

**UltraTEC™ UT Series Thermoelectric Cooler**

The UT15-288-F2-5252-TA-RT-W6 is a high heat flux density thermoelectric cooler. The thermoelectric module is assembled with a large number of semiconducting thermoelectric couples to achieve a higher heat pumping capacity than standard single stage thermoelectric coolers. It has a maximum Qc of 278.5 Watts when ΔT = 0 and a maximum ΔT of 68.9 °C at Qc = 0.

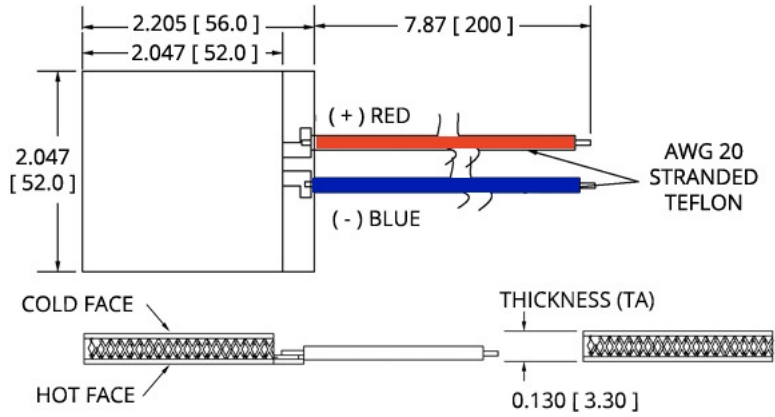


**Features**

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

**Applications**

- Thermoelectric Coolers and Assemblies for Medical Applications
- Thermoelectric Coolers for Handheld Cosmetic Lasers
- Industrial Laser Cooling
- Peltier Cooling for Digital Light Processors



Ceramic Material: Alumina (Al<sub>2</sub>O<sub>3</sub>)

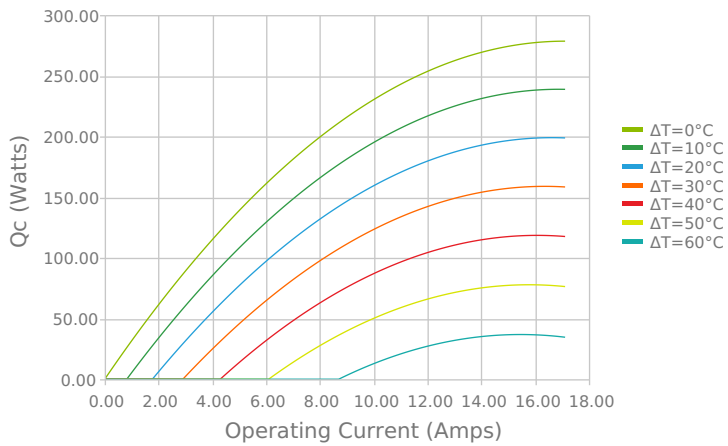
Solder Construction: 138°C, Bismuth Tin (BiSn)

INCHES [ MM ]

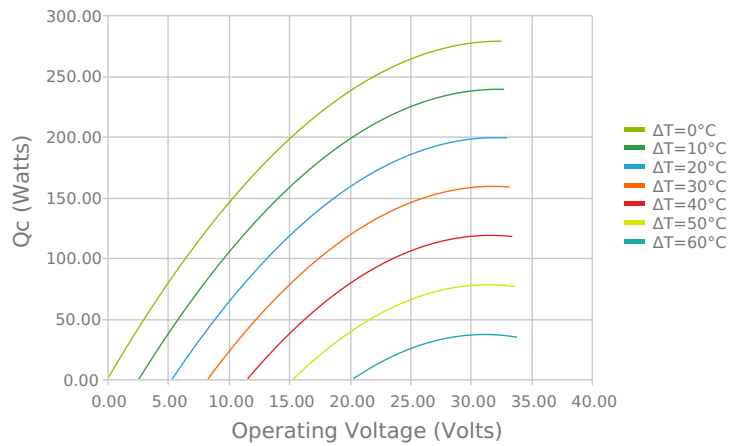
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

