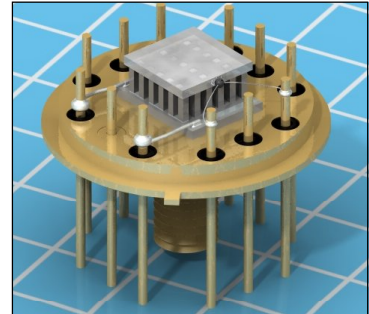


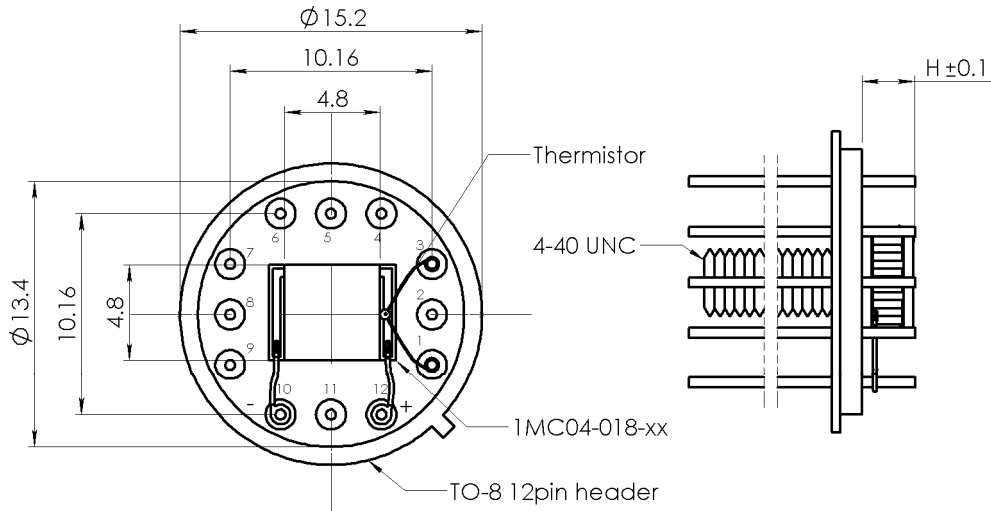
Performance parameters TO812.1MC04018xx

Mounted TEC Type	DT _{max} , K	Q _{max} , W	I _{max} , A	U _{max} , V	R _t , K/W	H, mm
1MC04-018-05	67	1.70	1.3	2.14	1.83	1.6
1MC04-018-08	69	1.14	0.9			1.9
1MC04-018-10	70	0.93	0.7			2.1
1MC04-018-12	70	0.79	0.6			2.3
1MC04-018-15	71	0.64	0.5			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°C)
 - 1.2 Solder 138 (SnBi, T_{melt}=138°C)
 - 1.3 Solder 183 (PbSn, T_{melt}=183°C)
 - 1.4 Solder 199 (SnZn, T_{melt}=199°C)
2. Epoxy gluing

D. TEC Leads Connection

Solder 230 (SnSb, T_{melt}=230°C)

E. TEC Ceramics

1. Pure Al₂O₃ (100%) - standard
2. Alumina (Al₂O₃ - 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°C)
 - 3.2 Solder 117 (InSn, T_{melt}=117°C)
 - 3.3 Solder 138 (SnBi, T_{melt}=138°C)
 - 3.4 Solder 183 (PbSn, T_{melt}=183°C)
 - 3.5 Solder 199 (SnZn, T_{melt}=199°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

