

HiTemp ET Series Thermoelectric Cooler

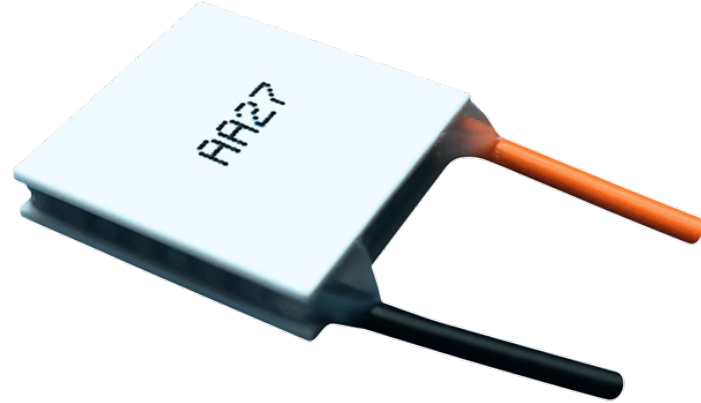
Note: This product is not recommended for new designs.

The recommended replacement is:

MFG Part Number: 387004943

Description: ETX6-3-F1-2020-TA-RT-W6

The ET6-3-F1-2020-TA-RT-W6 high temperature thermoelectric cooler uses Laird Thermal Systems' enhanced Thermoelectric Module construction preventing performance degrading diffusion, which is common in standard grade thermoelectric coolers operating in high temperature environments exceeding 80 °C. It has a maximum Q_c of 12.8 Watts when $\Delta T = 0$ and a maximum ΔT of 77.9 °C at $Q_c = 0$.

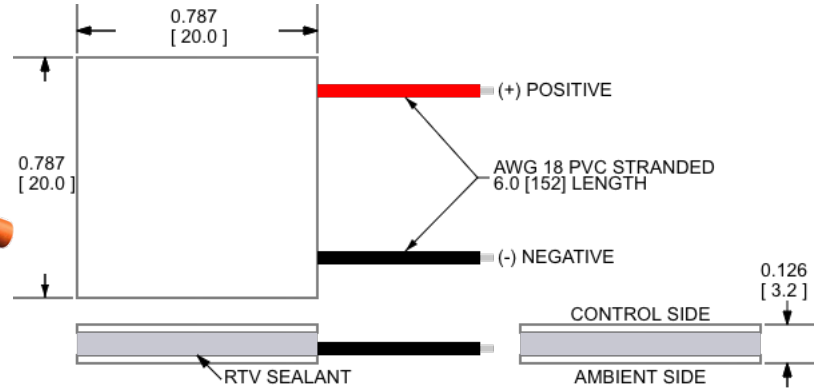


Features

- 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: Al_2O_3

SOLDER CONSTRUCTION: 232°C, SbSn

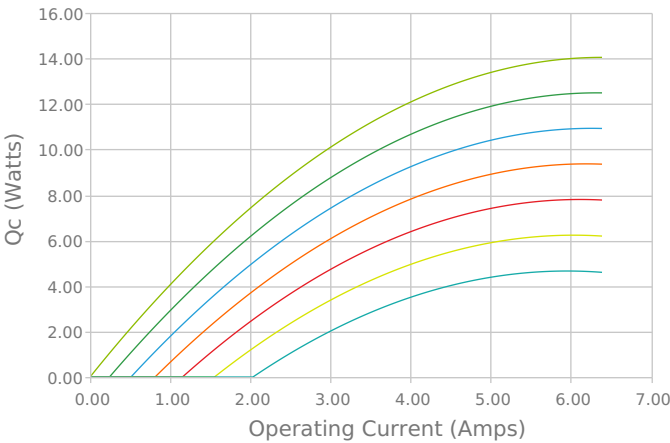
INCHES [MM]

Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

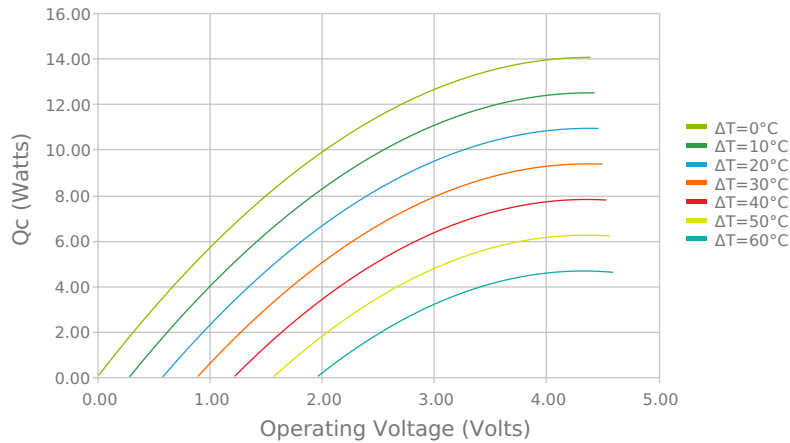
Electrical and Thermal Performance

For maximum performance, be sure to orient the CONTROL side of the TEC against the application to be managed and the AMBIENT 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.

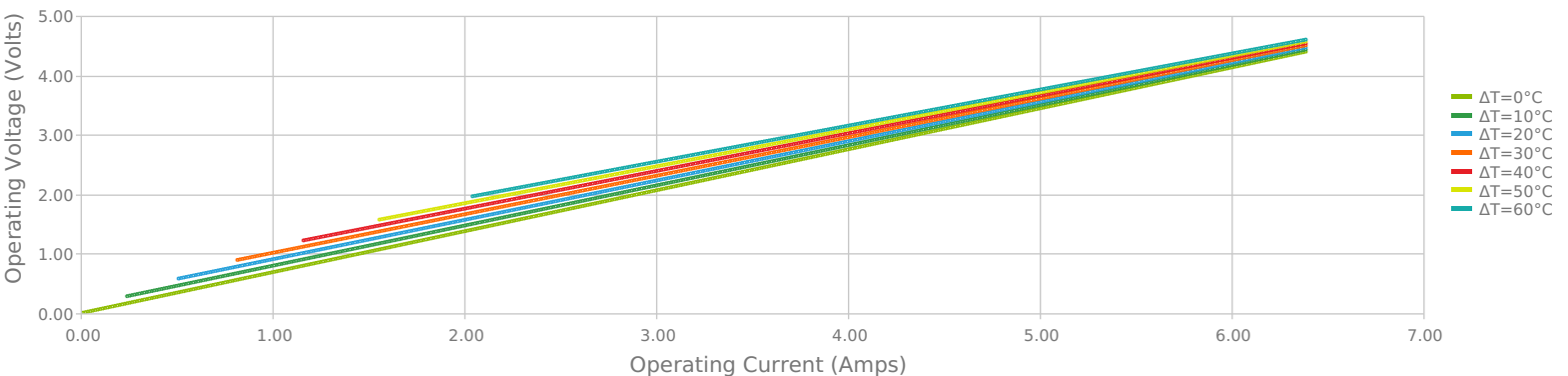
Heat Pumped at Cold Side
 $T_{hot} = 85\text{ °C}$



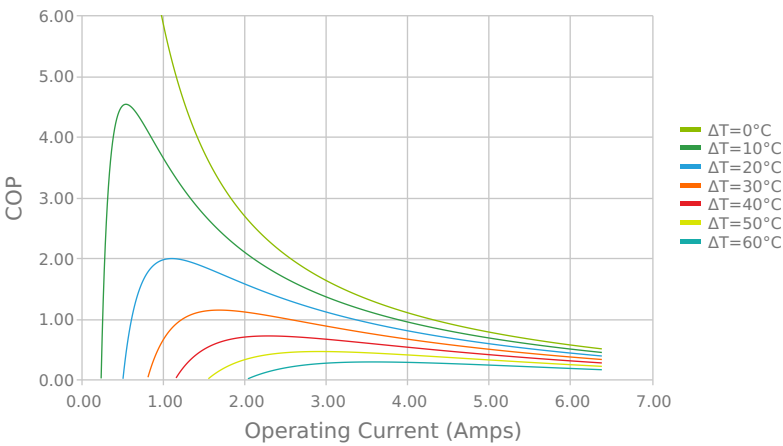
Heat Pumped at Cold Side
 $T_{hot} = 85\text{ °C}$



