

## ZT Series Thermoelectric Cooler

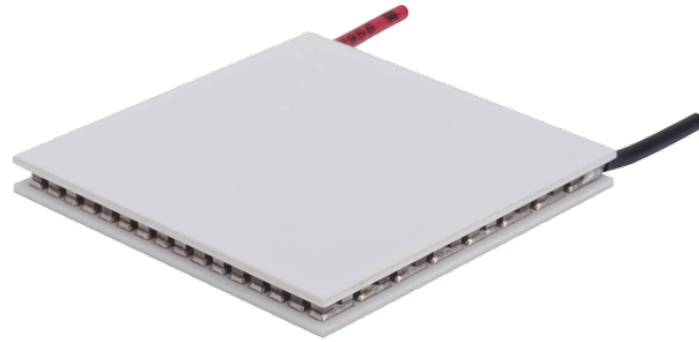
**Note: This product is not recommended for new designs.**

The recommended replacement is:

MFG Part Number: 387006453

Description: ETX8-12-F1-4040-TA-W6

The ZT8-12-F1-4040-TA-W8 is a high performance thermoelectric cooler that achieves a higher temperature differential than standard single stage thermoelectric coolers. It has a maximum  $Q_c$  of 72.6 Watts when  $\Delta T = 0$  and a maximum  $\Delta T$  of 71.7 °C at  $Q_c = 0$ .

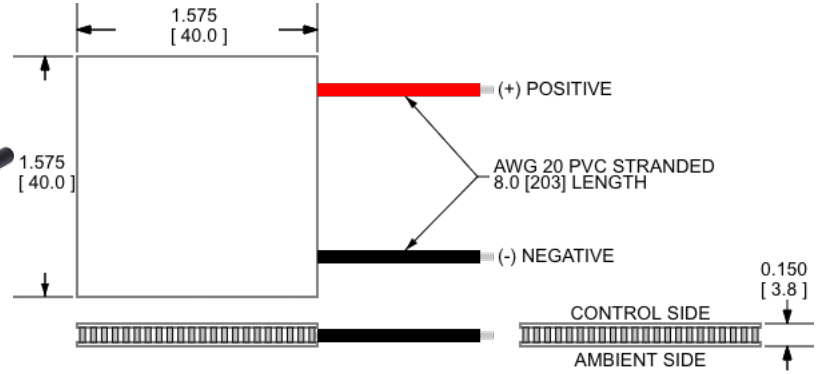


## Features

- High temperature differential
- Precise temperature control
- Reliable solid-state operation
- No sound or vibration
- DC operation
- RoHS-compliant

## Applications

- Peltier Cooling for Refrigerated Centrifuges
- Peltier Cooling for Machine Vision
- Thermoelectric Cooling for CMOS Sensors
- Cooling Solutions for Autonomous Systems



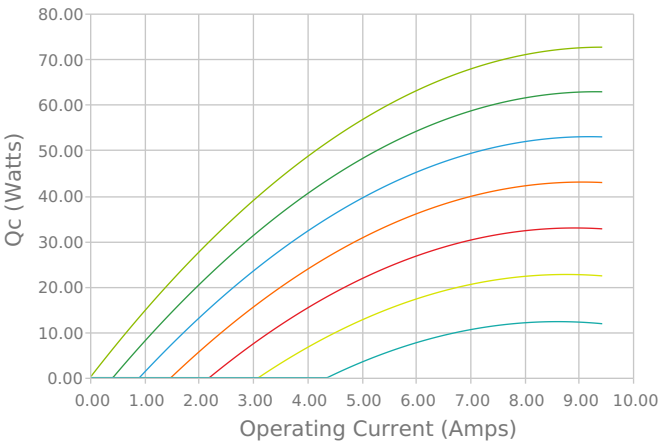
CERAMIC MATERIAL:  $Al_2O_3$   
SOLDER CONSTRUCTION: 138°C, BiSn

INCHES [MM]

