

Multistage MS Series Thermoelectric Cooler

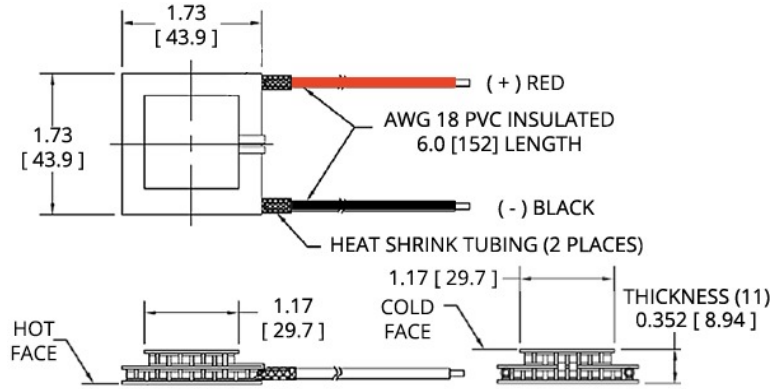
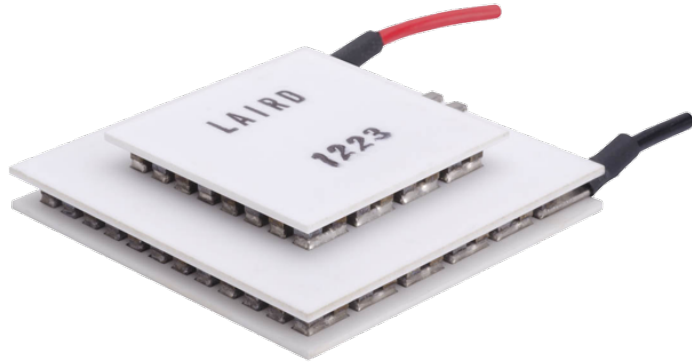
The MS2-102-22-22-17-17-11-W8 multistage thermoelectric cooler is able to reach colder temperatures than single stage thermoelectric coolers. It has a maximum Qc of 27.9 Watts when ΔT = 0 and a maximum ΔT of 94 °C at Qc = 0.

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



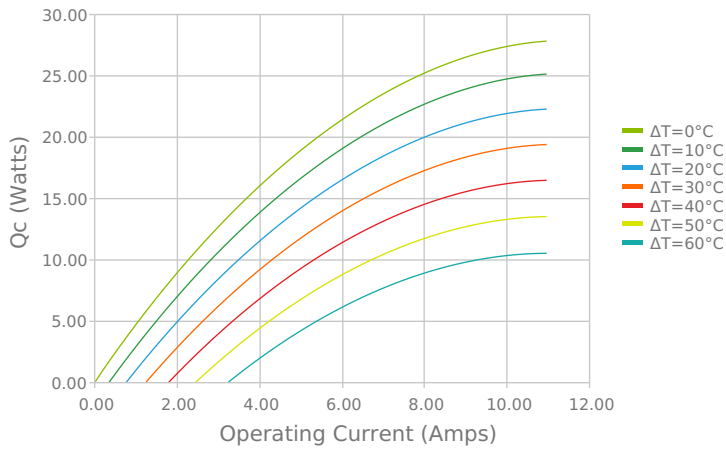
Ceramic Material: Alumina (Al₂O₃)

Solder Construction: 138°C, Bismuth Tin (BiSn)

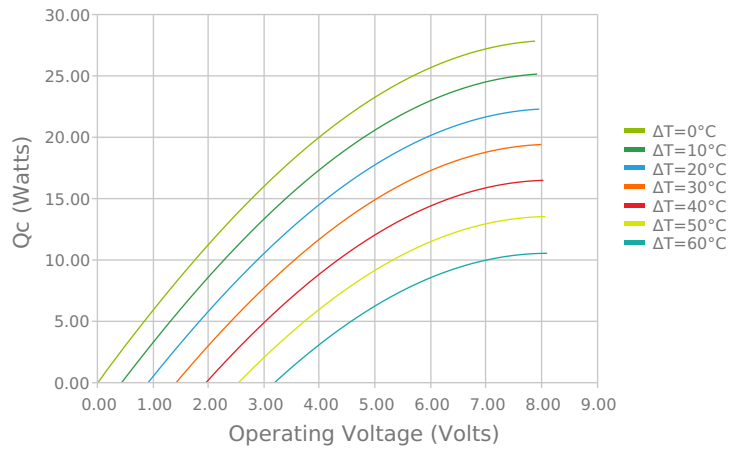
INCHES [MM]