**ELECTRICAL AND THERMAL PERFORMANCE**

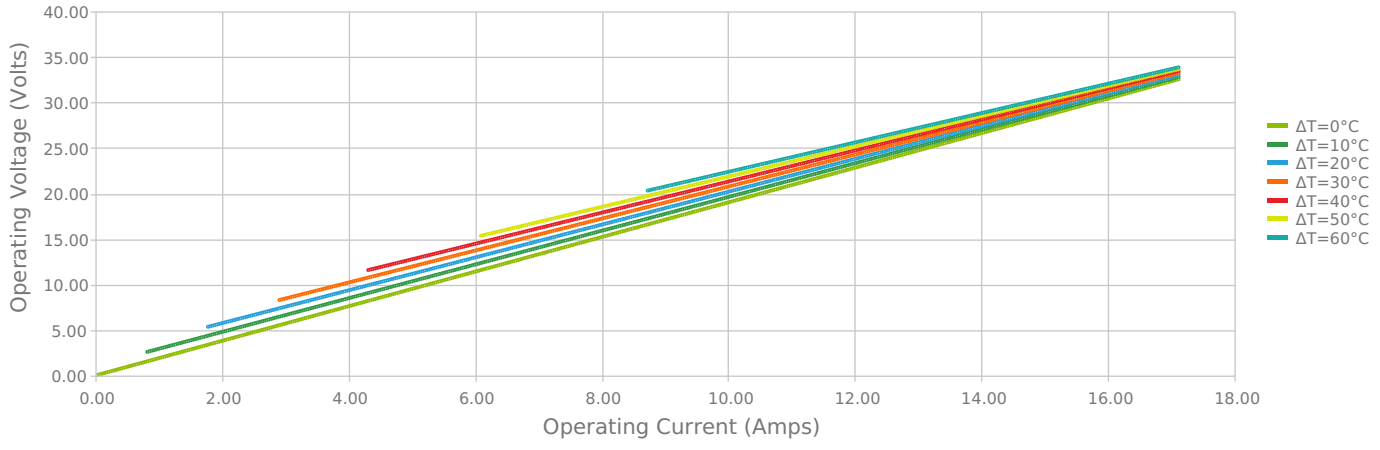
Heat Pumped at Cold Side  
 Thot = 27 °C



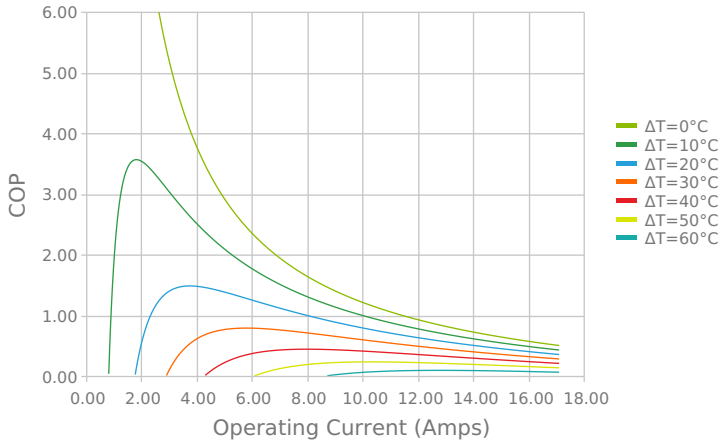
Heat Pumped at Cold Side  
 Thot = 27 °C



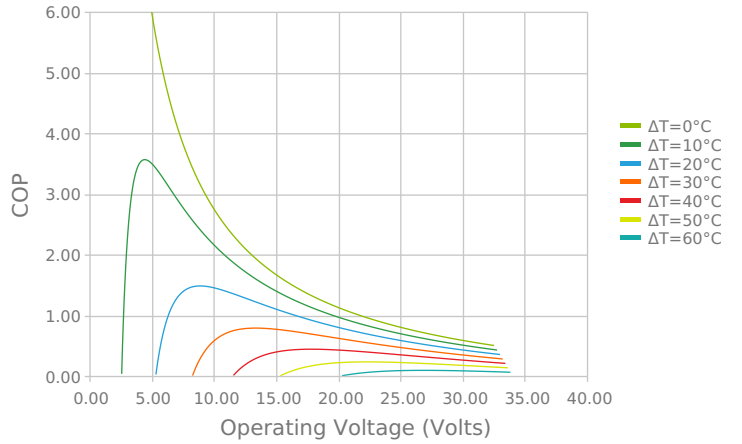
Current vs Voltage (I vs V)  
Thot = 27 °C



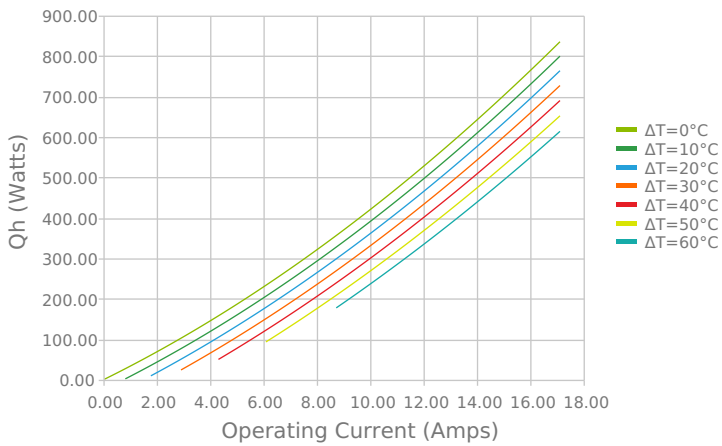
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



