# Multistage MS Series MS3-119-14-15-22-W8
# MFG Part Number: 9350004-399

## Multistage MS Series Thermoelectric Cooler

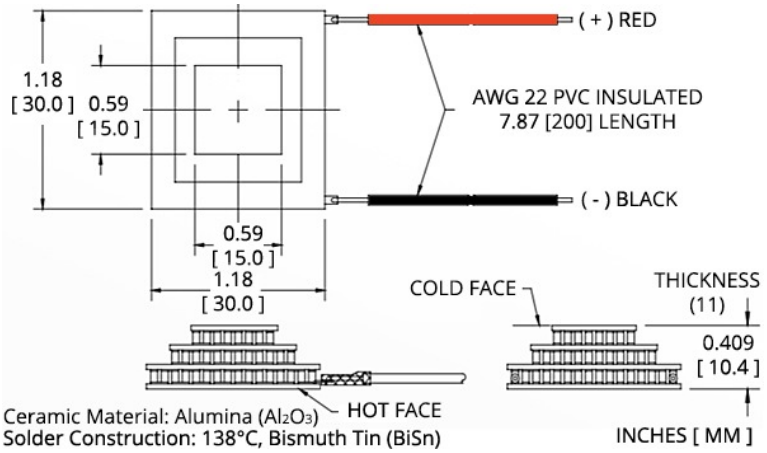
The MS3-119-14-15-22-W8 multistage thermoelectric cooler is able to reach colder temperatures than single stage thermoelectric coolers. It has a maximum Qc of 6.7 Watts when ΔT = 0 and a maximum ΔT of 107 °C at Qc = 0.

## Features

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

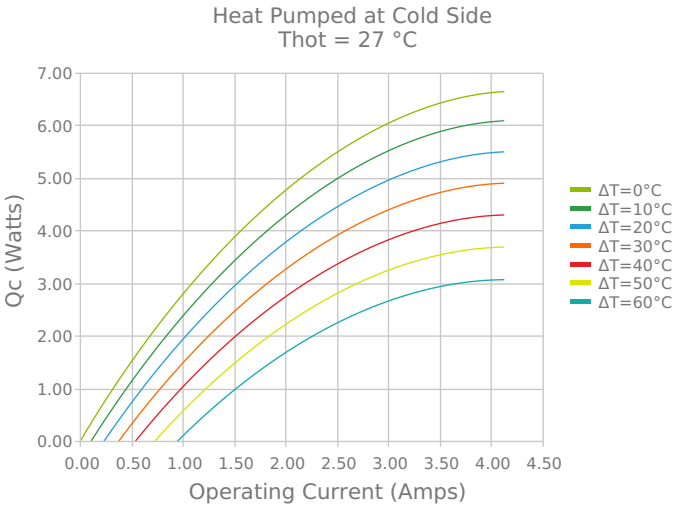
## Applications

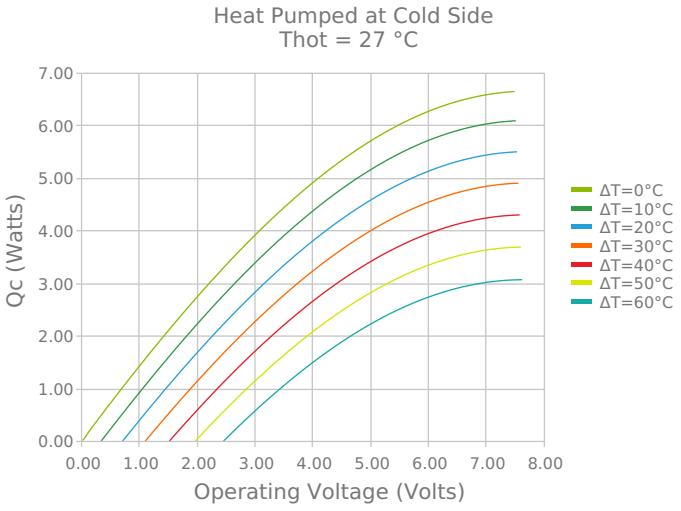
- Thermoelectric Cooling for CMOS Sensors
- Heads-Up Displays, Imaging Sensors

