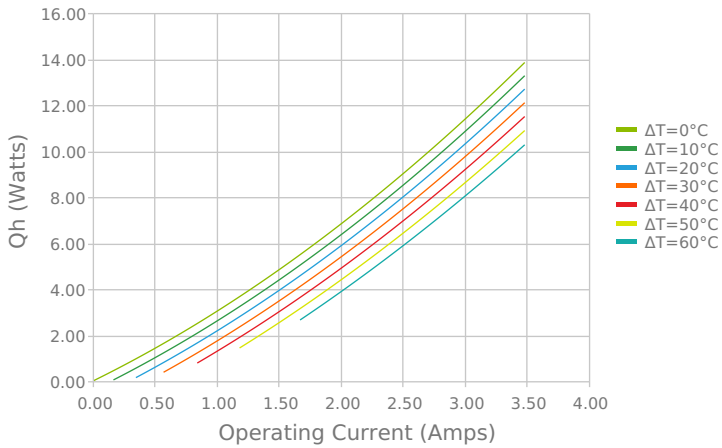
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



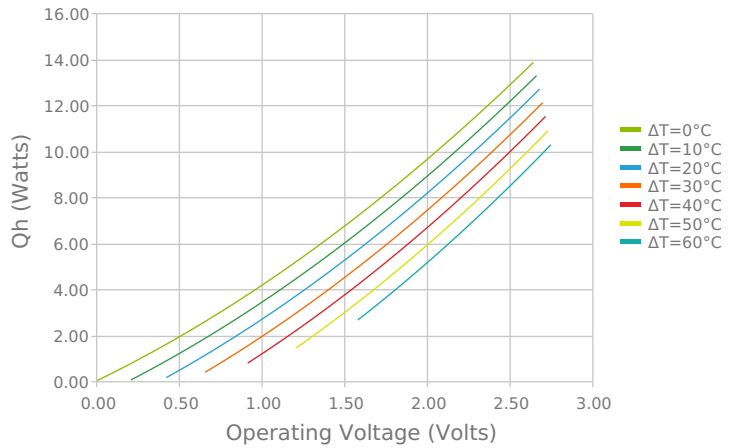
Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C



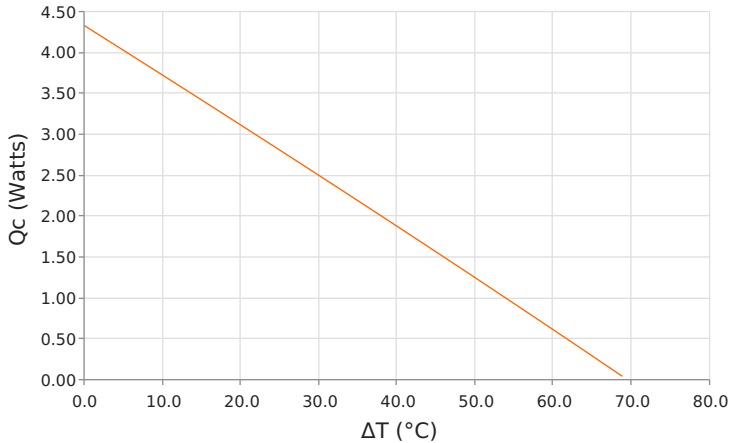
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



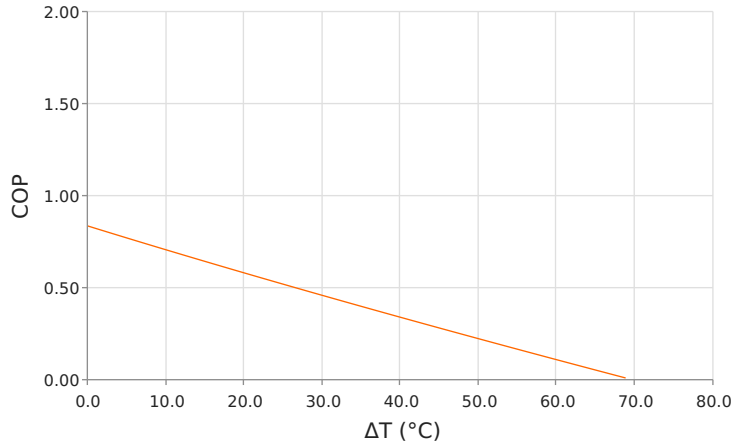
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)
 Thot = 27 °C | Current = 2.6 Amps



Coefficient of Performance (COP = Qc/Pin)
 Thot = 27 °C | Current = 2.6 Amps



SPECIFICATIONS*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax ($\Delta T = 0$)	4.6 Watts	4.8 Watts	5.0 Watts
ΔT_{max} ($Q_c = 0$)	70.5°C	73.5°C	78.8°C
I_{max} (I @ ΔT_{max})	3.1 Amps	3.1 Amps	3.0 Amps
V_{max} (V @ ΔT_{max})	2.5 Volts	2.6 Volts	2.8 Volts
Module Resistance	0.76 Ohms	0.79 Ohms	0.85 Ohms
Max Operating Temperature	80 °C		
Weight	3.0 gram(s)		

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
L1	3.581 ± 0.025 mm 0.141 ± 0.0010 in	0.025 mm / 0.025 mm 0.001 in / 0.001 in	Lapped	Lapped	114.3 mm 4.50 in

SEALING OPTIONS

Suffix	Sealant	Color	Temp Range	Description
	None			No sealing specified

NOTES

1. Max operating temperature: 80°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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