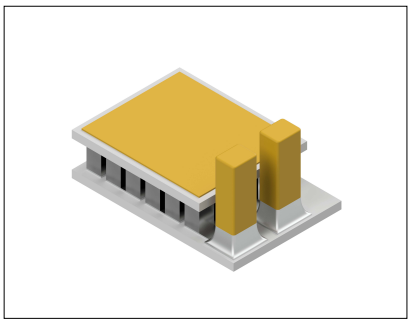
Single-stage Thermoelectric Cooler (N=13)

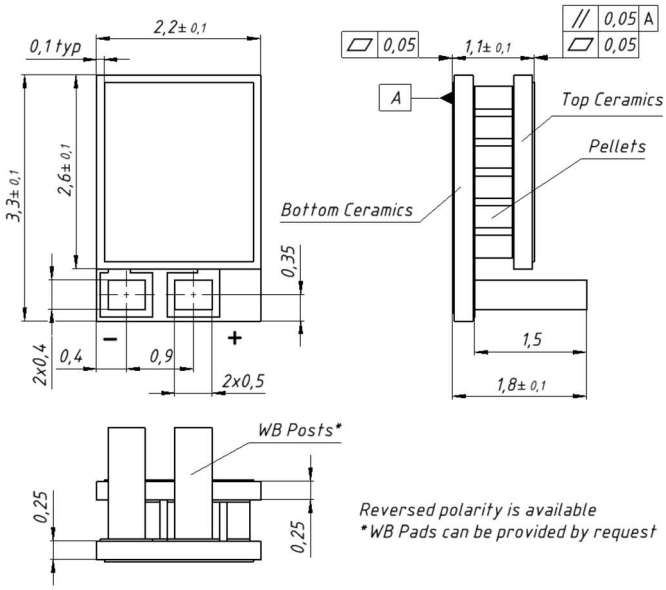
1MDD03-013-05/1/Z3/PO



ΔT_{max} K	Q_{max} W	I_{max} A	U_{max} V	ACR Ohm	H mm
75	0.90	0.96	1.60	1.33	1.1

Performance data is given for 300K, Vacuum

Dimensions



Available Options

A. TEC Assembly Solder

1. Lead-free Solder Sn-Sb (Tmelt = 230°C) - default
2. Lead-free Solder Au-Sn (Tmelt = 280°C) - available by request

B. TEC Ceramics

1. AlN 100% - default
2. Al_2O_3 100%
3. Mixed solution (AlN/Al_2O_3)

C. Ceramics Surface Options

1. Blank ceramics
2. Metallized (Au plating)
3. Metallized and pre-tinned

D. Thermistor (optional)

Can be mounted on the edge of TEC cold side.

Calibration is available by request.

