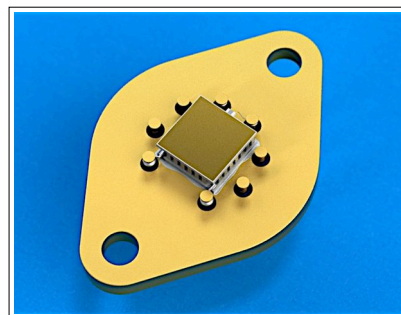


Performance Parameters

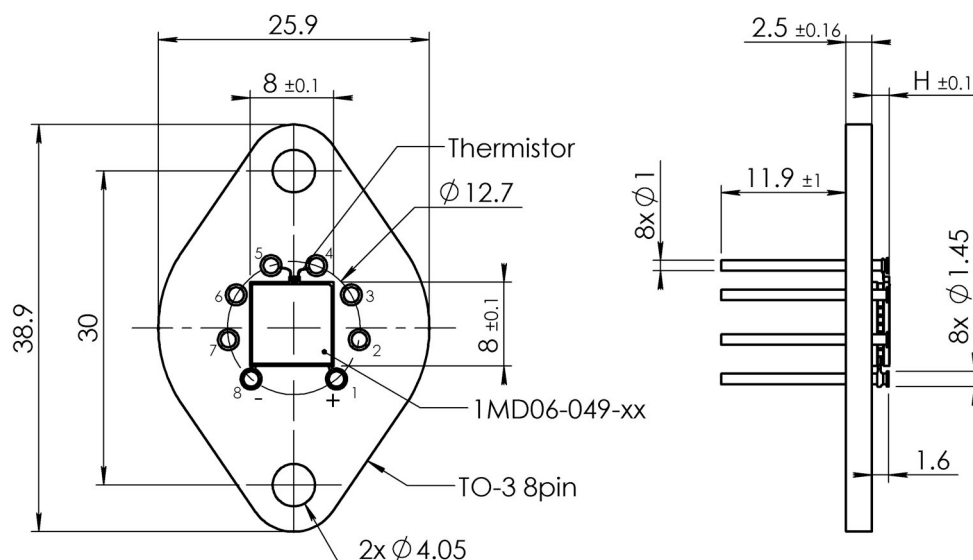
TO308.1MD06049xx

Mounted TEC Type	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V	R_t K/W	H mm
1MD06-049-xx (n=49)						
1MD06-049-05	68	9.6	3.0	5.9	0.41	1.6
1MD06-049-08	68	6.8	2.1			1.9
1MD06-049-10	69	5.6	1.8			2.1
1MD06-049-12	70	4.8	1.5			2.3
1MD06-049-15	71	4.0	1.2			2.6

Performance data is specified at 300K, vacuum (thermal resistance incl.)



Dimensions



Manufacturing options

A. Header material:

CRS - Cold Rolled Steel

D. TEC Ceramics Material:

1. Pure Al_2O_3 (100%) - used by default
2. Alumina (Al_2O_3 - 96%)
3. Aluminum Nitride (AlN)

F. Thermistor (optional)

Can be mounted to cold side ceramics edge.

B. Header surface finish:

Au plating (base and pins)

E. TEC Cold Side Finish:

1. Blank ceramics (not metallized)
 2. Metallized (Au plating)
 3. Metallized and pre-tinned
- (various solder for pre-tinning available)

G. Thermistor mounting:

Epoxy gluing

C. TEC to Header mounting:

 Solder 206 ($T_{\text{melt}} = 206^\circ\text{C}$,
Sn-Ag-In-Cu, flux-free process)