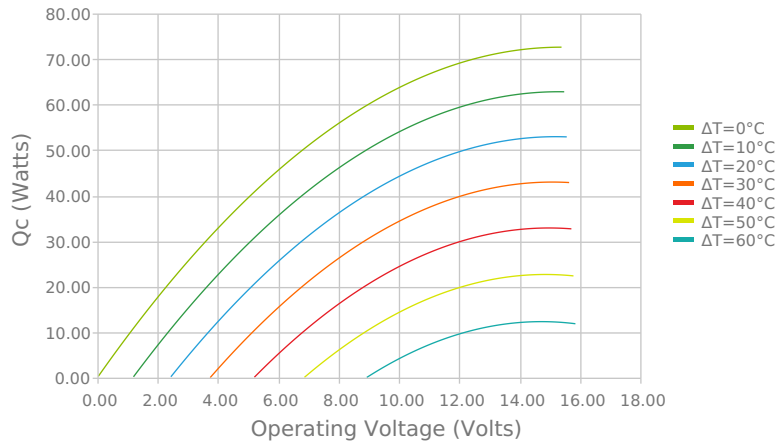
## Electrical and Thermal Performance

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.

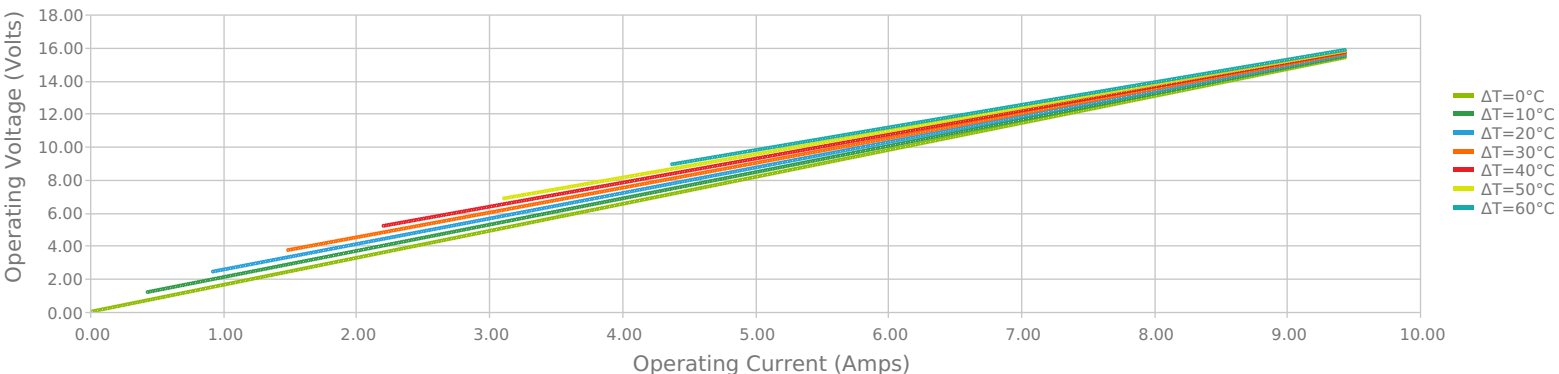
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



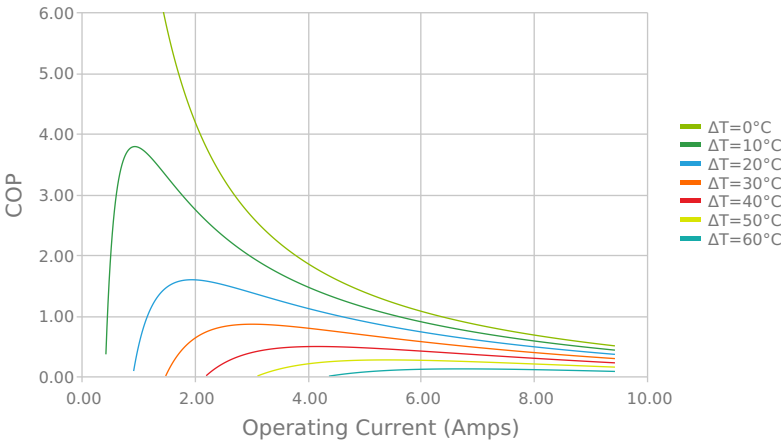
Heat Pumped at Cold Side  
 $T_{hot} = 27\text{ °C}$



