TTS
TARK THERMAL SOLUTIONS

UltraTEC™ UT Series UT8-12-F2-2525-TA-RT-W6
MFG Part Number: 430745-505

Legacy Product

UltraTEC™ UT Series Thermoelectric Cooler

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

The recommended replacement is:

MFG Part Number: 387004706

Description: UTX8-12-F2-2525-TA-RT-W6

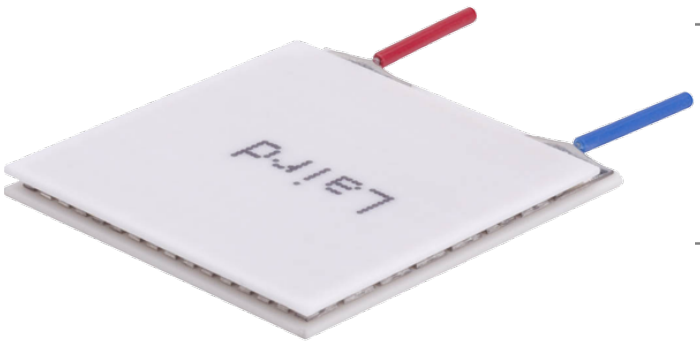
The UT8-12-F2-2525-TA-RT-W6 is a high heat flux density thermoelectric cooler. The thermoelectric module is assembled with a large number of semiconducting thermoelectric couples to achieve a higher heat pumping capacity than standard single stage thermoelectric coolers. It has a maximum Qc of 63.8 Watts when ΔT = 0 and a maximum ΔT of 68.9 °C at Qc = 0.