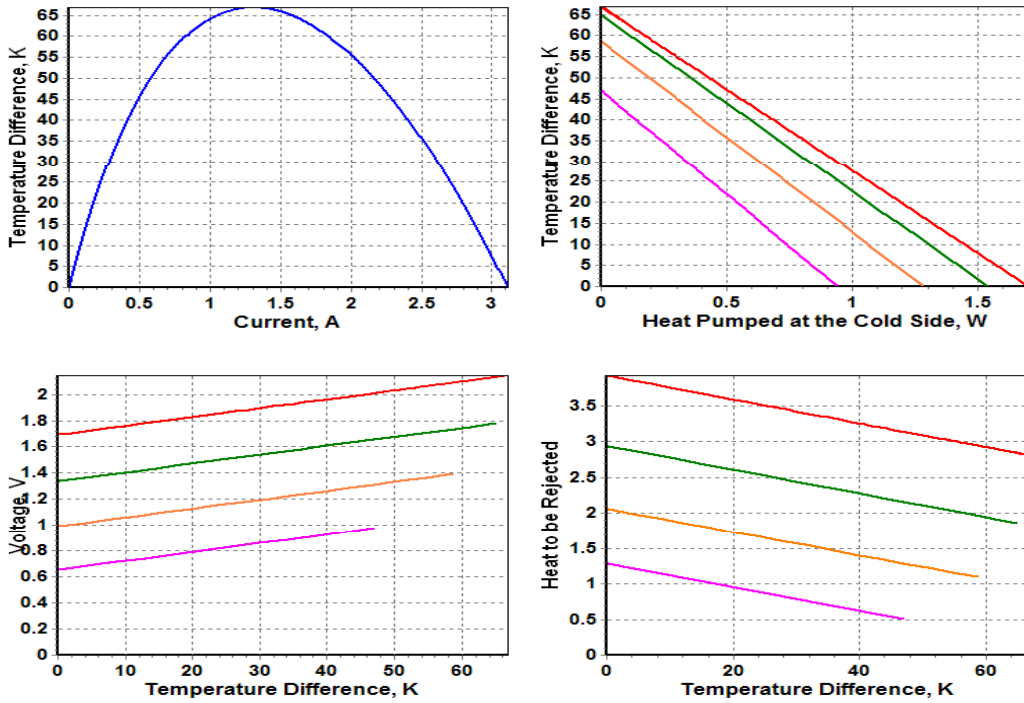
Solder 230 (SnSb, T_{melt}=230°C)

J. Pinout configuration

Can be specified by customer

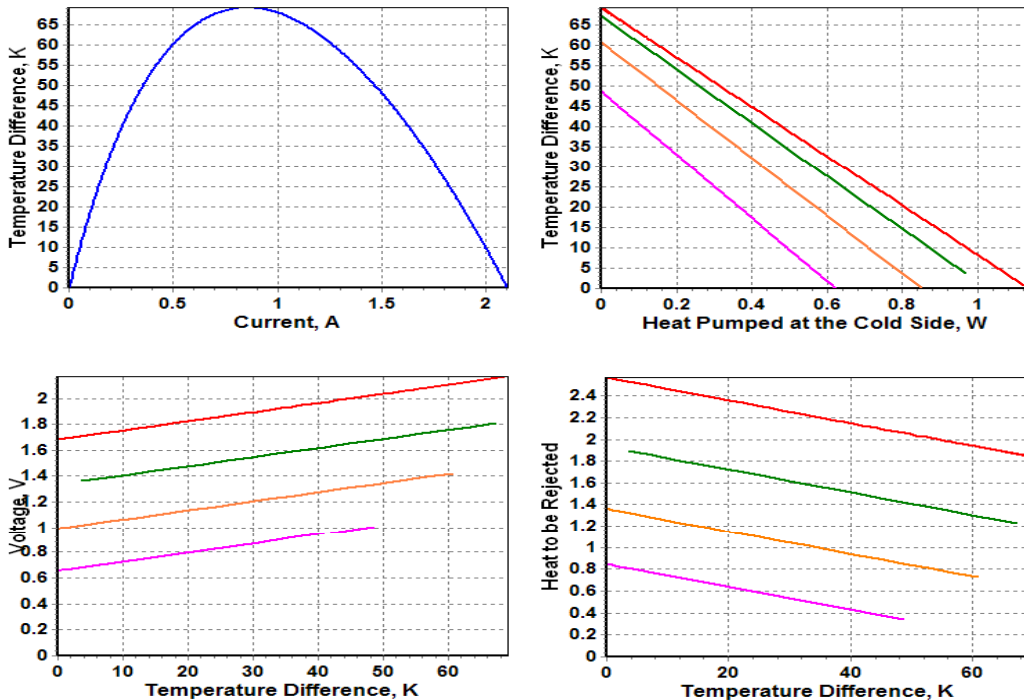
Thermoelectric Sub-mount Datasheet RMT Ltd.