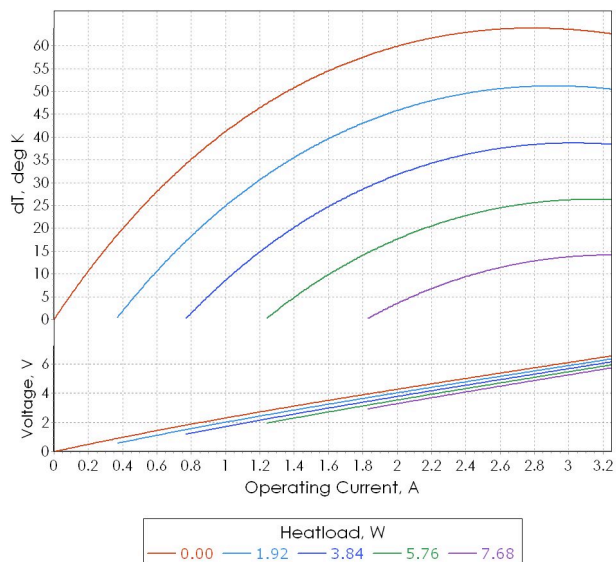
H. Pinout configuration:

the drawing contains standard pinout, can be revised by request)

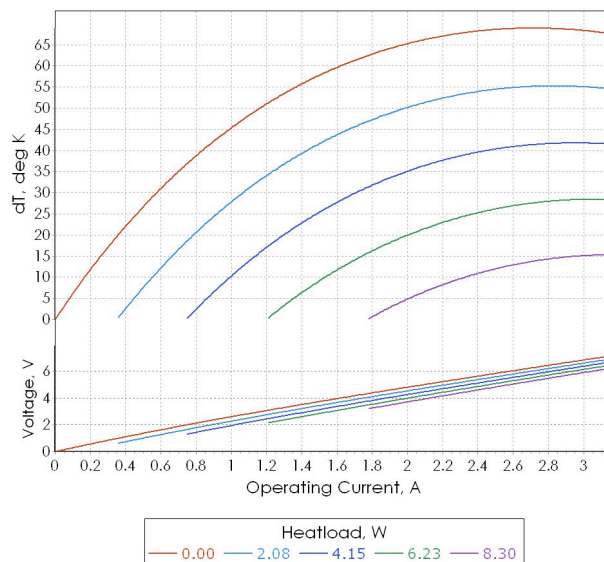
Performance Data

1MD06-049-05

@ 27°C, Vacuum	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-05	68	9.6	3.1	5.9



@50°C, N2	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-05	69	10.4	3.1	6.5

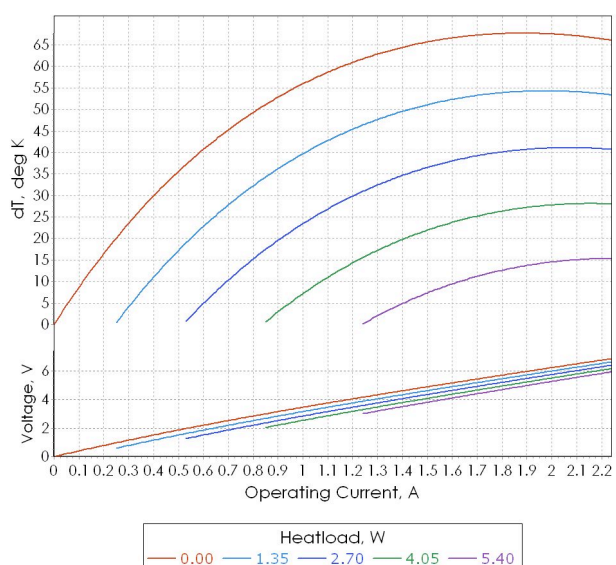


Note: Performance data is specified at optimal heatsink. TO-3 Header thermal resistance is included into estimations. Use TECcad Software for estimations under different conditions or contact RMT Ltd or it's branches directly.

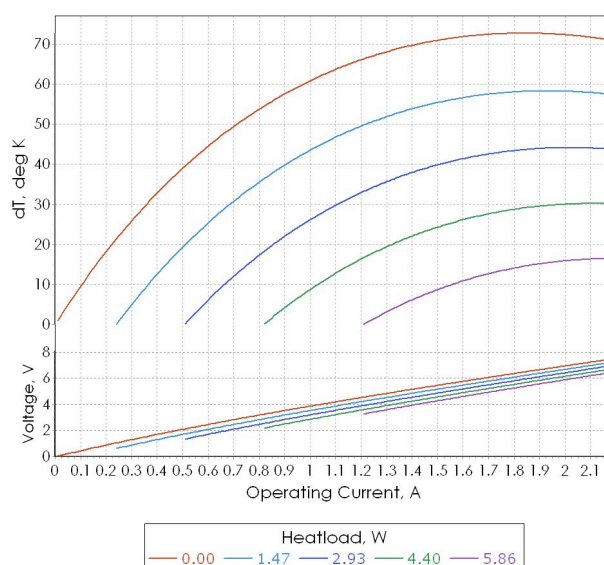
Performance Data

1MD06-049-08

@ 27°C, Vacuum	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-08	68	6.8	2.1	5.9



