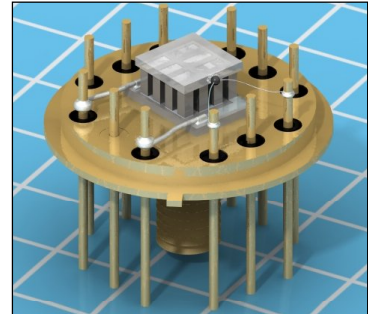


Thermoelectric Sub-mount Datasheet RMT Ltd.

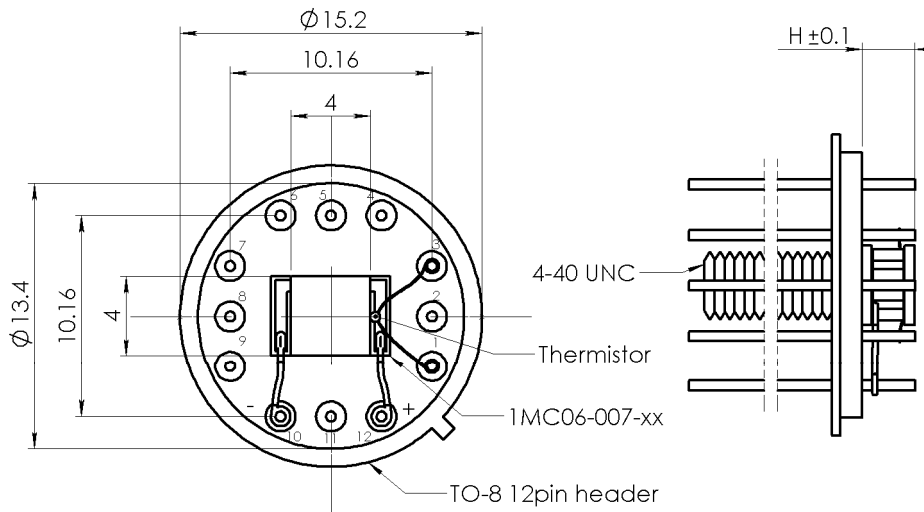
Performance parameters TO812.1MC06008xx

Mounted TEC Type	DT _{max} , K	Q _{max} , W	I _{max} , A	U _{max} , V	R _t , K/W	H, mm
1MC06-008-05	65	1.60	2.8	0.94	2.24	1.6
1MC06-008-08	68	1.09	1.9			1.9
1MC06-008-10	69	0.90	1.5			2.1
1MC06-008-12	70	0.77	1.3			2.3
1MC06-008-15	70	0.63	1.1			2.6

Performance data are given for Thot=300K vacuum



Technical Drawing



Ordering Options

A. Header material

Kovar

B. Header finish

1. Gold plating
2. Ni plating

C. TEC Mounting

1. Soldering
 - 1.1 Solder 117 (InSn, $T_{melt}=117^{\circ}\text{C}$)
 - 1.2 Solder 138 (SnBi, $T_{melt}=138^{\circ}\text{C}$)
 - 1.3 Solder 183 (PbSn, $T_{melt}=183^{\circ}\text{C}$)
 - 1.4 Solder 199 (SnZn, $T_{melt}=199^{\circ}\text{C}$)
2. Epoxy gluing

D. TEC Leads Connection

Solder 230 (SnSb, $T_{melt}=230^{\circ}\text{C}$)

E. TEC Ceramics

1. Pure Al_2O_3 (100%) - standard
2. Alumina (Al_2O_3 - 96%) - optional
3. Aluminum Nitride (AlN) - optional

F. TEC Cold Side Finish

1. Clear ceramics
2. Metallized
 - 2.1 Ni / Sn(Bi)
 - 2.2 Gold plating
3. Metallized and Pre-tinned
 - 3.1 Solder 94 (PbSnBi, $T_{melt}=94^{\circ}\text{C}$)
 - 3.2 Solder 117 (InSn, $T_{melt}=117^{\circ}\text{C}$)
 - 3.3 Solder 138 (SnBi, $T_{melt}=138^{\circ}\text{C}$)
 - 3.4 Solder 183 (PbSn, $T_{melt}=183^{\circ}\text{C}$)
 - 3.5 Solder 199 (SnZn, $T_{melt}=199^{\circ}\text{C}$)