TO812.1MC0401805 Standard Performance Plots



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

TO812.1MC0401808 Standard Performance Plots



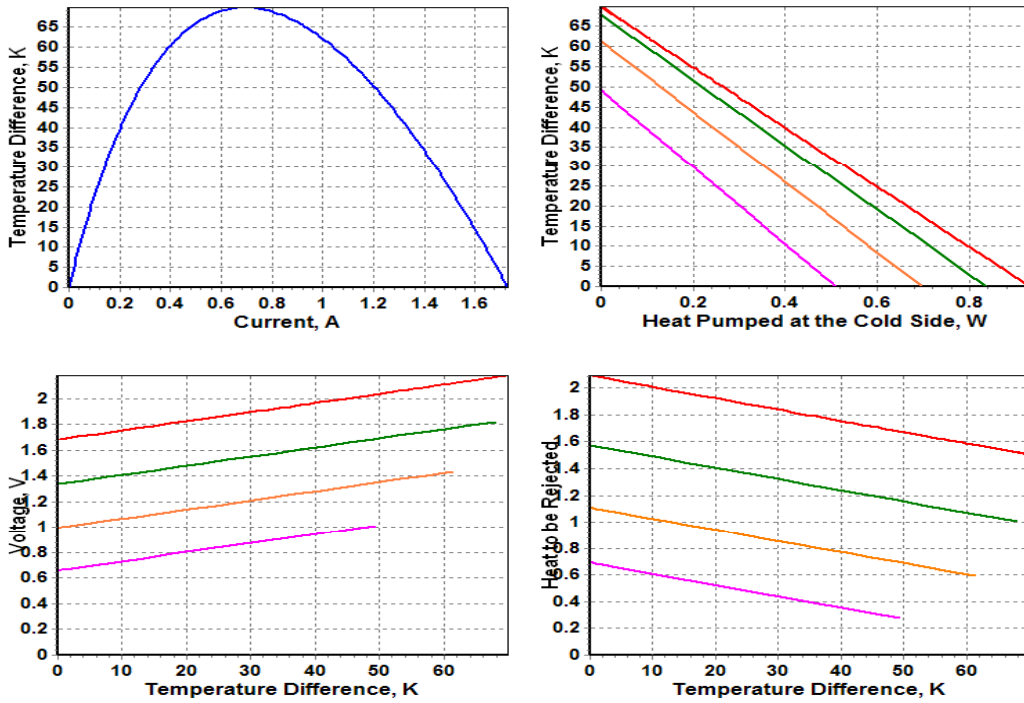
Color Legend: **I_{max}**, **0.8 I_{max}**, **0.6 I_{max}**, **0.4 I_{max}**

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

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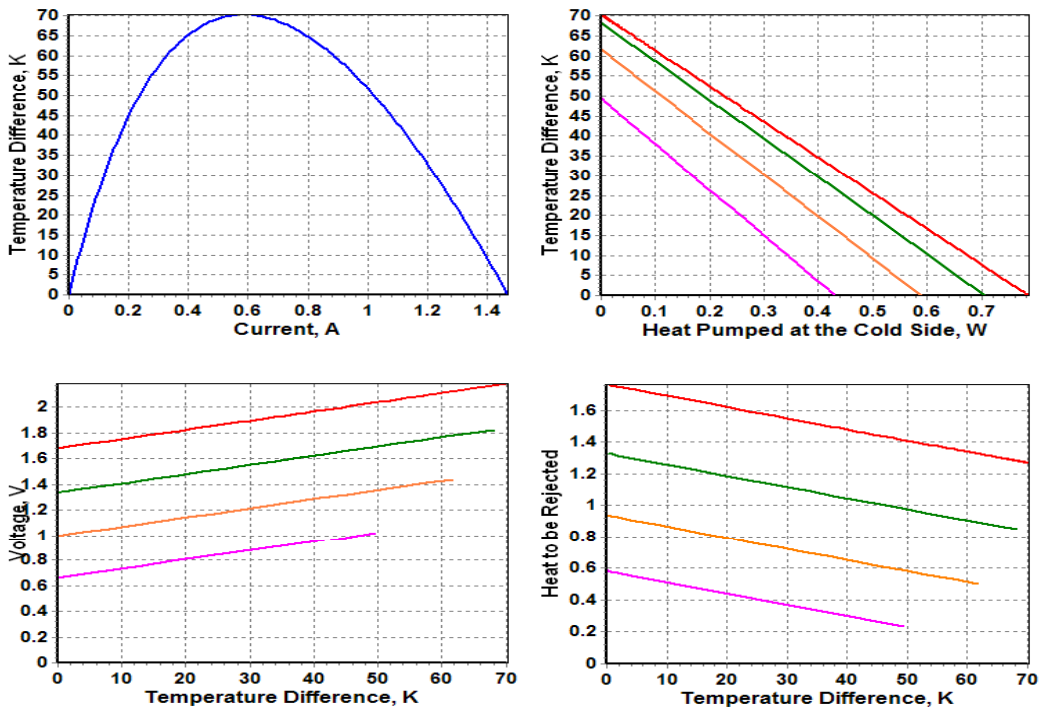
Thermoelectric Sub-mount Datasheet *RMT Ltd.*

