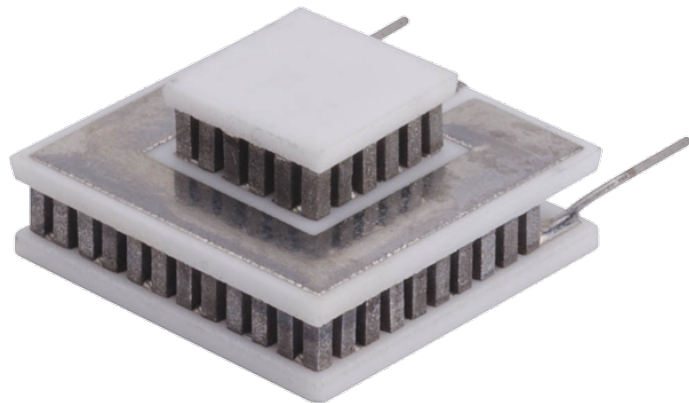


Multistage MS Series Thermoelectric Cooler

The MS2-083-05-05-13-13-11-W2 multistage thermoelectric cooler is able to reach colder temperatures than single stage thermoelectric coolers. It has a maximum Q_c of 1.4 Watts when $\Delta T = 0$ and a maximum ΔT of 101 °C at $Q_c = 0$.

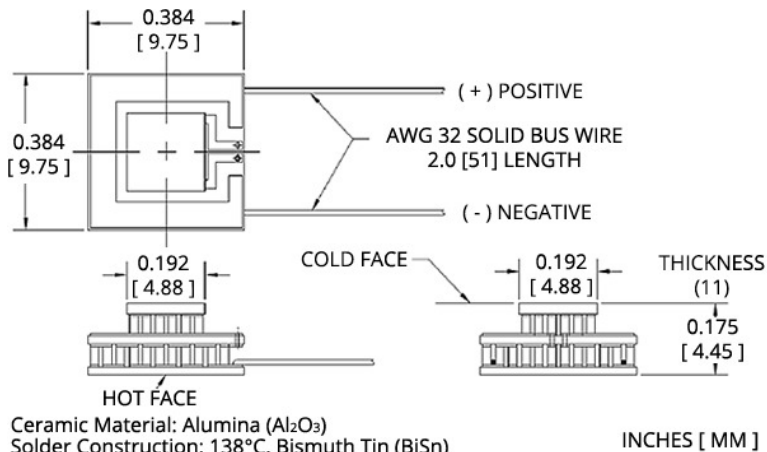


Features

- High temperature differential
- Precise temperature control
- Reliable solid-state operation
- Environmentally-friendly
- DC operation
- RoHS-compliant