G. Thermistor (optional)

NTC thermistor type TB
Resistance nominal
1. 2.2 kOhm@20C
2. 10.0 kOhm@20C

Individual calibration is available in -65..+85°C

H. Thermistor Mounting

Epoxy Gluing

I. Thermistor Leads Connect

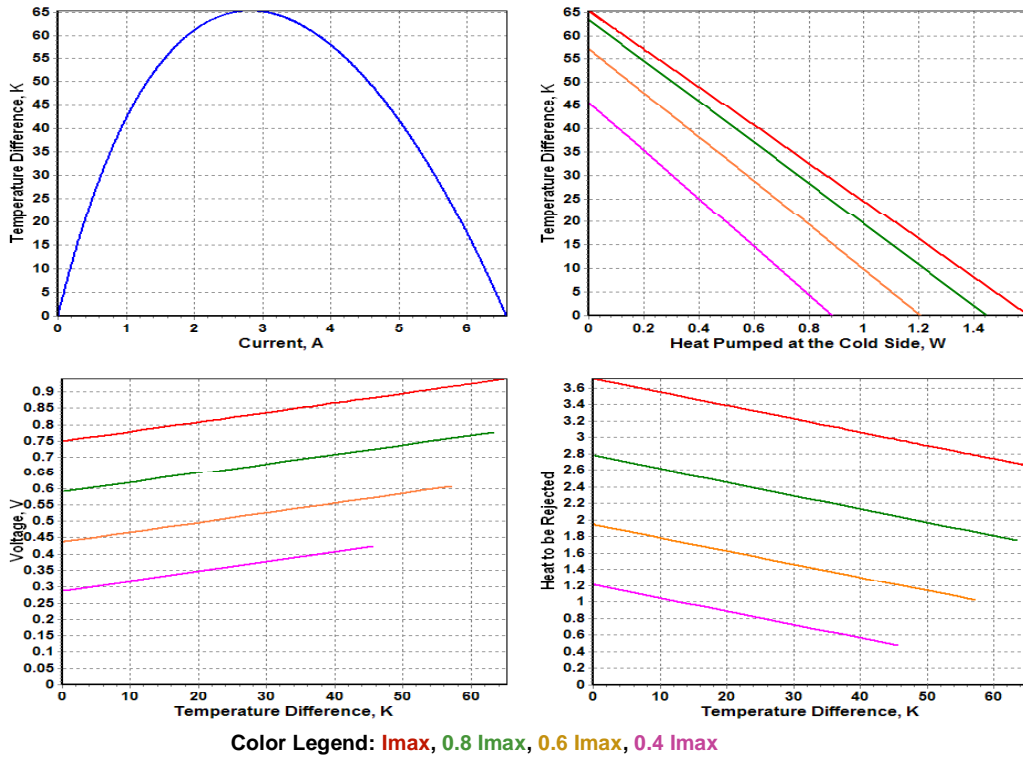
Solder 230 (SnSb, $T_{melt}=230^{\circ}\text{C}$)