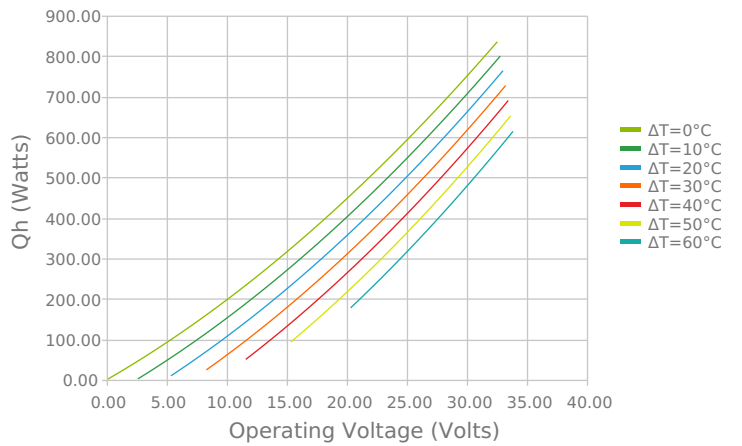
Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C



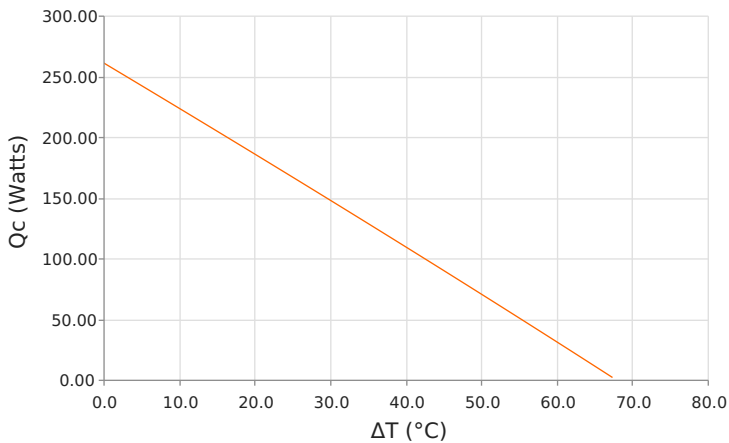
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



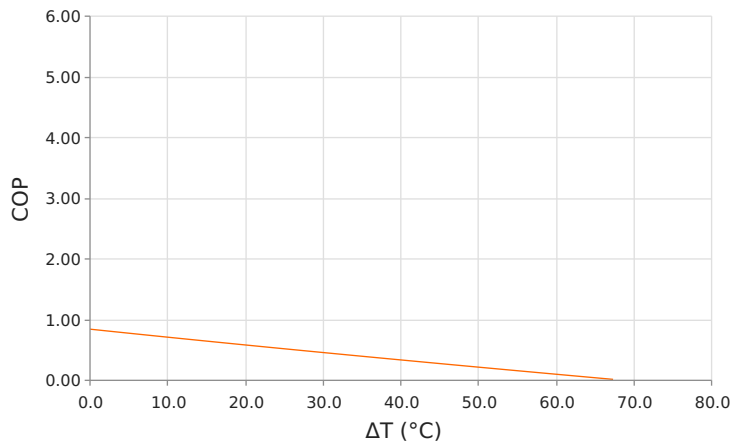
Total Heat Dissipated at Hot Side (Qh=Qc+Pin)  
 Thot = 27 °C



Heat Pumped at Cold Side (Qc)  
 Thot = 27 °C | Current = 12.8 Amps



Coefficient of Performance (COP = Qc/Pin)  
 Thot = 27 °C | Current = 12.8 Amps



## SPECIFICATIONS\*

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
<b>Q<sub>cmax</sub> (ΔT = 0)</b>	278.5 Watts	287.0 Watts	301.9 Watts
<b>ΔT<sub>max</sub> (Q<sub>c</sub> = 0)</b>	68.9°C	71.8°C	77.0°C
<b>I<sub>max</sub> (I @ ΔT<sub>max</sub>)</b>	15.2 Amps	15.1 Amps	14.9 Amps
<b>V<sub>max</sub> (V @ ΔT<sub>max</sub>)</b>	30.9 Volts	32.1 Volts	34.3 Volts
<b>Module Resistance</b>	1.90 Ohms	1.98 Ohms	2.13 Ohms
<b>Max Operating Temperature</b>	80 °C		
<b>Weight</b>	53.0 gram(s)		

\* Specifications reflect thermoelectric coefficients updated March 2020

## FINISHING OPTIONS

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	3.300 ±0.025 mm 0.130 ± 0.001 in	0.025 mm / 0.025 mm 0.001 in / 0.001 in	Lapped	Lapped	152.4 mm 6.00 in

## SEALING OPTIONS

Suffix	Sealant	Color	Temp Range	Description
RT	RTV	White	-60 to 204°C	Non-corrosive, silicone adhesive

## NOTES

1. Max operating temperature: 80°C
2. Do not exceed I<sub>max</sub> or V<sub>max</sub> when operating module
3. Reference assembly guidelines for recommended installation

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