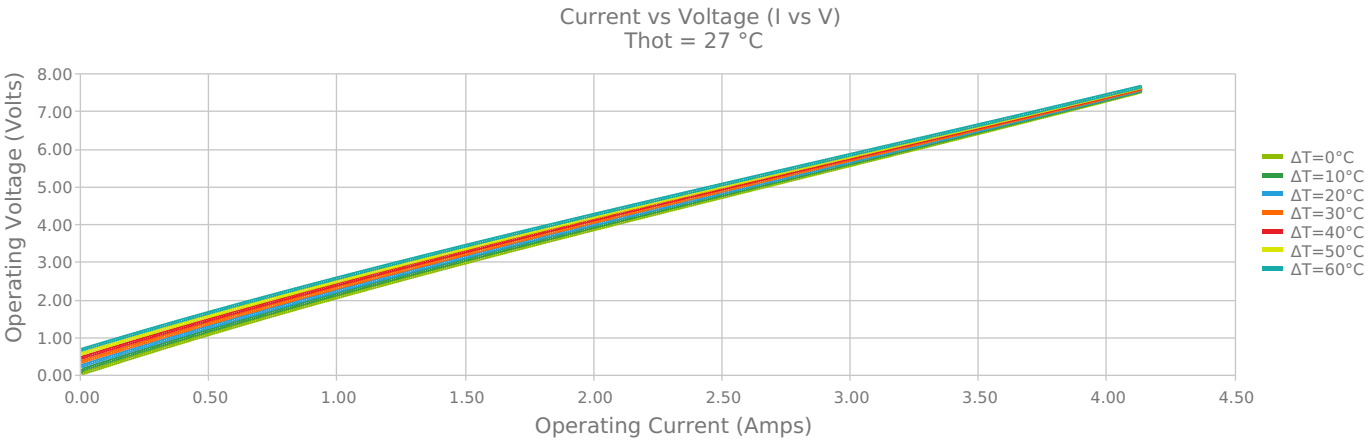



## ELECTRICAL AND THERMAL PERFORMANCE

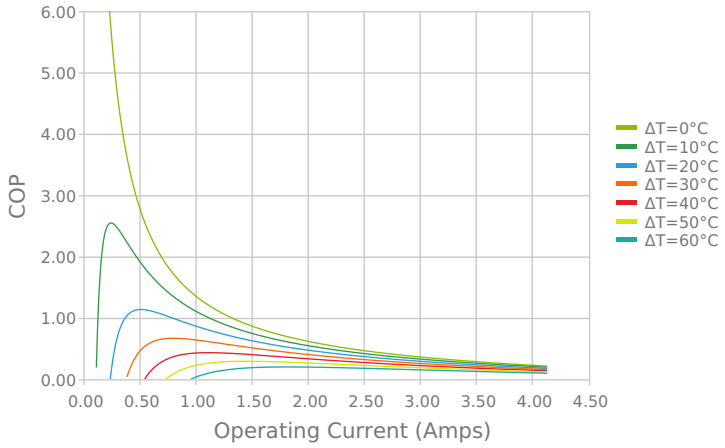
For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the HEATSINK side against the heat sink or other heat rejection method. The CONTROL side is always opposite the side with lead attachments. Lead attachment is a passive heat loss and less impactful if located on the side that attaches to the heat exchanger.



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

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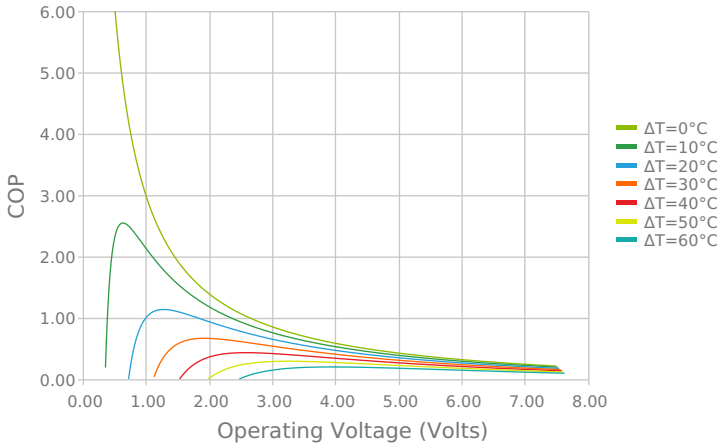
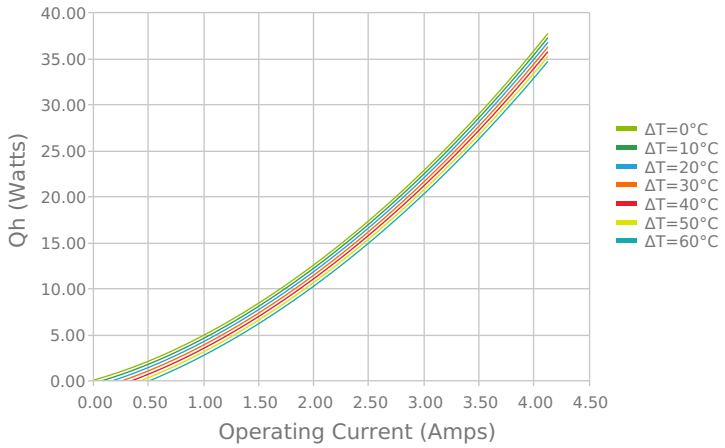



Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C

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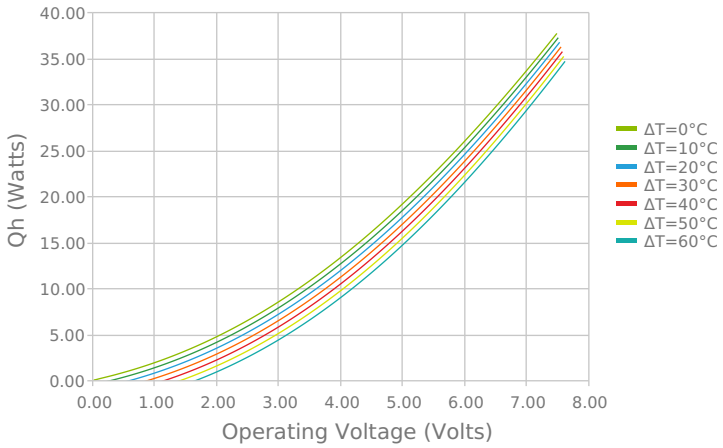
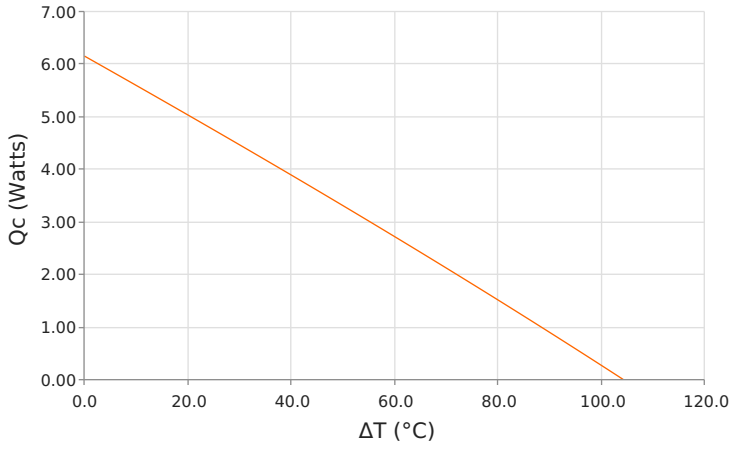
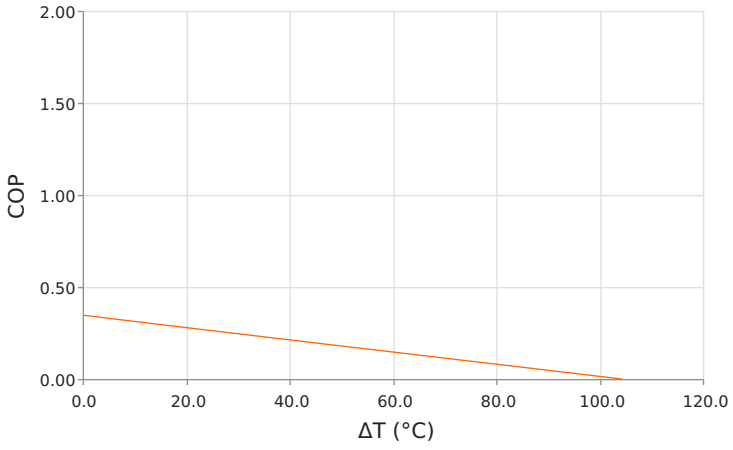



Heat Pumped at Cold Side (Qc)
Thot = 27 °C | Current = 3.1 Amps




Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C | Current = 3.1 Amps



## SPECIFICATIONS*

| | |
|---|---|
| **Hot Side Temperature** | **27.0 °C** |
| **Qcmax (ΔT = 0)** | 6.7 Watts |
| **ΔTmax (Qc = 0)** | 107.0 °C |
| **Imax (I @ ΔTmax)** | 4.0 Amps |
| **Vmax (V @ ΔTmax)** | 7.5 Volts |
| **Module Resistance** | 1.88 Ohms |
| **Max Operating Temperature** | 80 °C |
| **Weight** | 22.0 gram(s) |

* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|---|---|---|---|---|---|
| 22 | 10.603 ±0.203 mm<br>0.417 ± 0.008 in | 0.025 mm / 0.203 mm<br>0.001 in / 0.008 in | Pre-tinned | Pre-tinned | 199.9 mm<br>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 Imax or Vmax when operating module
3. Reference assembly guidelines for recommended installation
4. Solder tinning also available on metallized ceramics



Revision: 00 Date: 06-01-2022

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