@50°C, N2	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-08	73	7.3	2.1	6.5

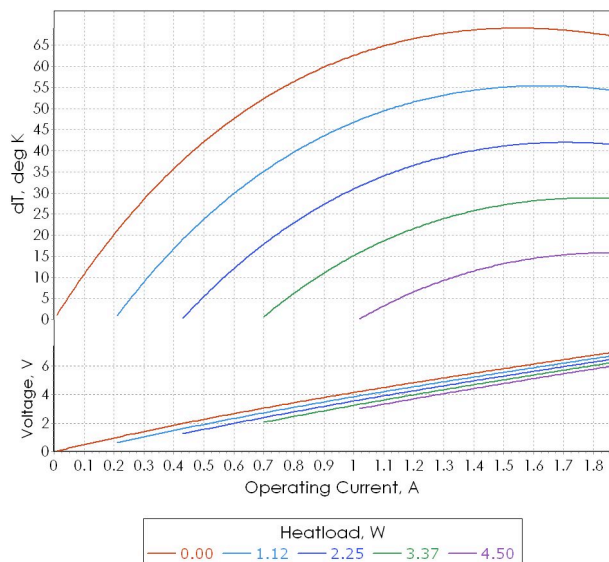


Note: Performance data is specified at optimal heatsink. TO-3 Header thermal resistance is included into estimations. Use TECcad Software for estimations under different conditions.

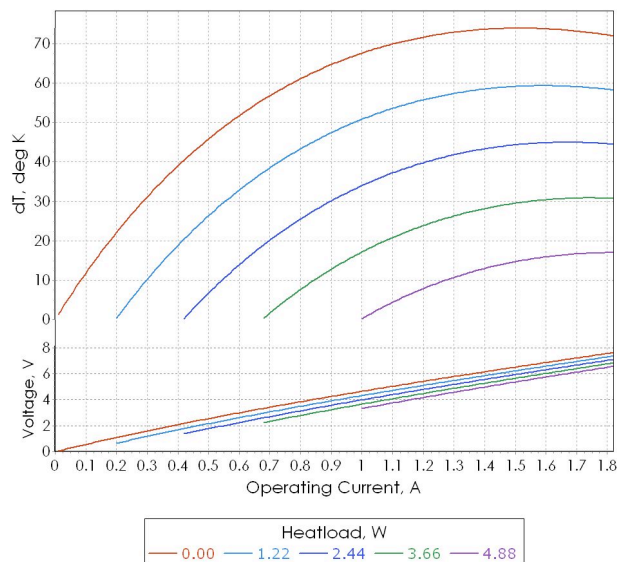
Performance Data

1MD06-049-10

@ 27°C, Vacuum	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-10	69	5.6	1.8	5.9



@50°C, N2	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-10	74	6.1	1.8	6.5

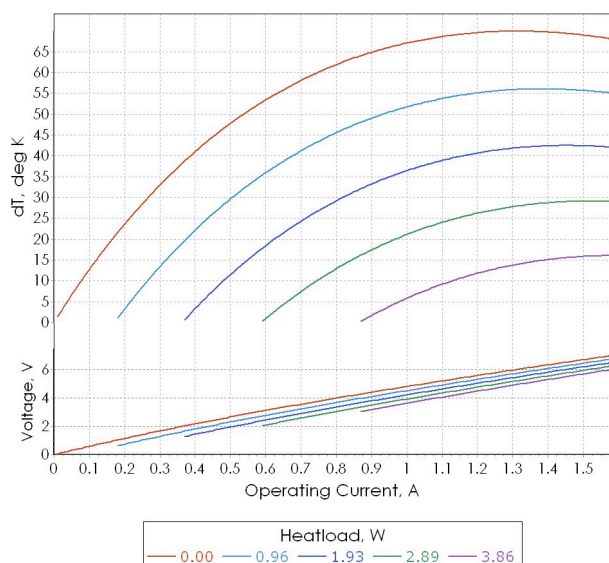


Note: Performance data is specified at optimal heatsink. TO-3 Header thermal resistance is included into estimations. Use TECcad Software for estimations under different conditions or contact RMT Ltd or it's branches directly.