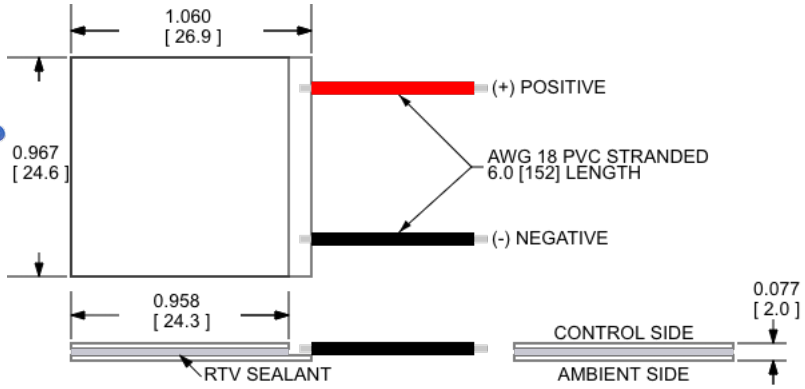
Features

- 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: Al_2O_3

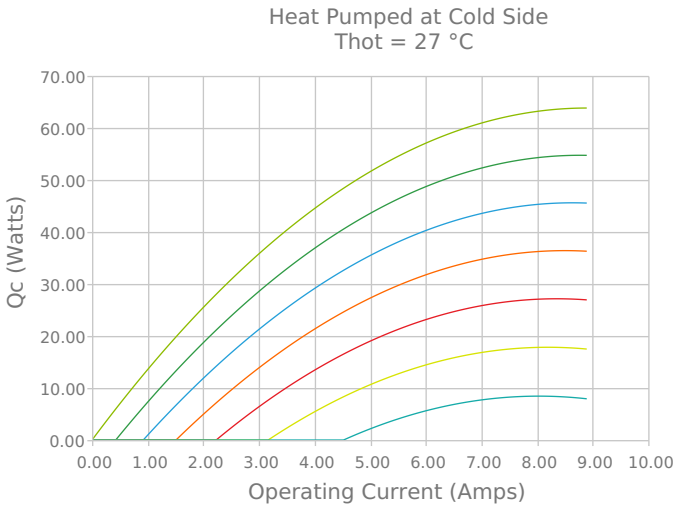
SOLDER CONSTRUCTION: 138°C, BiSn

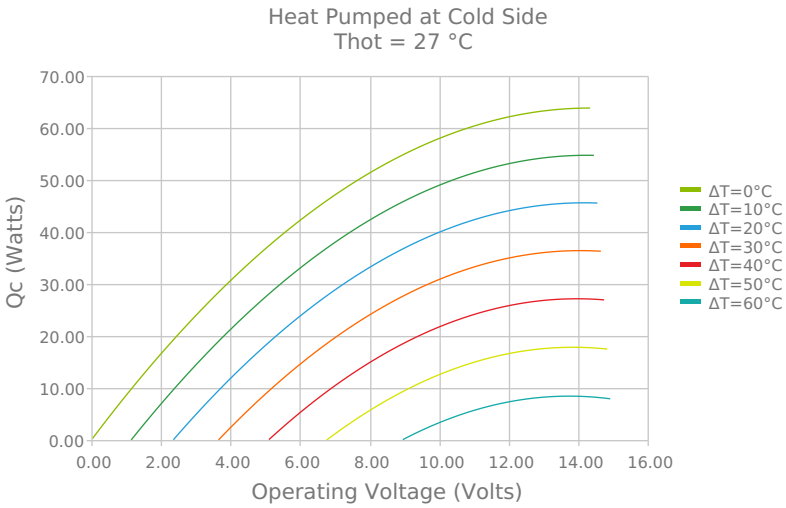
INCHES [MM]

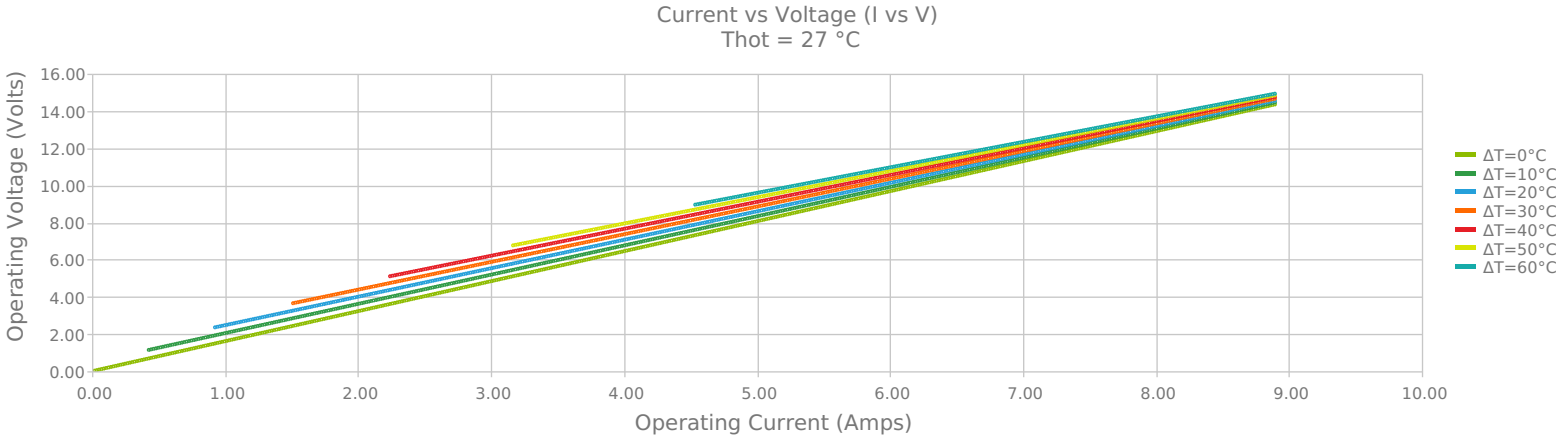
Note: Allow 0.020 in [0.5 mm] around perimeter of the thermoelectric cooler and lead wire attachment to accommodate sealant

Electrical and Thermal Performance

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.