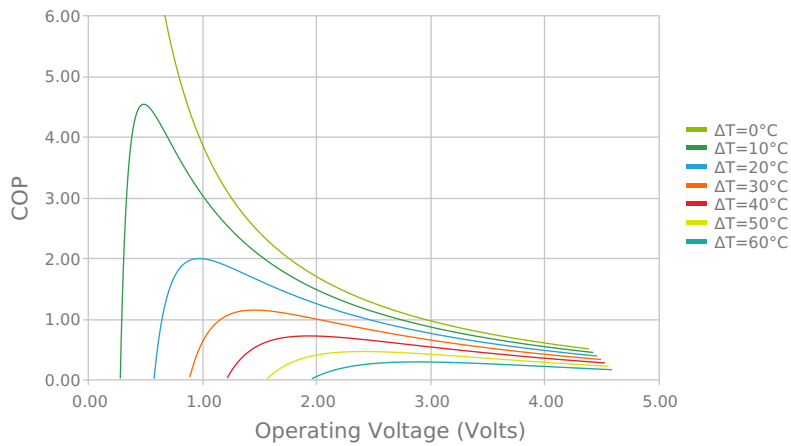
Current vs Voltage (I vs V)
 $T_{hot} = 85\text{ °C}$



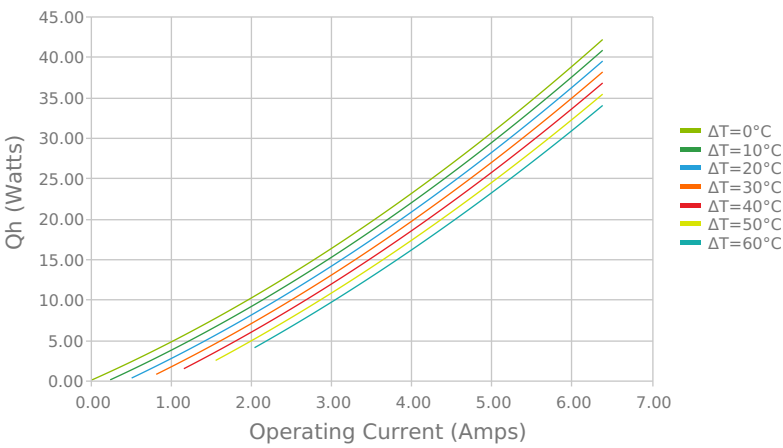
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 85\text{ }^{\circ}\text{C}$



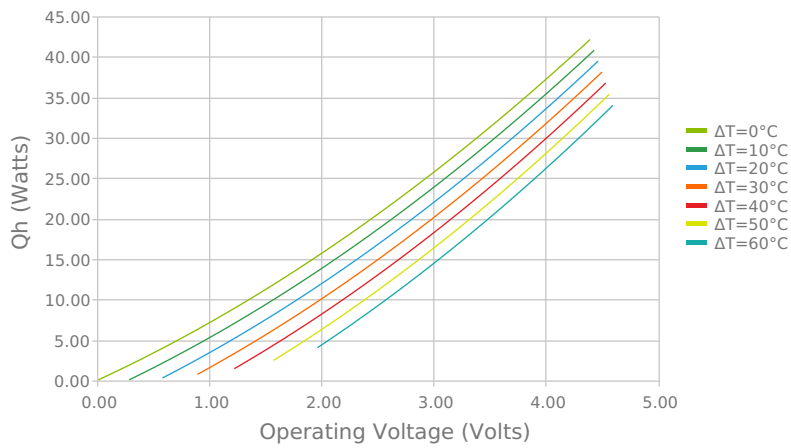
Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 85\text{ }^{\circ}\text{C}$