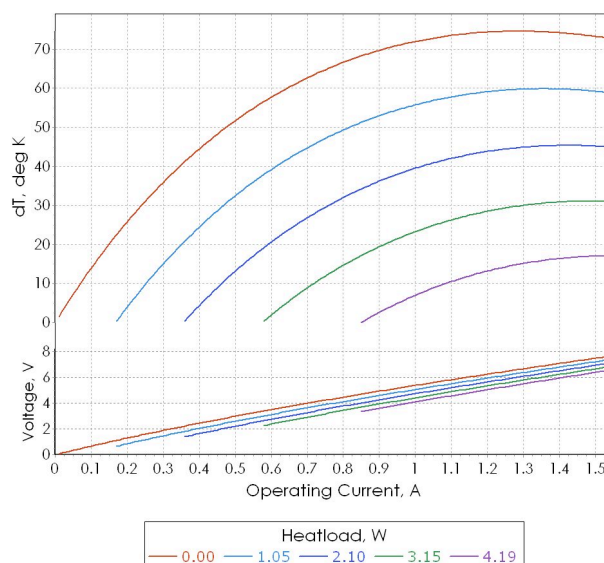
Performance Data

1MD06-049-12

@ 27°C, Vacuum	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-12	70	4.82	1.5	5.9



@50°C, N2	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-12	75	5.24	1.5	6.5

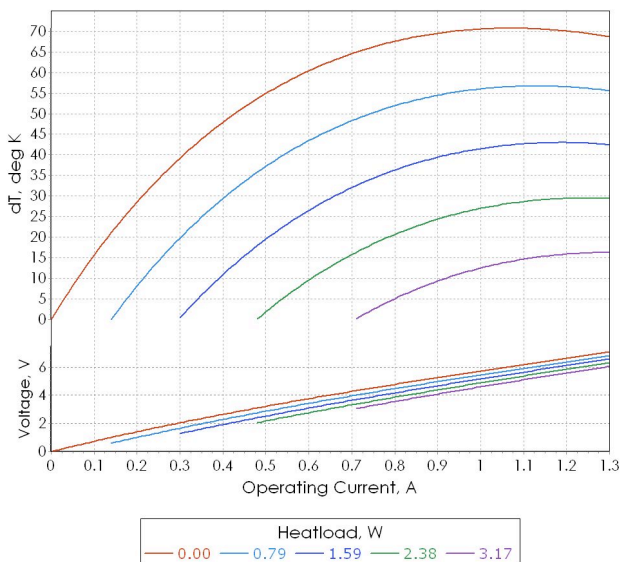


Note: Performance data is specified at optimal heatsink. TO-3 Header thermal resistance is included into estimations. Use TECcad Software for estimations under different conditions.

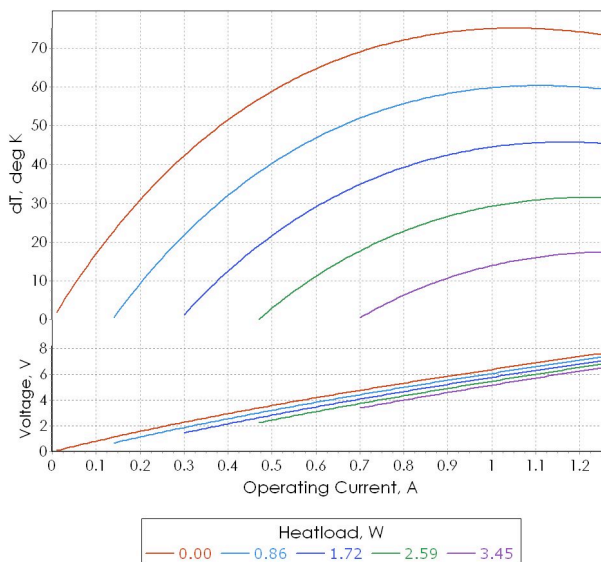
Performance Data

1MD06-049-15

@ 27°C, Vacuum	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-15	71	4.0	1.2	5.9



