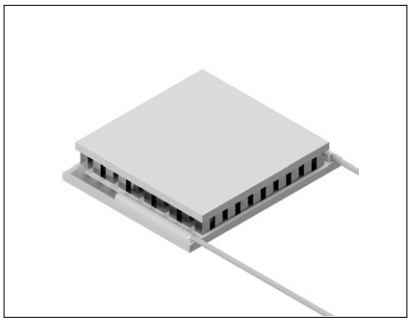
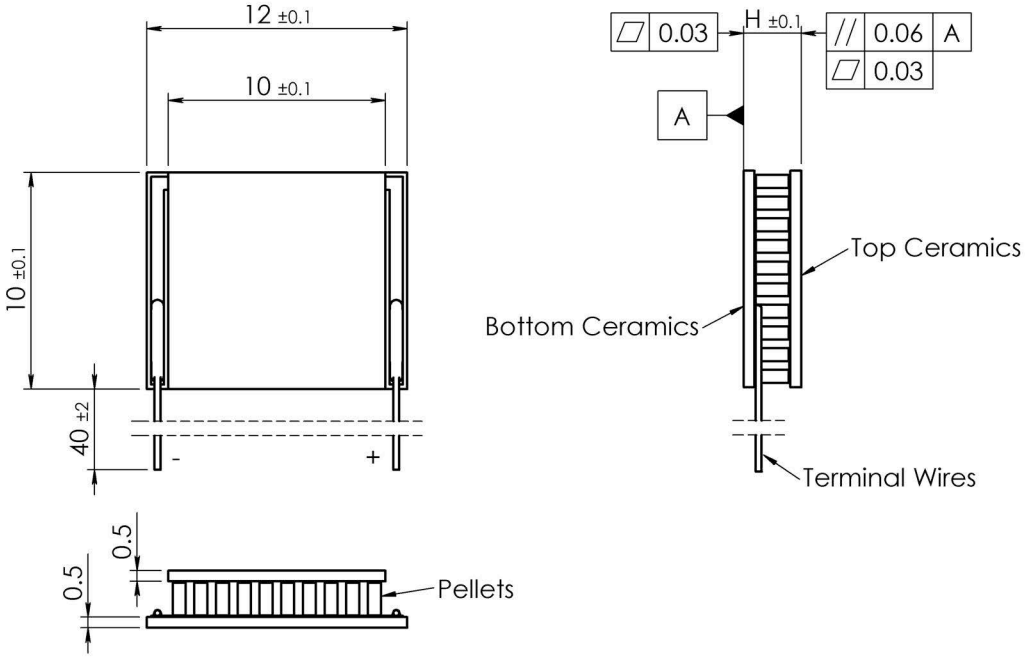
Performance Parameters — 1MC06-050-XX/Z2

Type	ΔT_{max} K	Q_{max} W	I_{max} A	U_{max} V	AC R Ohm	H mm
1MC06-050-xx/Z2 (N=50)						
1MC06-050-03/Z2	70	20.8	5.4	6.4	0.91	1.4
1MC06-050-05/Z2	71	13.3	3.4		1.44	1.6
1MC06-050-08/Z2	73	8.6	2.2		2.25	1.9
1MC06-050-10/Z2	74	6.9	1.7		2.78	2.1
1MC06-050-12/Z2	74	5.8	1.5		3.31	2.3
1MC06-050-15/Z2	74	4.7	1.2		4.11	2.6

Performance data is given for 300K, vacuum



Dimensions



Available options

A. TEC Assembly:

* 1. Solder SnSb (T_{melt}=230°C)

2. Solder AuSn (T_{melt}=280°C)

B. Ceramics:

* 1. Aluminum Nitride (AlN)

2. Pure Al_2O_3(100%)

3. Alumina (Al_2O_3- 96%)

* - *used by default*

C. Ceramics Surface Options:

1. Blank ceramics (not metallized)
2. Metallized (Au plating)
3. Metallized and pre-tinned with:
   - 3.1 Solder 117 (In-Sn, T_{melt} =117°C)
   - 3.2 Solder 138 (Sn-Bi, T_{melt} = 138°C)
   - 3.3 Solder 143 (In-Ag, T_{melt} = 143°C)
   - 3.4 Solder 157 (In, T_{melt} = 157°C)
   - 3.5 Solder 183 (Pb-Sn, T_{melt} =183°C)
   - 3.6 Optional (specified by Customer)

D. Thermistor (optional)

Can be mounted to cold side ceramics edge. Calibration is available by request.