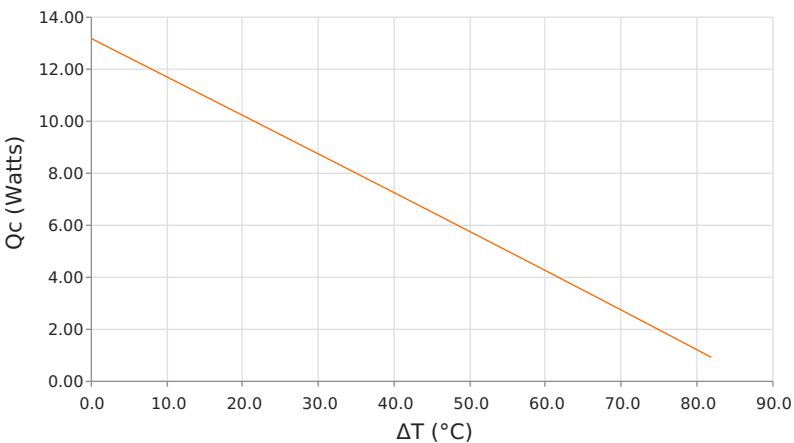
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
 $T_{hot} = 85\text{ }^{\circ}\text{C}$



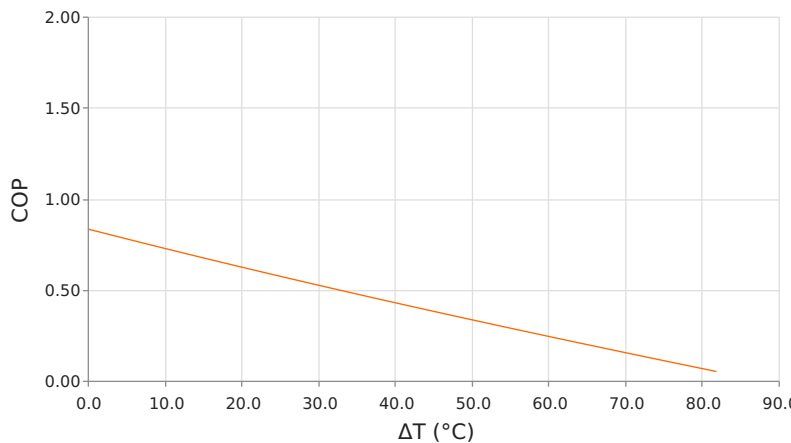
Total Heat Dissipated at Hot Side ($Q_h=Q_c+P_{in}$)
 $T_{hot} = 85\text{ }^{\circ}\text{C}$



Heat Pumped at Cold Side (Q_c)
 $T_{hot} = 85\text{ }^{\circ}\text{C}$ | operating = 4.8 Amps



Coefficient of Performance (COP = Q_c/P_{in})
 $T_{hot} = 85\text{ }^{\circ}\text{C}$ | operating = 4.8 Amps



Specifications

| Hot Side Temperature | 50.0 °C | 85.0 °C | 110.0 °C |
|---------------------------|-------------|------------|------------|
| Qcmax (ΔT = 0) | 12.8 Watts | 14.0 Watts | 14.7 Watts |
| ΔTmax (Qc = 0) | 77.9°C | 89.3°C | 96.2°C |
| Imax (I @ ΔTmax) | 5.8 Amps | 5.7 Amps | 5.6 Amps |
| Vmax (V @ ΔTmax) | 3.7 Volts | 4.3 Volts | 4.7 Volts |
| Module Resistance | 0.59 Ohms | 0.69 Ohms | 0.75 Ohms |
| Max Operating Temperature | 150 °C | | |
| Weight | 7.0 gram(s) | | |

Finishing Options

| Suffix | Thickness | Flatness / Parallelism | Hot Face | Cold Face | Lead Length |
|--------|--------------------------------------|--|----------|-----------|--------------------|
| 11 | 3.200 ±0.051 mm 0.126 ± 0.0020 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 |
|--------|---------|----------------------|--------------|----------------------------------|
| RT | RTV | Translucent or White | -60 to 204°C | Non-corrosive, silicone adhesive |

Notes

Max operating temperature: 150°C
Do not exceed Imax or Vmax when operating module
Reference assembly guidelines for recommended installation

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Revision: 00 Date: 06-01-2022

Print Date: 05-29-2025