@50°C, N2	ΔT_{\max} K	Q_{\max} W	I_{\max} A	U_{\max} V
1MD06-049-15	75	4.3	1.2	6.5



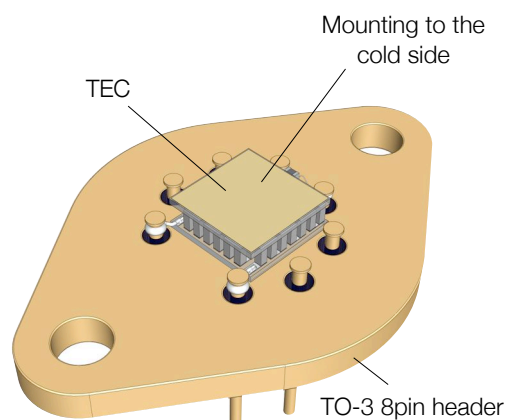
Note: Performance data is specified at optimal heatsink. TO-3 Header thermal resistance is included into estimations. Use TECad Software for estimations under different conditions or contact RMT Ltd or it's branches directly.

Application Tips

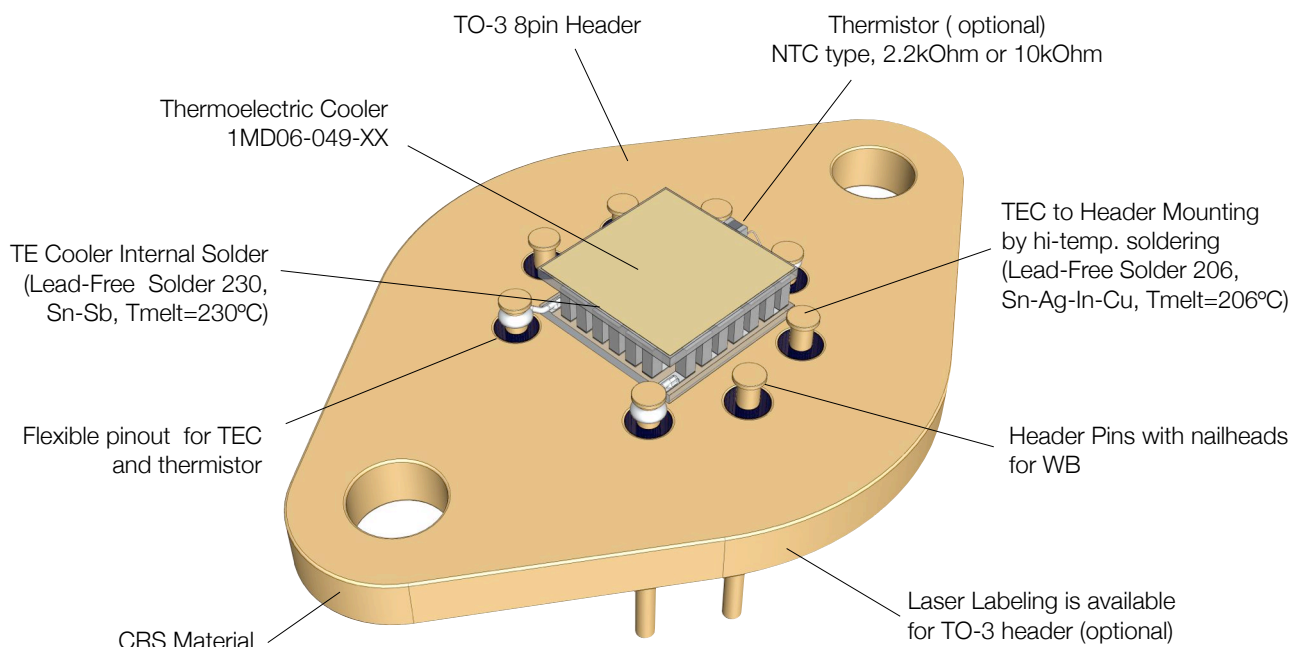
- Never heat up the sub-assembly more than 200°C.
- Never use the sub-assembly without an attached heat sink. Header is NOT a heatsink by itself.
- Connect TE cooler to DC power supply according to specified polarity.
- Do not apply current/voltage higher than specified max values