E. Terminal contacts

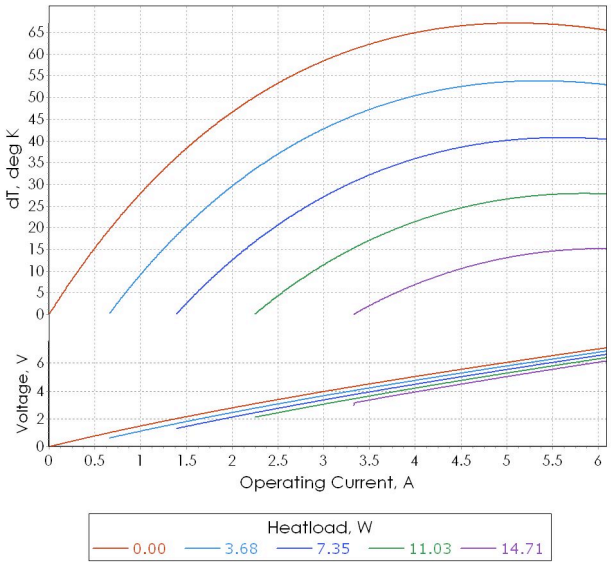
1. Blank, tinned Copper
2. Insulated Wires
3. Insulated, color coded

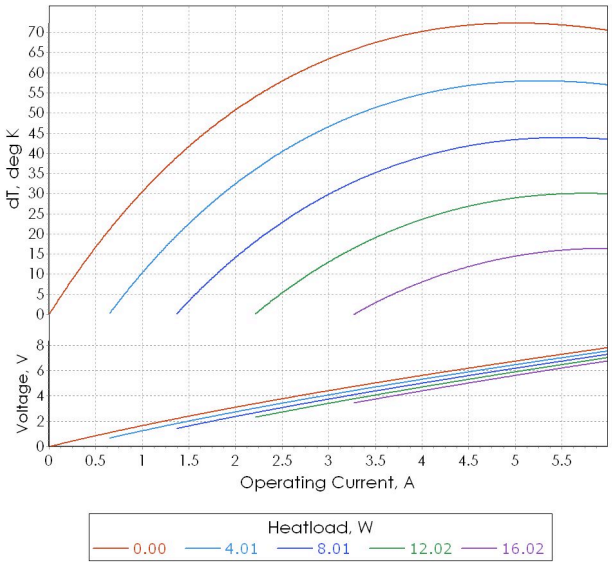
For more options please consult one of our application engineers.

Performance Curves — 1MC06-050-03/Z2

@ 27°C, Vacuum	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-03/Z2	70	20.8	5.4	6.4

@50°C, N2	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-03/Z2	74	23.1	5.3	7.1