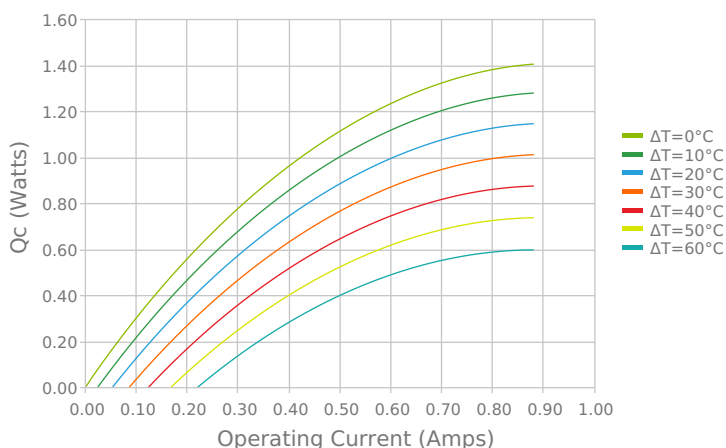
Applications

- Thermoelectric Cooling for CMOS Sensors
- Heads-Up Displays, Imaging Sensors

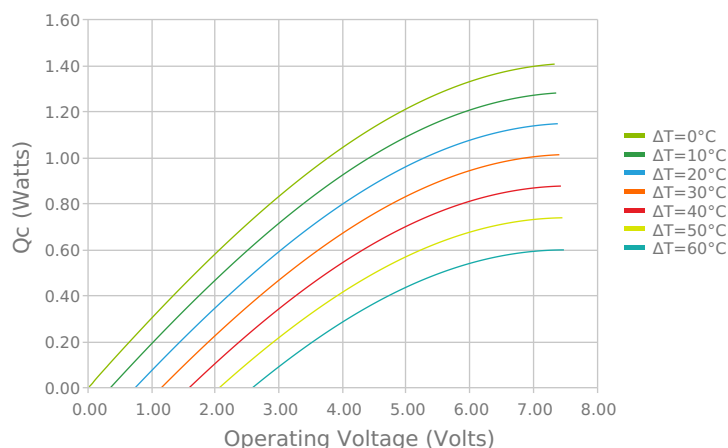


ELECTRICAL AND THERMAL PERFORMANCE

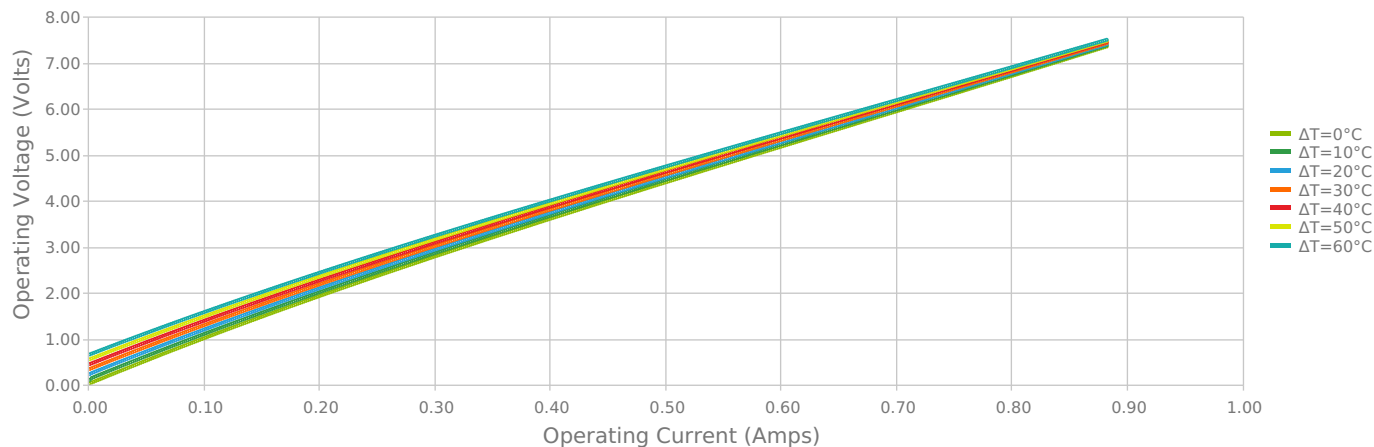
Heat Pumped at Cold Side
 $T_{hot} = 27^\circ C$



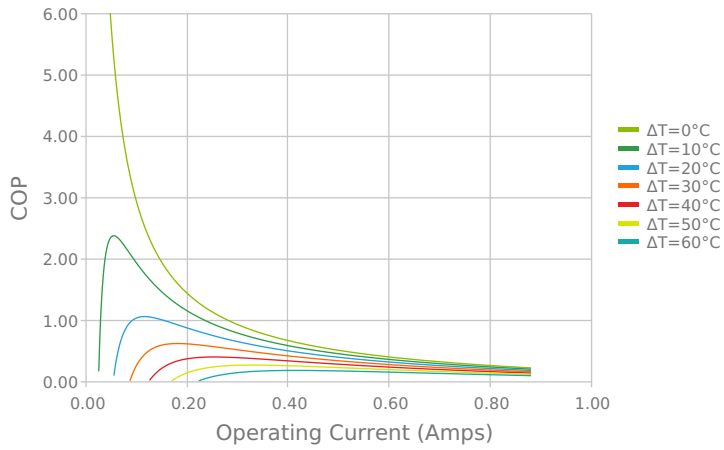
Heat Pumped at Cold Side
 $T_{hot} = 27^\circ C$



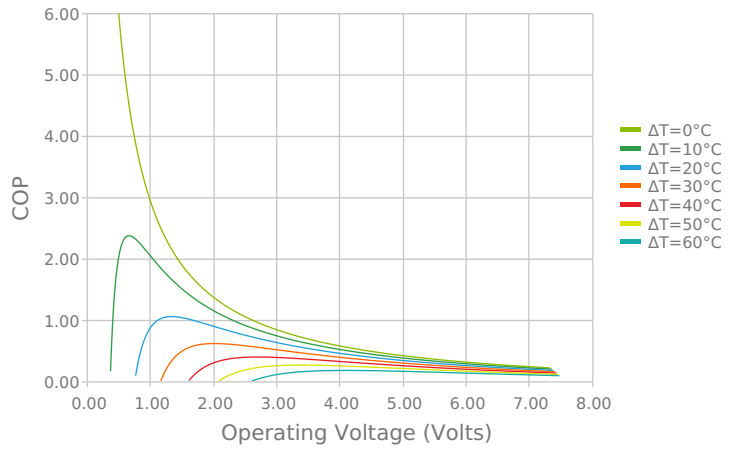
Current vs Voltage (I vs V)
 $T_{hot} = 27^\circ C$