Mounting to TEC cold side

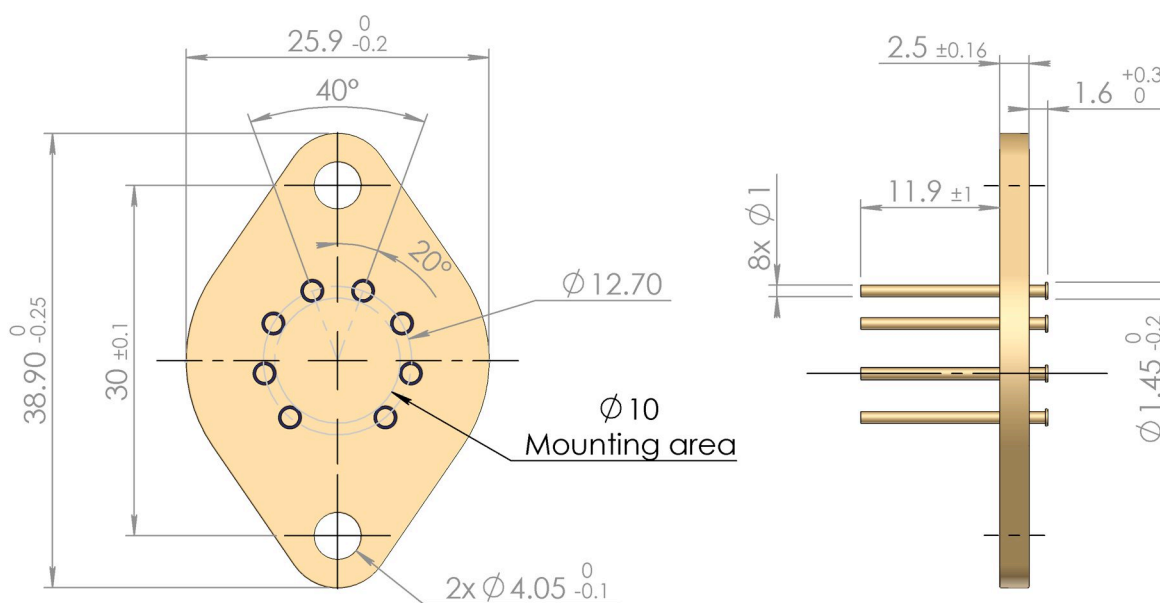
- Soldering of object to be cooled.
Method suitable for a TE module with the metallized cold side (Ordering Options. Item E). Soldering requires careful procedures:
 - Never overheat TEC (Application Tips. Item 1).
 - Use solder with melting point less than 200°C.
- Gluing of object to be cooled.
Method available by glues with good thermoconductive properties. Not recommended for high vacuum applications and long operations at high temperature.



Sub-assembly Overview



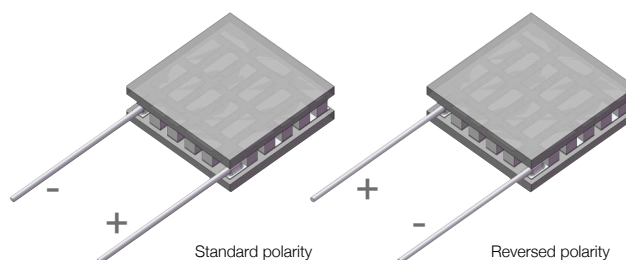
TO-3 8pin Header Drawing



Additional Options for TEC

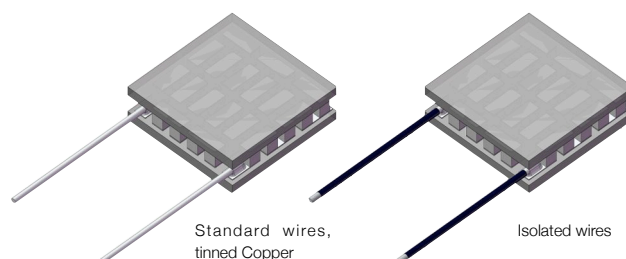
TEC Polarity

TEC Polarity can be modified by request. The specified polarity in this datasheet is typical. It can be reversed in accordance to Customer application requirements.