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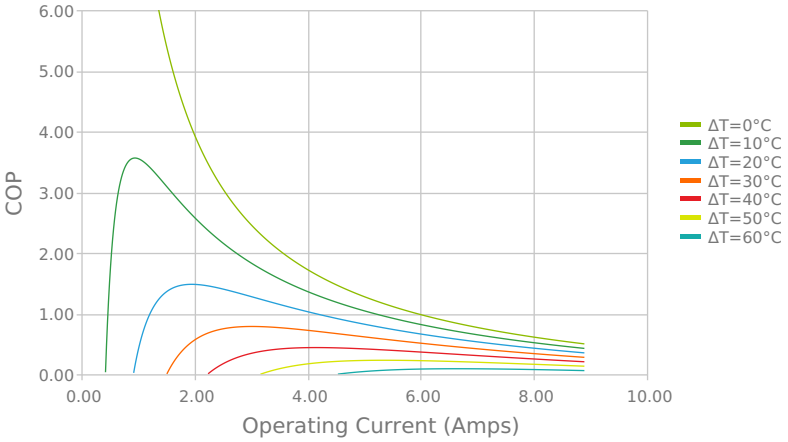
Coefficient of Performance (COP = Qc/Pin)
Thot = 27 °C



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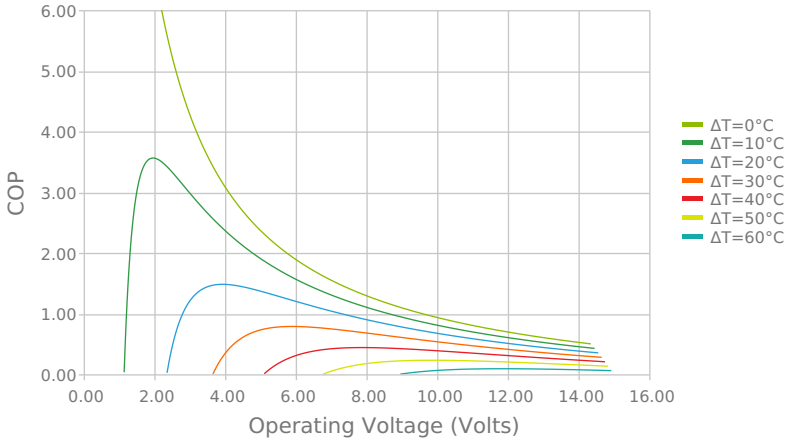
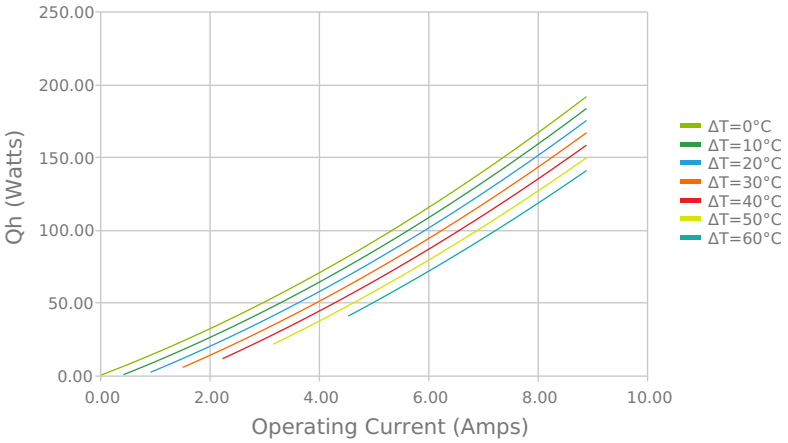