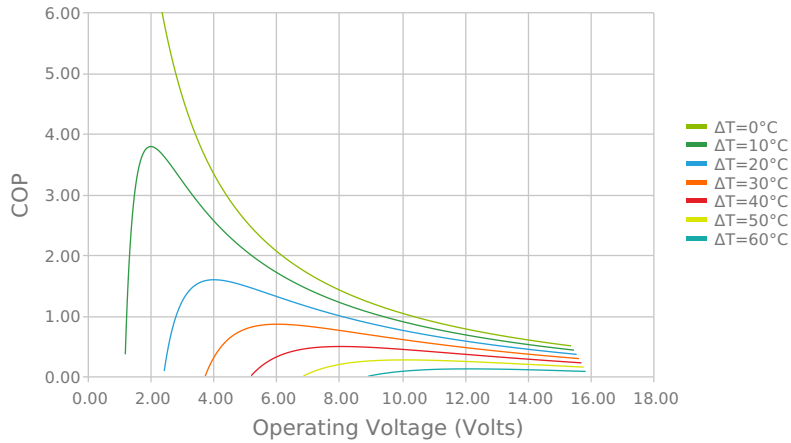
Current vs Voltage (I vs V)  
 $T_{hot} = 27\text{ °C}$



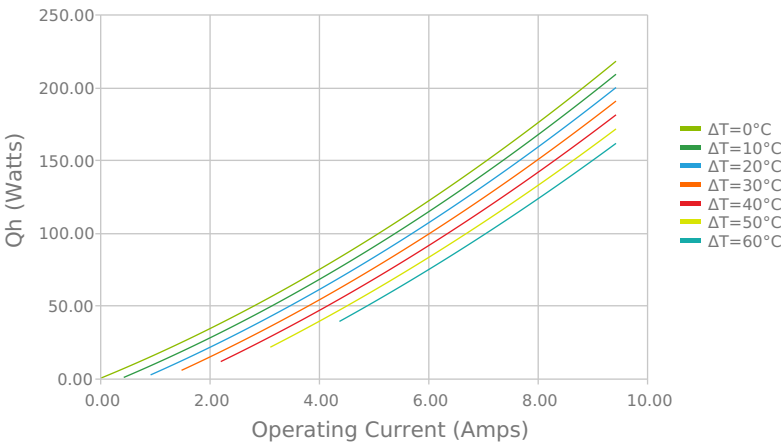
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



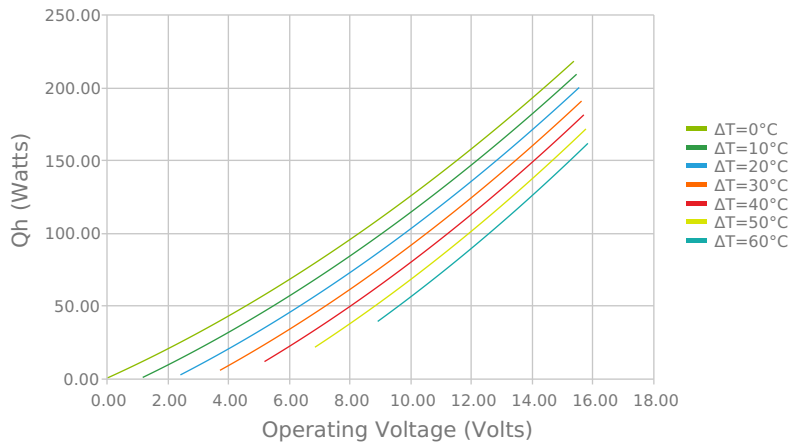
Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