ELECTRICAL AND THERMAL PERFORMANCE

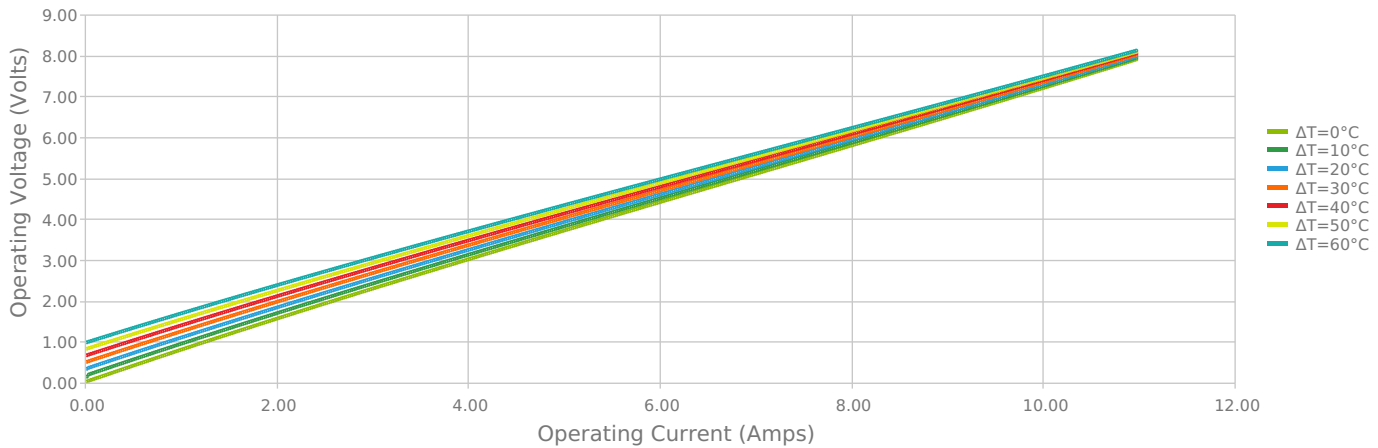
Heat Pumped at Cold Side
Thot = 27 °C



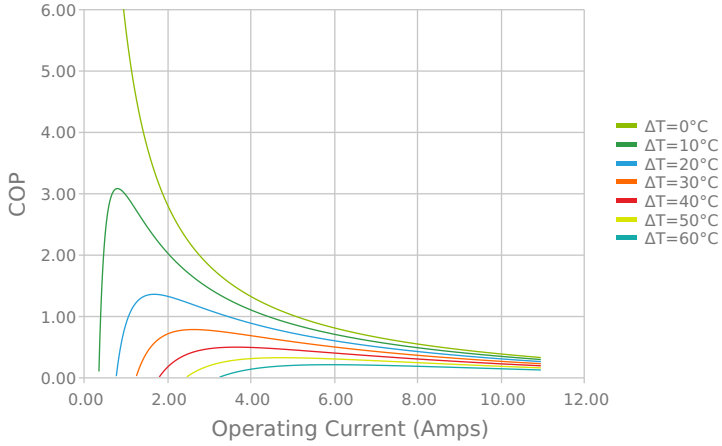
Heat Pumped at Cold Side
Thot = 27 °C



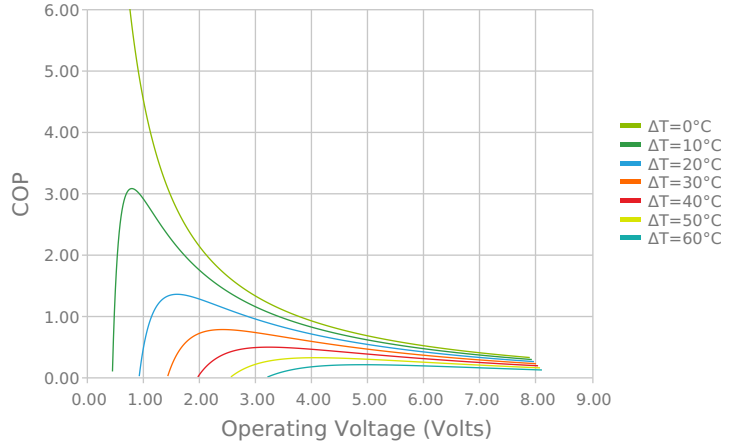
Current vs Voltage (I vs V)
Thot = 27 °C



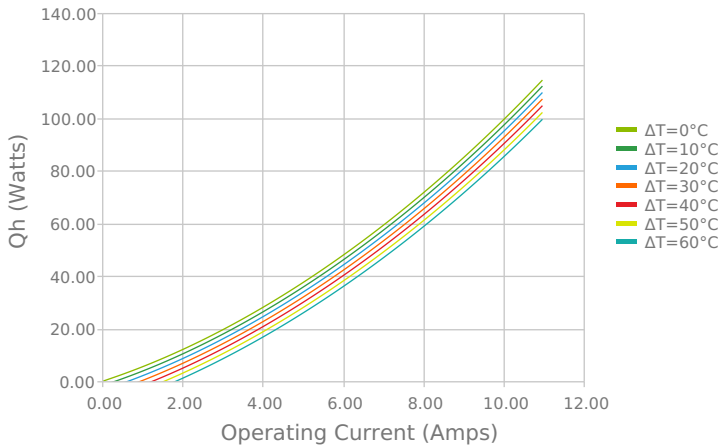
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