Total Heat Dissipated at Hot Side (Qh=Qc+Pin)
Thot = 27 °C



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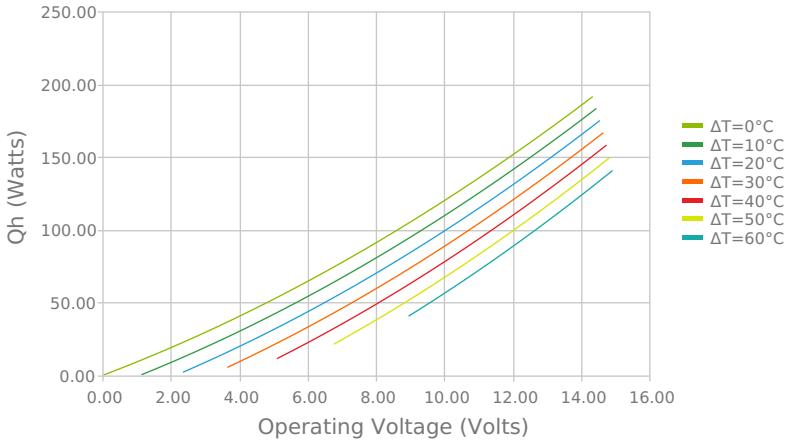
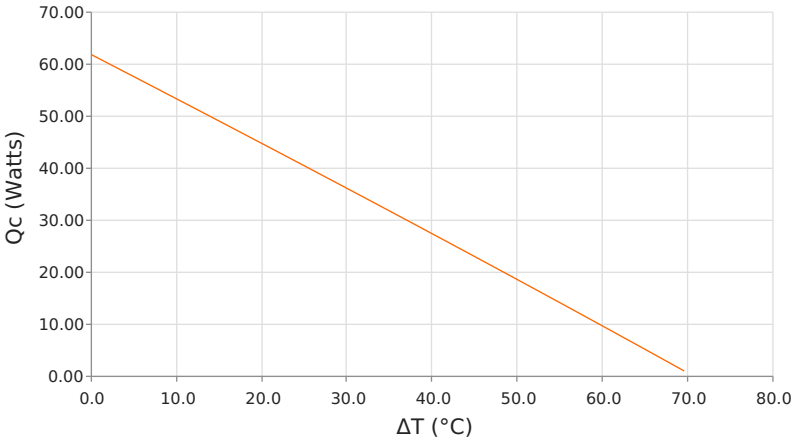


Heat Pumped at Cold Side (Qc)
Thot = 35 °C | Ioperating = 6.7 Amps



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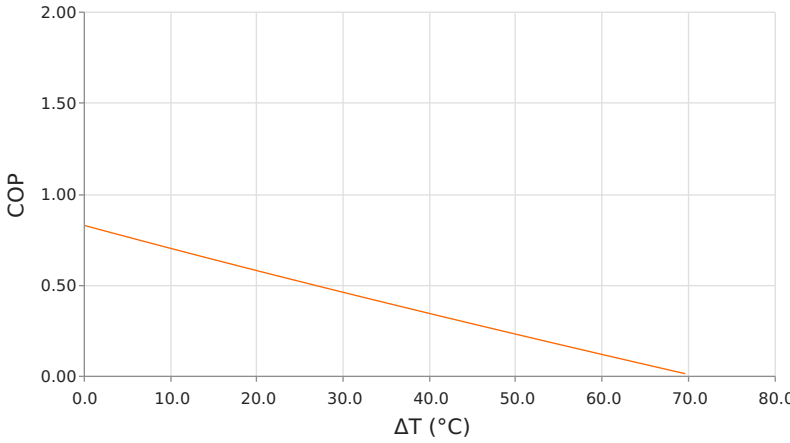

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Specifications

Hot Side Temperature	27.0 °C	35.0 °C	50.0 °C
Qcmax (ΔT = 0)	63.8 Watts	65.8 Watts	69.2 Watts
ΔTmax (Qc = 0)	68.9°C	71.8°C	77.0°C
Imax (I @ ΔTmax)	7.9 Amps	7.8 Amps	7.8 Amps
Vmax (V @ ΔTmax)	13.6 Volts	14.2 Volts	15.1 Volts
Module Resistance	1.61 Ohms	1.68 Ohms	1.81 Ohms
Max Operating Temperature	80 °C		
Weight	7.0 gram(s)		

Finishing Options

Suffix	Thickness	Flatness / Parallelism	Hot Face	Cold Face	Lead Length
TA	1.956 ±0.025 mm 0.077 ± 0.0010 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	Translucent or White	-60 to 204°C	Non-corrosive, silicone adhesive

Notes

Max operating temperature: 80°C
Do not exceed Imax or Vmax when operating module
Reference assembly guidelines for recommended installation

Revision: 00 Date: 06-01-2022

Print Date: 05-29-2025