Various thermistor solutions are available

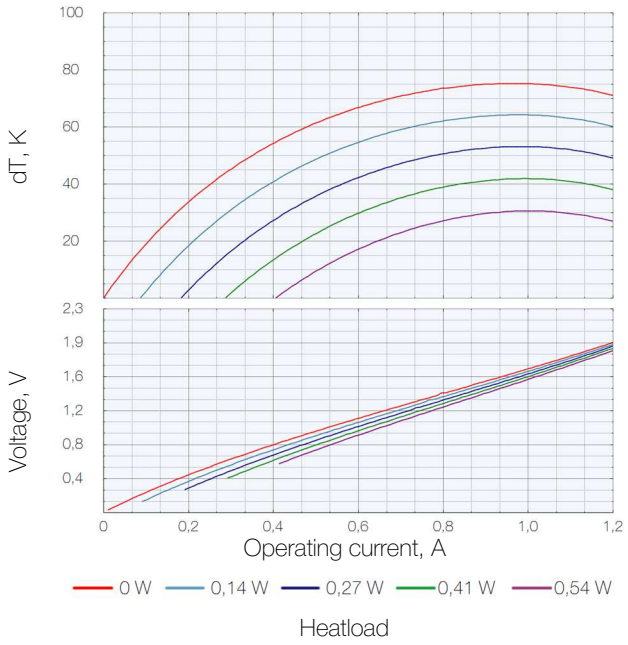
E. TEC Terminal Contacts

1. WB pads
2. WB posts

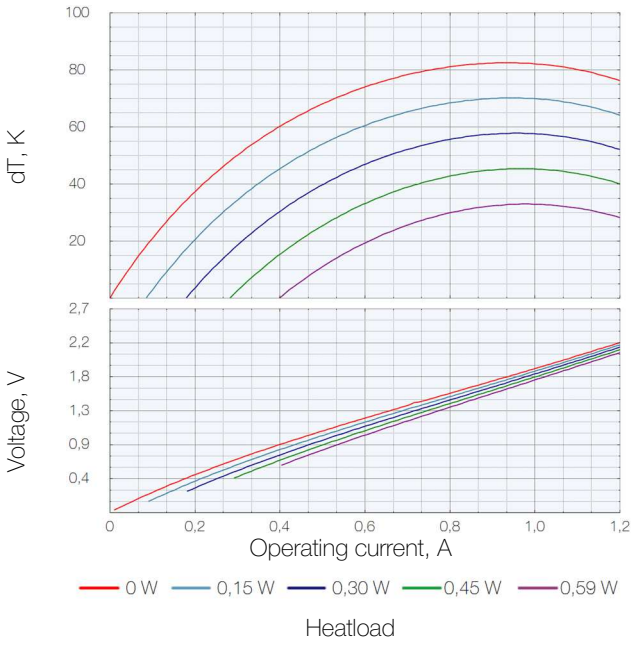
For more options please consult one of our application engineers.

Performance Curves — 1MDD03-013-05/1/Z3/PO

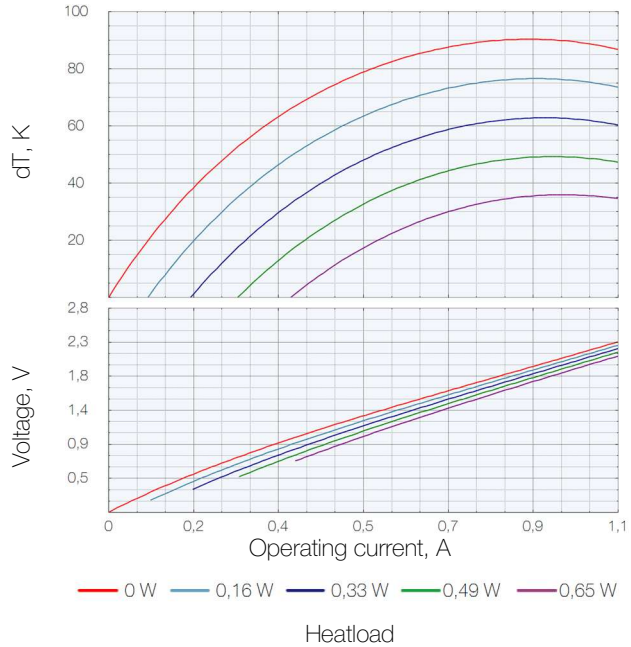
@27°C	ΔTmax K	Qmax W	Imax A	Umax V
Vacuum	75	0.90	0.96	1.60



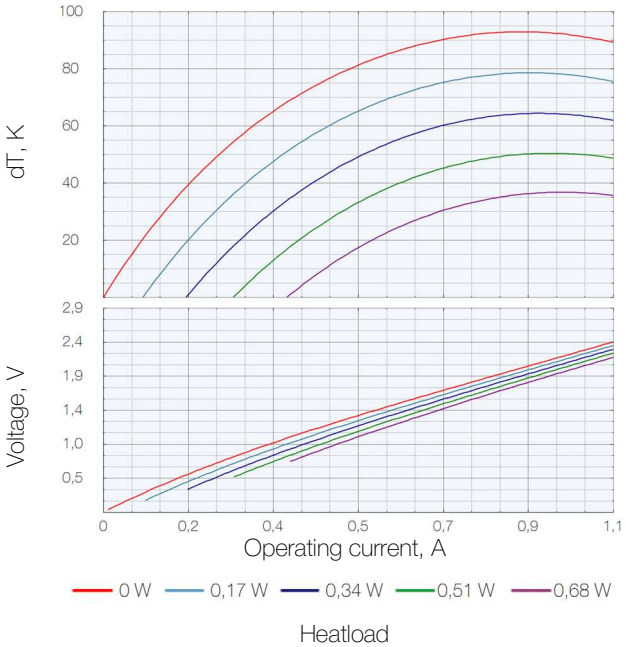
@50°C	ΔTmax K	Qmax W	Imax A	Umax V
Dry N2	82	0.99	0.93	1.77