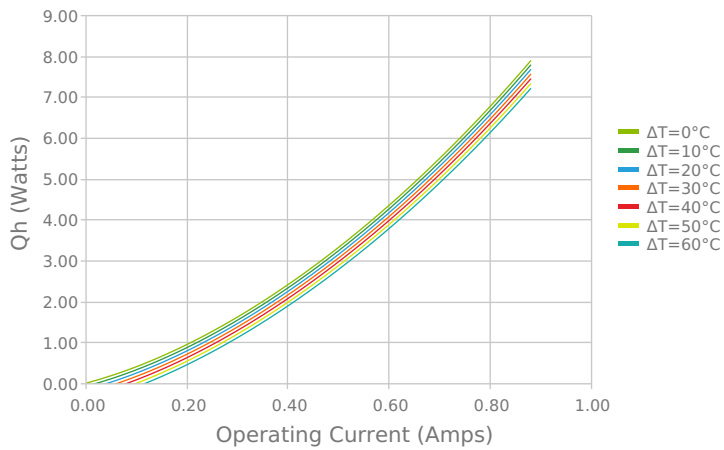
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



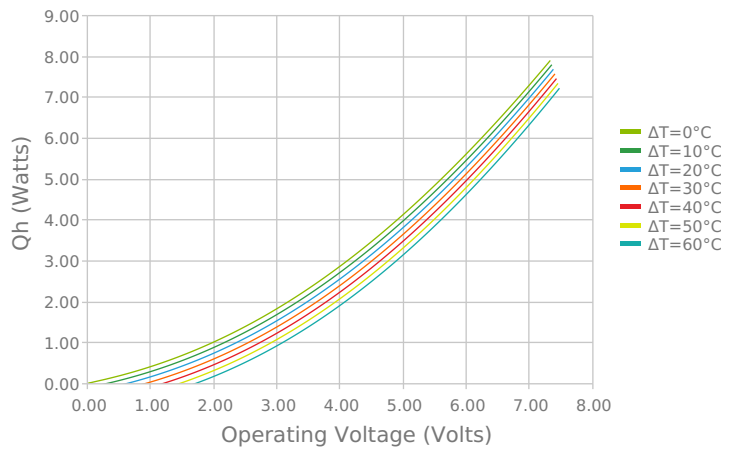
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



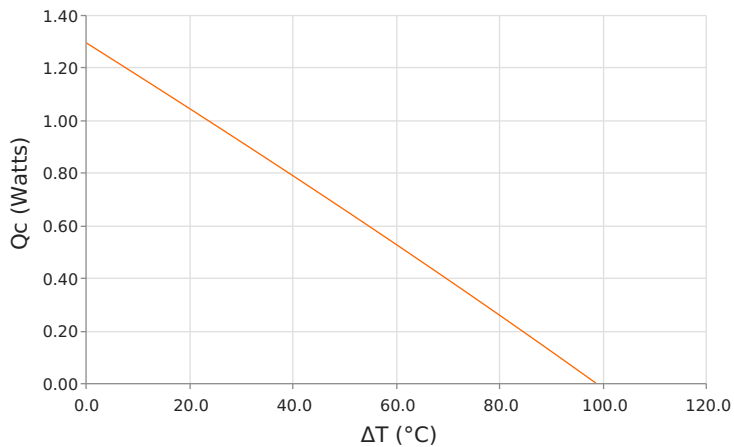
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



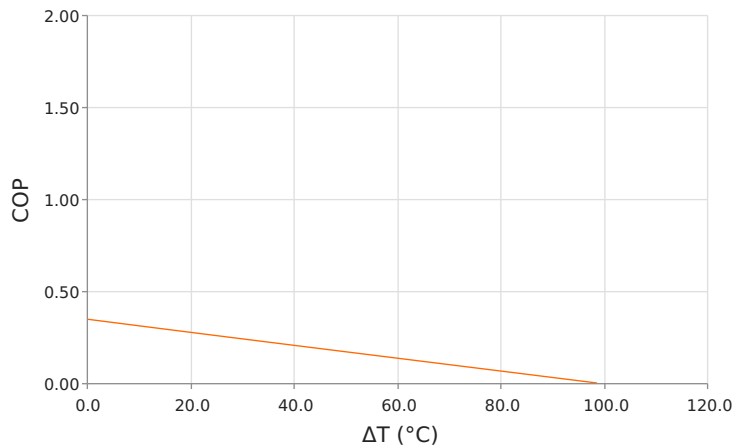
Total Heat Dissipated at Hot Side ($Q_h = Q_c + P_{in}$)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



Heat Pumped at Cold Side (Q_c)
 $T_{hot} = 27\text{ }^{\circ}\text{C}$ | Current = 0.7 Amps



Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 27\text{ }^{\circ}\text{C}$ | Current = 0.7 Amps



SPECIFICATIONS*

Hot Side Temperature	27.0 °C
Qcmax ($\Delta T = 0$)	1.4 Watts
ΔT_{max} ($Q_c = 0$)	101.0 °C
I_{max} (I @ ΔT_{max})	0.8 Amps
V_{max} (V @ ΔT_{max})	7.3 Volts
Module Resistance	8.73 Ohms
Max Operating Temperature	80 °C
Weight	2.0 gram(s)

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
11	4.900 ± 0.203 mm 0.193 ± 0.008 in	0.025 mm / 0.203 mm 0.001 in / 0.008 in	Lapped	Lapped	50.0 mm 1.97 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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