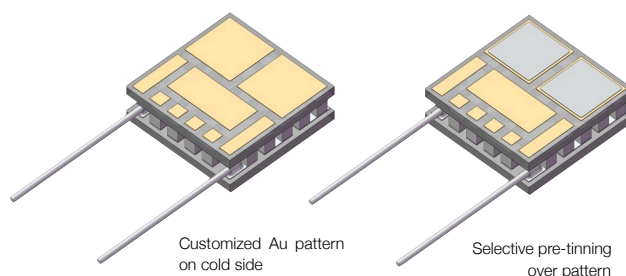
Terminal Wires Options

The wires are of tinned Copper, blank (not isolated) by default. Various options for isolated wires are available by request. The available solutions include isolated wires, isolated color-coded wires, flexible multicore wires and more.



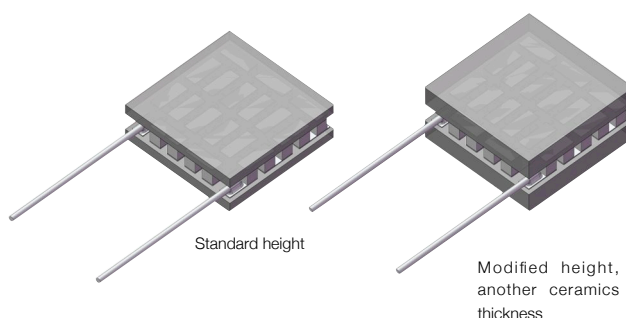
Customized Au Patterns

Customized Au patterns on thermoelectric cooler cold side are available by request. Selective Pre-tinning over pattern is also available. Please, contact RMT Ltd for additional information about customized Au patterns requirements.



TEC Height modification

Standard TEC height can be modified without performance changes by using ceramics of different thickness. Standard thermoelectric cooler height (specified in the datasheet) may be modified in a range -0.5..+1.0mm for single-stage TEC by request.



Contacts

HEAD OFFICE

46 Warshavskoe shosse. Moscow 115230 Russia

Tel: +7-499-678-20-82

Fax: +7-499-678-20-83

E-mail: info@rmtltd.ru

CHINA

翰銓科技香港有限公司

Hantech Technology

RM566,5/F,Hanjing Mansion,Nanshan District,Shenzhen,China

Tel:+86-0755-86215941

Fax:+86-0755-86053039

Cell: 13760105325

E-mail: bob.han@protecltd.com

XIAMEN ZIBO OPTOELECTRONIC CO. LTD.

Room 120, Chuanye Building Chuanye Park,

Xiamen Torch Hi-Tech Industrial Development Zone

Xiamen, China , 361006

Tel: +86-592-5654050

Fax: +86-13606026187

E-mail: wentyliu@foxmail.com (Wenty Liu)

KOREA

Sunflower Energy

1F, 665-6, Pungdeokcheon-dong, Suji-gu,

Yongin-si, Gyeonggi-do, Korea

Tel: +82 312767992

Fax: +82 312767993

Web site: <http://www.sunfl.co.kr>

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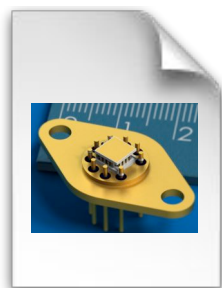
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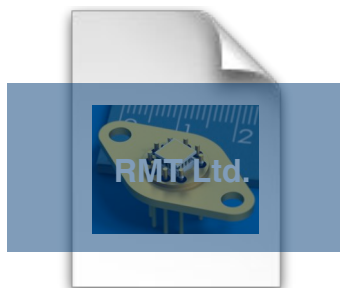
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