J. Pinout configuration

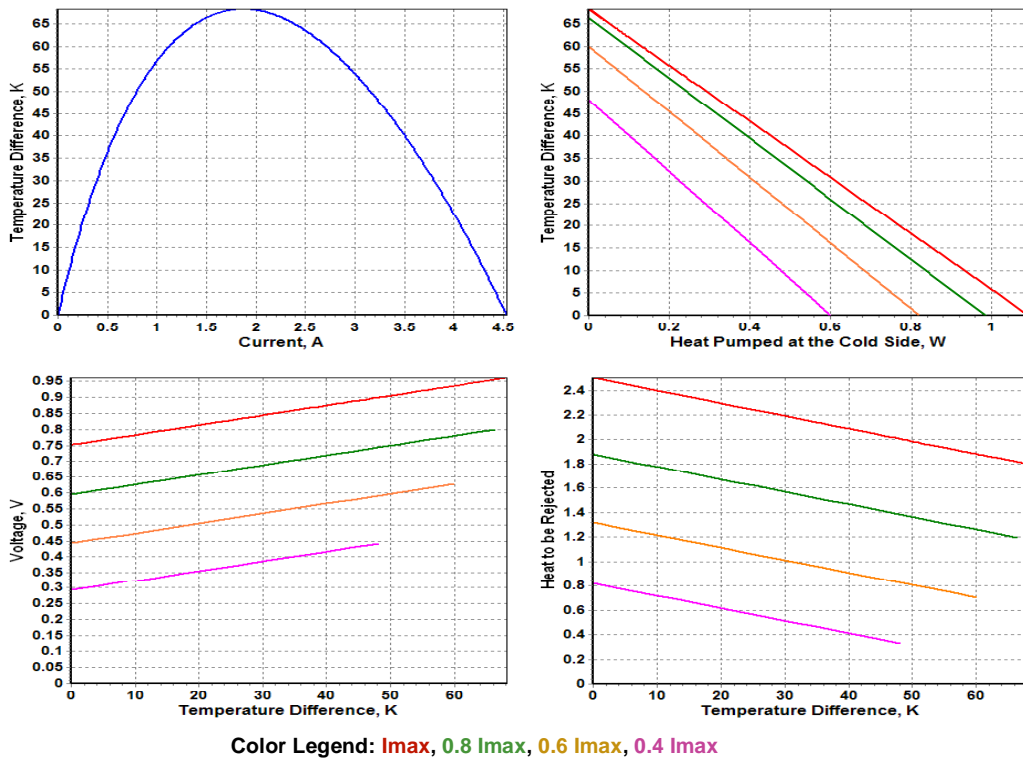
Can be specified by customer

Thermoelectric Sub-mount Datasheet RMT Ltd.

TO812.1MC0600805 Standard Performance Plots



TO812.1MC0600808 Standard Performance Plots

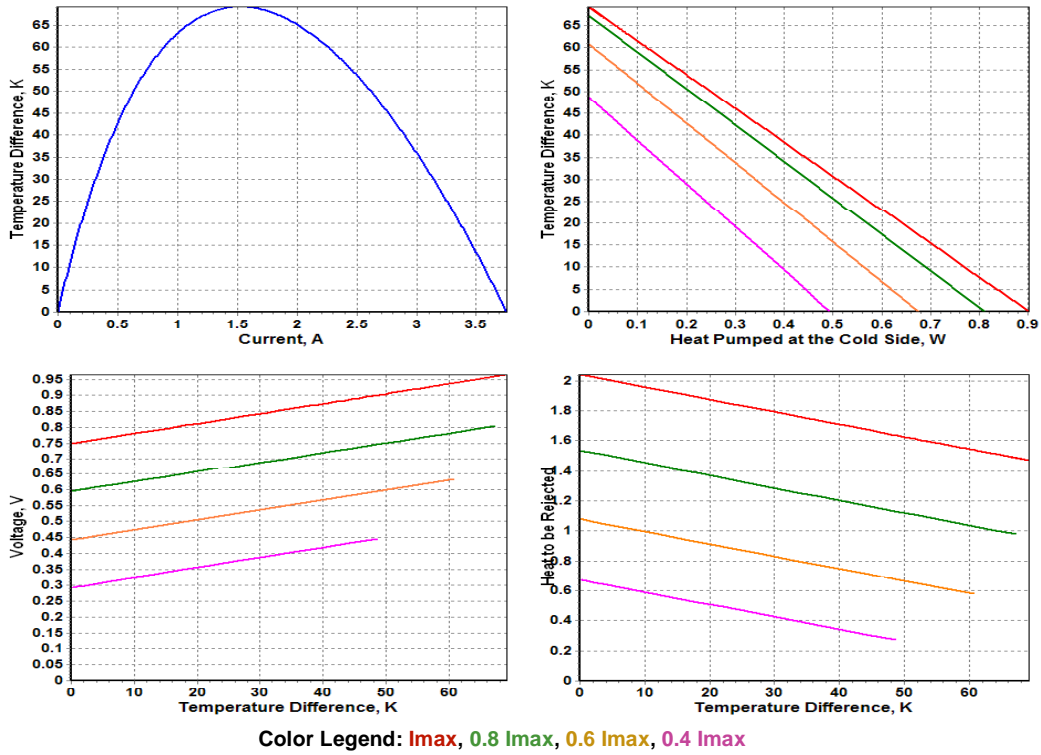


Performance plots are created with TECCAD Software. TECCAD is available for download from RMT Ltd. website - www.rmtltd.ru