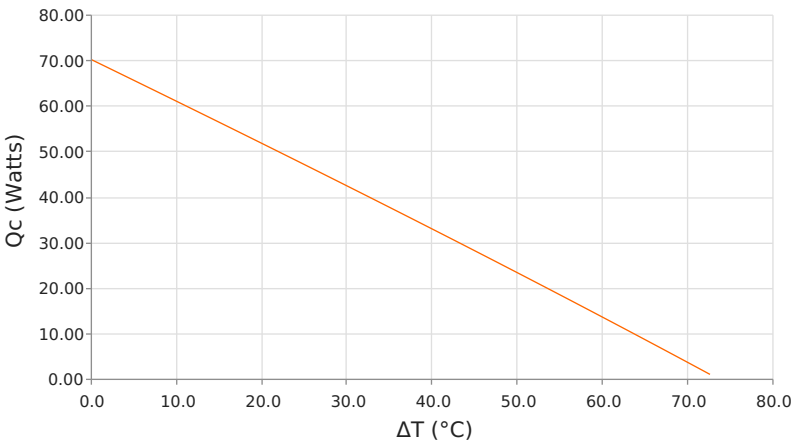
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



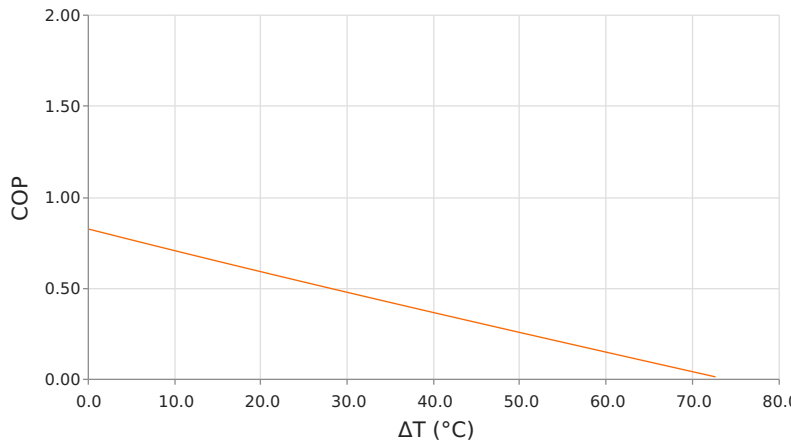
Total Heat Dissipated at Hot Side ( $Q_h=Q_c+P_{in}$ )  
 $T_{hot} = 27\text{ }^{\circ}\text{C}$



Heat Pumped at Cold Side ( $Q_c$ )  
 $T_{hot} = 35\text{ }^{\circ}\text{C}$  |  $I_{operating} = 7.1\text{ Amps}$



Coefficient of Performance (COP =  $Q_c/P_{in}$ )  
 $T_{hot} = 35\text{ }^{\circ}\text{C}$  |  $I_{operating} = 7.1\text{ Amps}$



Specifications

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax (ΔT = 0)	72.6 Watts	74.6 Watts	78.1 Watts
ΔTmax (Qc = 0)	71.7°C	74.8°C	80.4°C
Imax (I @ ΔTmax)	8.4 Amps	8.3 Amps	8.2 Amps
Vmax (V @ ΔTmax)	14.6 Volts	15.1 Volts	16.2 Volts
Module Resistance	1.63 Ohms	1.70 Ohms	1.84 Ohms
Max Operating Temperature	80 °C		
Weight	26.0 gram(s)		

Finishing Options

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	3.810 ±0.025 mm 0.150 ± 0.0010 in	0.025 mm / 0.025 mm 0.001 in / 0.001 in	Lapped	Lapped	203.2 mm 8.00 in

Sealing Options

Suffix	Sealant	Color	Temp Range	Description
	None			No sealing specified

Notes

Max operating temperature: 80°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