@75°C	ΔTmax K	Qmax W	Imax A	Umax V
Dry N2	90	1.09	0.90	1.95



@85°C	ΔTmax K	Qmax W	Imax A	Umax V
Dry N2	93	1.14	0.89	2.01



Note: Performance curves are specified for optimal conditions where the TEC hot side is stabilized at ambient temperature. Module temperature does not include thermal resistance of heat sinks. For performance information in alternative environments, temperature ranges or specific heatsinks, please consult one of our application engineers.

Important notes

1. TEC performance in this datasheet is based on two standard conditions: vacuum at +27°C and dry nitrogen at +50°C. Performance varies in other environments.
2. TEC ACR and Umax values are affected by ambient temperature. They differ from datasheet values at other temperatures. ACR and Umax increase as ambient temperature rises.
3. TEC cooling capacity (Qmax) raises with ambient temperature.
4. Thermoelectric coolers have the best performance in the temperature range from near room up to +80..90ºC. The performance is lower at temperatures below 0ºC. TEC is not suitable to work at cryogenic temperatures.
5. A TEC's maximum performance does not always occur at its Imax or Umax. The real optimal mode may depend on operating conditions, temperature difference and heatload. The TEC performs optimally when operated at currents and voltages lower than the maximum values listed in the datasheet.
6. Rigid mounting of TECs to pure copper, aluminum, or nickel, or mounting objects made of these materials on the TEC cold side, is strongly discouraged. Materials with high thermal expansion coefficients (CTE) shorten TEC lifespan or cause damage during mounting, thermal shock, or temperature cycling. If using these materials is unavoidable, use indium-based soft solders or silicon-based glues with high elasticity.
7. KIMT thermoelectric coolers meet Telcordia GR-468 standards. A Reliability Report is available upon request. KIMT guarantees a minimum operating lifetime of 250,000 to 300,000 hours under normal conditions.
8. RoHS & REACH compliant

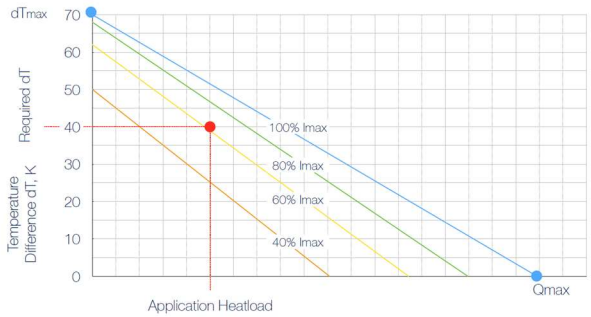


Fig. 1 - Understanding dT_{max} and Q_{max}

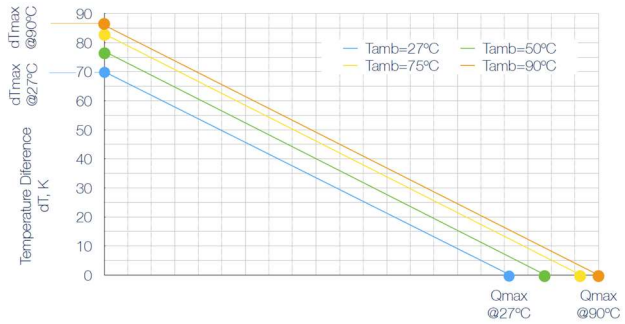


Fig. 2 - Single-stage TEC dT_{max} and Q_{max} example parameters at different ambient temperatures

Additional Options

For further details regarding thermoelectronic options, please access the provided link or utilize the QR code.

https://kimt-tech.com/support/thermoelectric-module-options/

Application Tips

For further details regarding Application Tips, please access the provided link or utilize the QR code.

https://kimt-tech.com/support/recommendations-for-use/