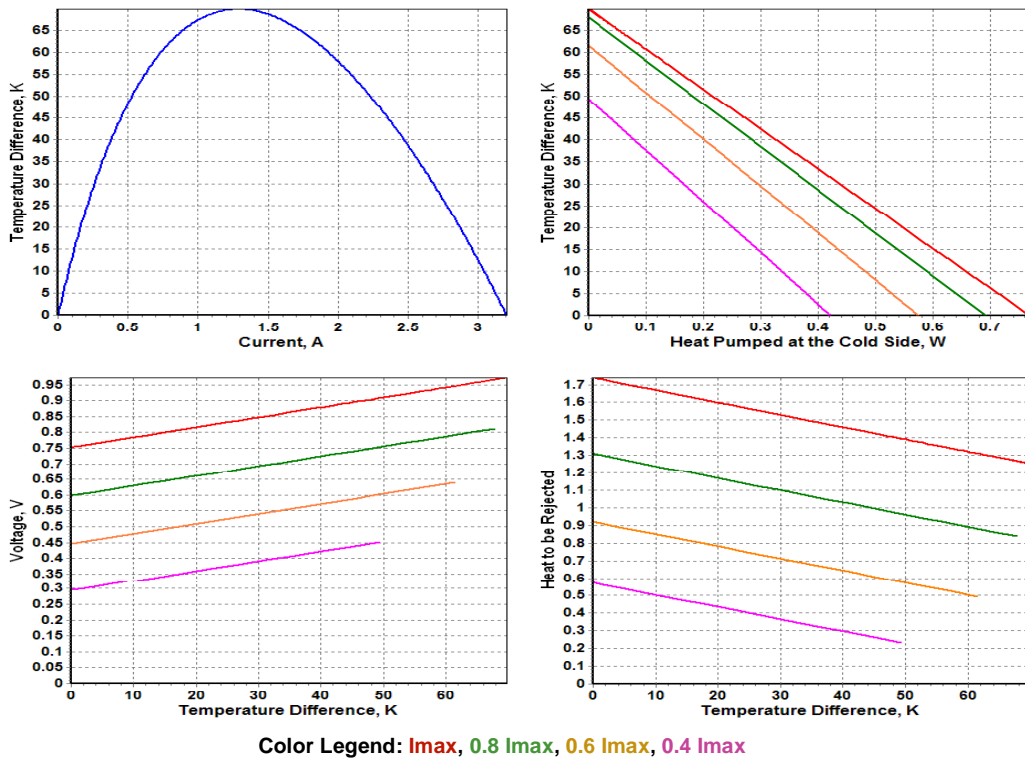
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Thermoelectric Sub-mount Datasheet RMT Ltd.