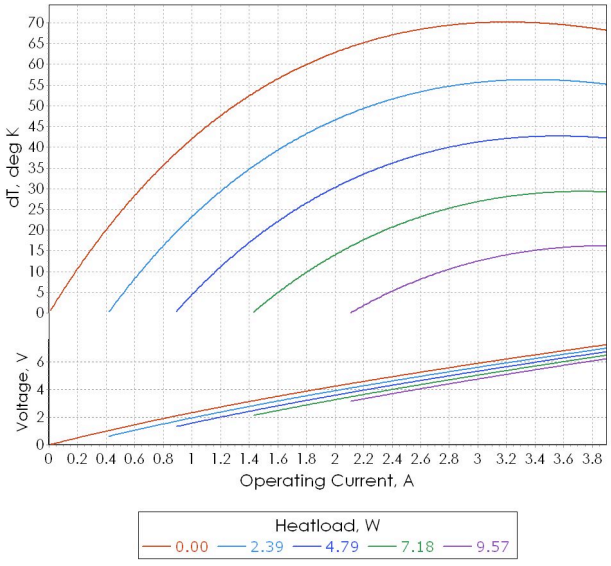


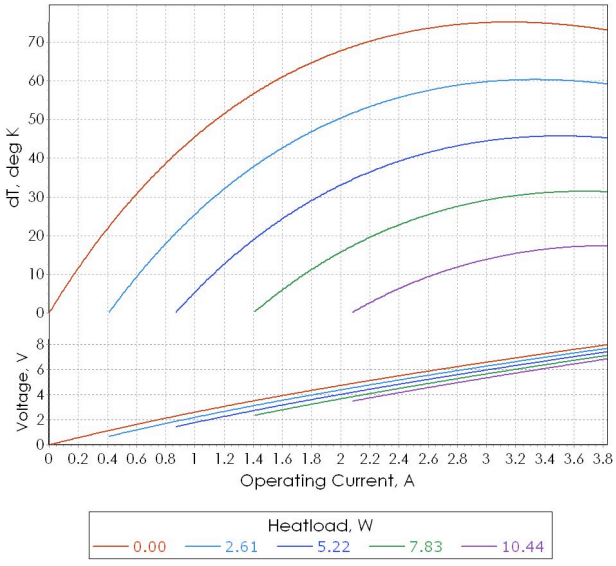
Note: Performance curves are specified for optimal conditions where the TEC hot side is stabilized at ambient temperature. Module temperature does not include thermal resistance of heat sinks. For performance information in alternative environments, temperature ranges or specific heatsinks, please consult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

Performance Curves — 1MC06-050-05/Z2

@ 27°C, Vacuum	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-05/Z2	71	13.3	3.4	6.4

@50°C, N2	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-05/Z2	77	14.6	3.3	7.1



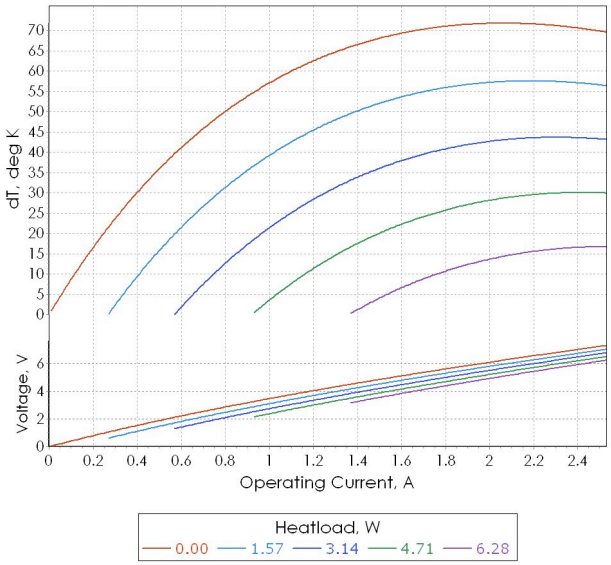


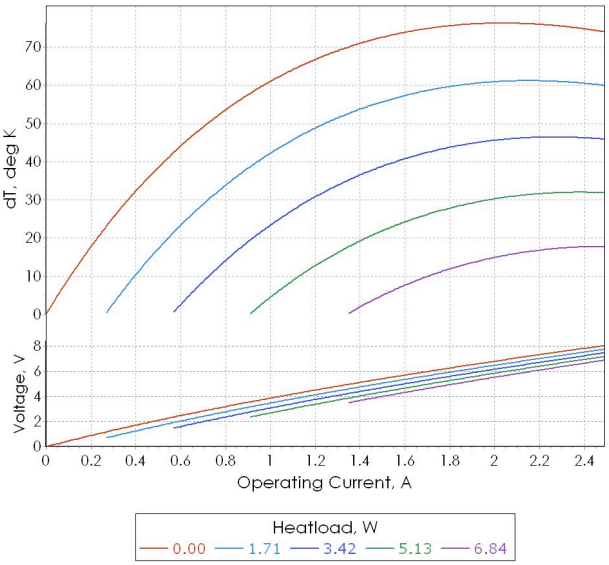
Note: Performance curves are specified for optimal conditions where the TEC hot side is stabilized at ambient temperature. Module temperature does not include thermal resistance of heat sinks. For performance information in alternative environments, temperature ranges or specific heatsinks, please consult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

Performance Curves — 1MC06-050-08/Z2

@ 27°C, Vacuum	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-08/Z2	73	8.6	2.2	6.4