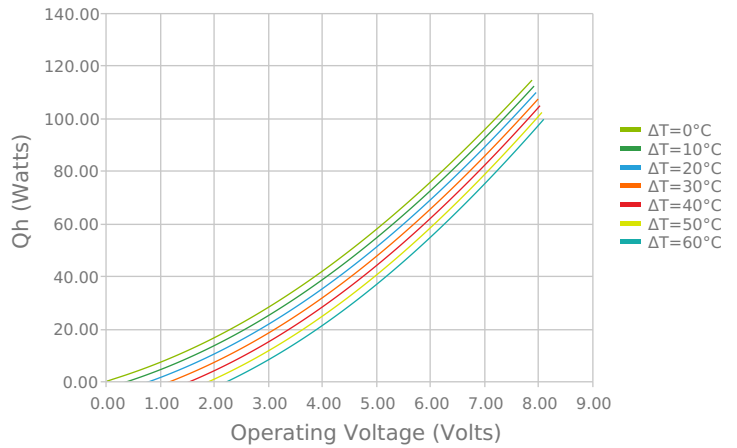
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



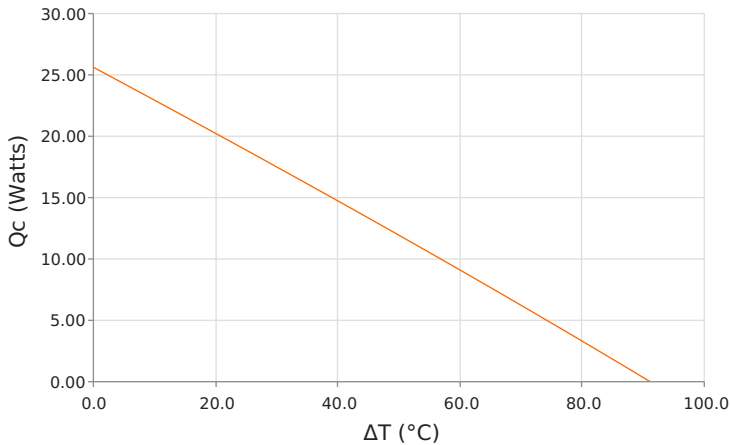
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



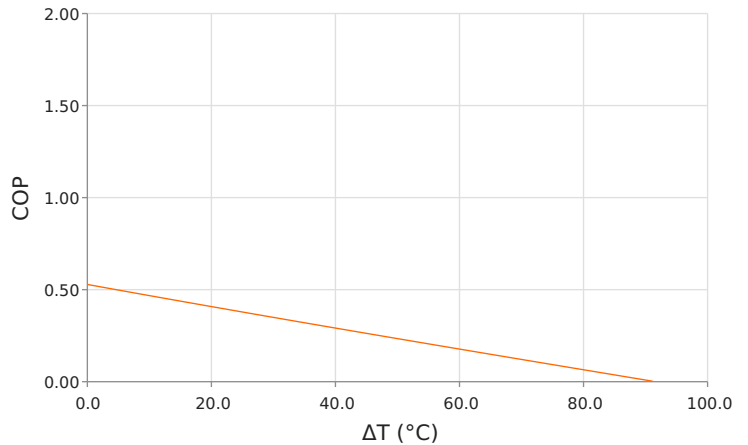
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



Heat Pumped at Cold Side (Qc)
Thot = 27 °C | Current = 8.2 Amps



Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 8.2 Amps



SPECIFICATIONS*

| | |
|---|----------------|
| Hot Side Temperature | 27.0 °C |
| Qcmax ($\Delta T = 0$) | 27.9 Watts |
| ΔT_{max} ($Q_c = 0$) | 94.0 °C |
| I_{max} (I @ ΔT_{max}) | 10.6 Amps |
| V_{max} (V @ ΔT_{max}) | 8.0 Volts |
| Module Resistance | 0.75 Ohms |
| Max Operating Temperature | 80 °C |
| Weight | 61.0 gram(s) |

* Specifications reflect thermoelectric coefficients updated March 2020

FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|---------------------------------------|--|----------|-----------|---------------------|
| 11 | 30.000 ± 0.203 mm 1.181 ± 0.008 in | 0.025 mm / 0.203 mm 0.001 in / 0.008 in | Lapped | Lapped | 199.9 mm 7.87 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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