TO812.1MC0401810 Standard Performance Plots



Color Legend: **I**max, 0.8 **I**max, 0.6 **I**max, 0.4 **I**max

TO812.1MC0401812 Standard Performance Plots

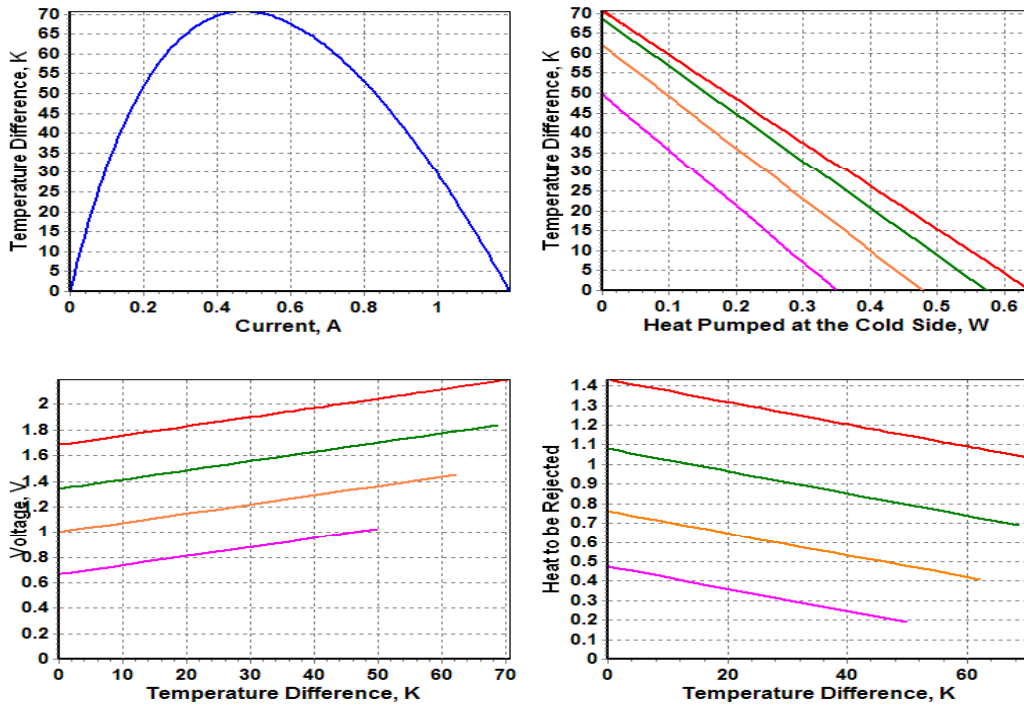


Color Legend: **I**max, 0.8 **I**max, 0.6 **I**max, 0.4 **I**max

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

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TO812.1MC0401815 Standard Performance Plots



Color Legend: **Imax**, **0.8 Imax**, **0.6 Imax**, **0.4 Imax**

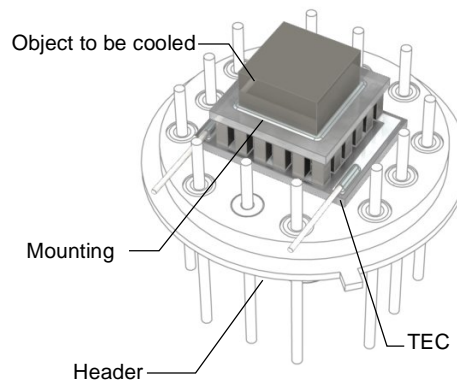
Applications Tips

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