@50°C, N2	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-08/Z2	78	9.5	2.1	7.2



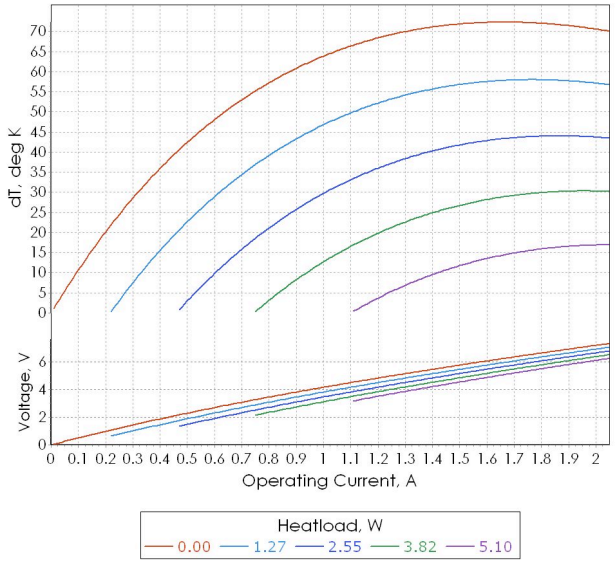


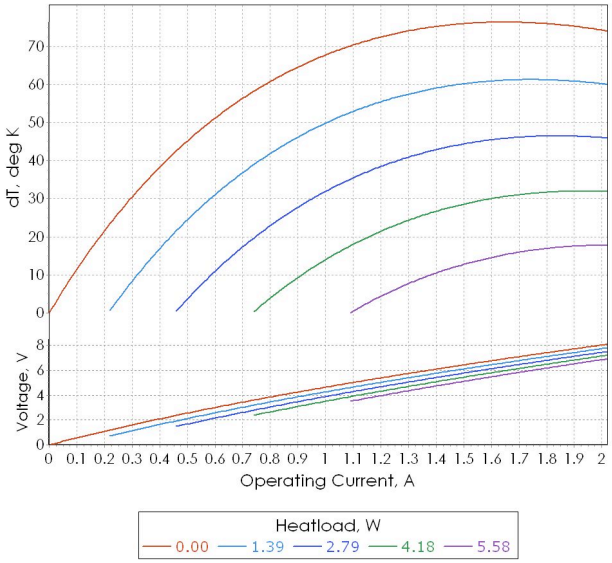
Note: Performance curves are specified for optimal conditions where the TEC hot side is stabilized at ambient temperature. Module temperature does not include thermal resistance of heat sinks. For performance information in alternative environments, temperature ranges or specific heatsinks, please consult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

Performance Curves — 1MC06-050-10/Z2

@ 27°C, Vacuum	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-10/Z2	74	6.9	1.7	6.4

@50°C, N2	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-10/Z2	78	7.6	1.7	7.2