TO812.1MC0600810 Standard Performance Plots



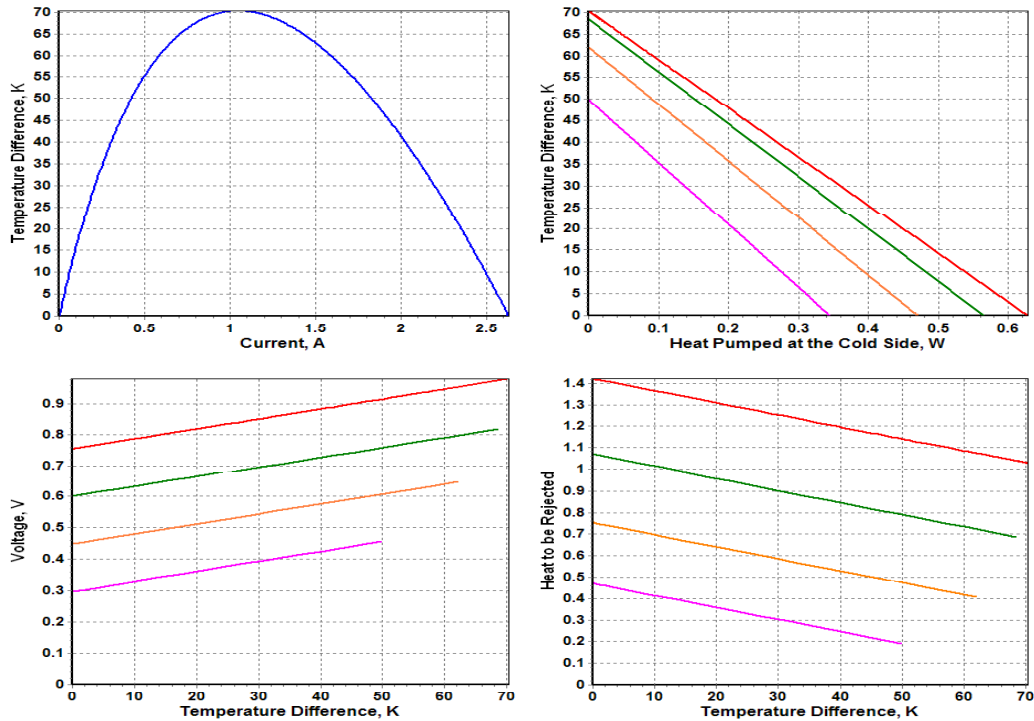
TO812.1MC0600812 Standard Performance Plots



Performance plots are created with TECCAD Software. TECCAD is available for download from RMT Ltd. website - www.rmtltd.ru

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TO812.1MC0600815 Standard Performance Plots



Color Legend: 1.0 I_{max} , 0.8 I_{max} , 0.6 I_{max} , 0.4 I_{max}

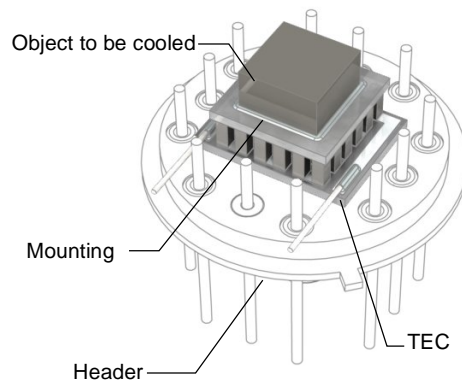
Applications Tips

Cautions

1. Do not heat TE module more than 200°C (TEC assembled at 230°C) or 160°C (TEC assembled at 183°C).
2. Do not use TE module without attached heat sink at hot (bottom) side.
3. Connect TE sub-mount to a DC power supply in accordance to polarity.
4. Do not apply DC current higher than I_{max} .

Installation

1. Soldering of object to be cooled.
 - Method suitable for a TE module with the metallized cold side (Ordering Options. Item F). Soldering requires careful procedures:
 - A. Never overheat TEC (Cautions. Item 1).
 - B. Use solder with melting point less than TEC mounting solder (Ordering Options. Item C).
2. 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.



Definitions

Value	Description	Notes
ΔT_{max}	Maximum temperature difference at $I=I_{max}$	rated at $Q_{max}=0$, at other Q it should be estimated as $\Delta T = \Delta T_{max}(1 - Q/Q_{max})$
Q_{max}	Maximum heat pumping capacity at $I=I_{max}$	rated at $\Delta T=0$, at other ΔT it should be estimated as $Q = Q_{max}(1 - \Delta T/\Delta T_{max})$
I_{max}	Maximum current	Electric parameters resulting in greatest ΔT_{max}
U_{max}	Maximum voltage drop	
R_t	Header thermal resistance	
-xx	Thermoelectric pellet length code	Pellet length is "-xx" x 10 (in mm)
T_{hot}	TEC hot side temperature	Performance data shown in specifications are given for $T_{hot}=300$ K, vacuum
H	Total TEC height	All dimensions are given in mm