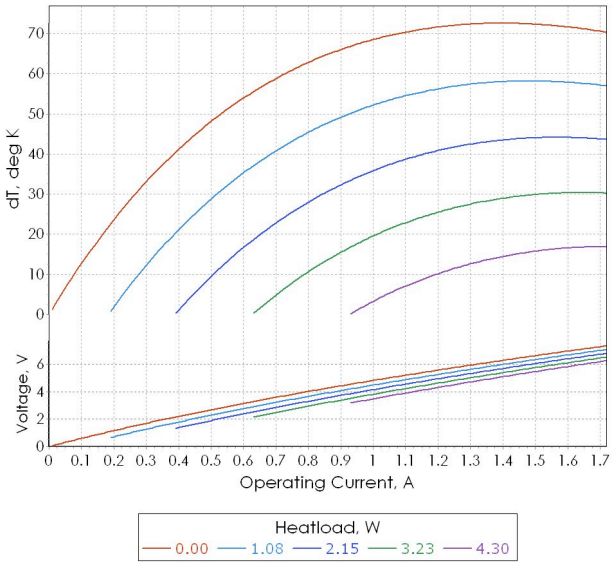


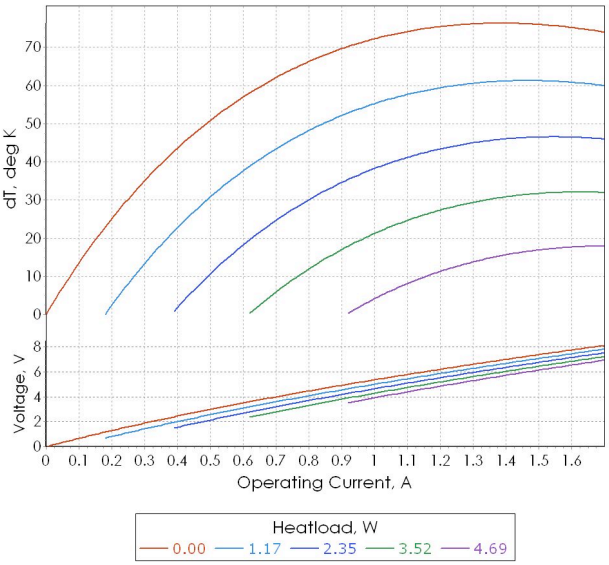
Note: Performance curves are specified for optimal conditions where the TEC hot side is stabilized at ambient temperature. Module temperature does not include thermal resistance of heat sinks. For performance information in alternative environments, temperature ranges or specific heatsinks, please consult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

Performance Curves — 1MC06-050-12/Z2

@ 27°C, Vacuum	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-12/Z2	74	5.8	1.5	6.4

@50°C, N2	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-12/Z2	78	6.4	1.5	7.2



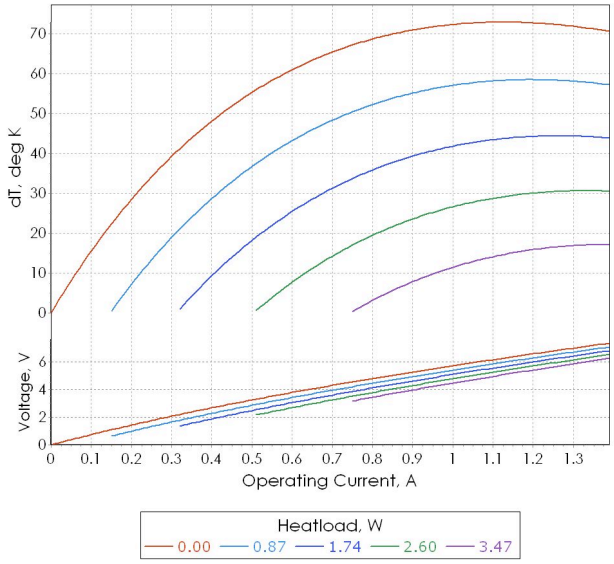


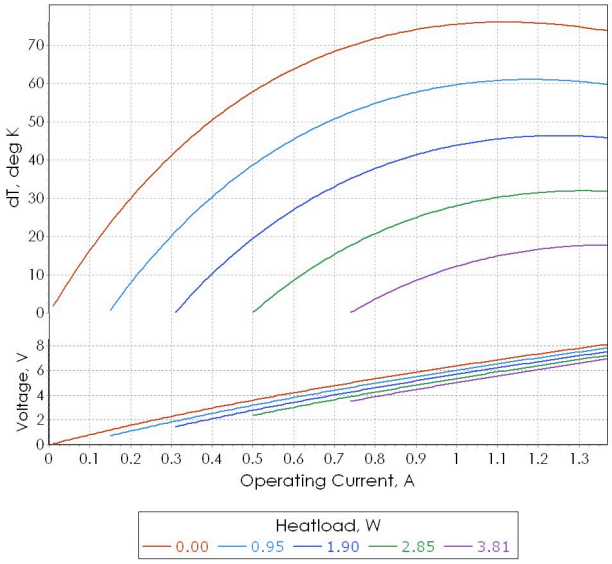
Note: Performance curves are specified for optimal conditions where the TEC hot side is stabilized at ambient temperature. Module temperature does not include thermal resistance of heat sinks. For performance information in alternative environments, temperature ranges or specific heatsinks, please consult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

Performance Curves — 1MC06-050-15/Z2

@ 27°C, Vacuum	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-15/Z2	74	4.7	1.2	6.7

@50°C, N2	ΔTmax K	Qmax W	Imax A	Umax V
1MC06-050-15/Z2	77	5.2	1.2	7.2





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

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/