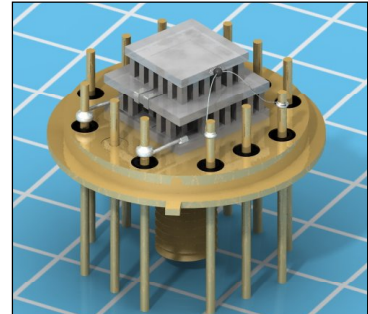


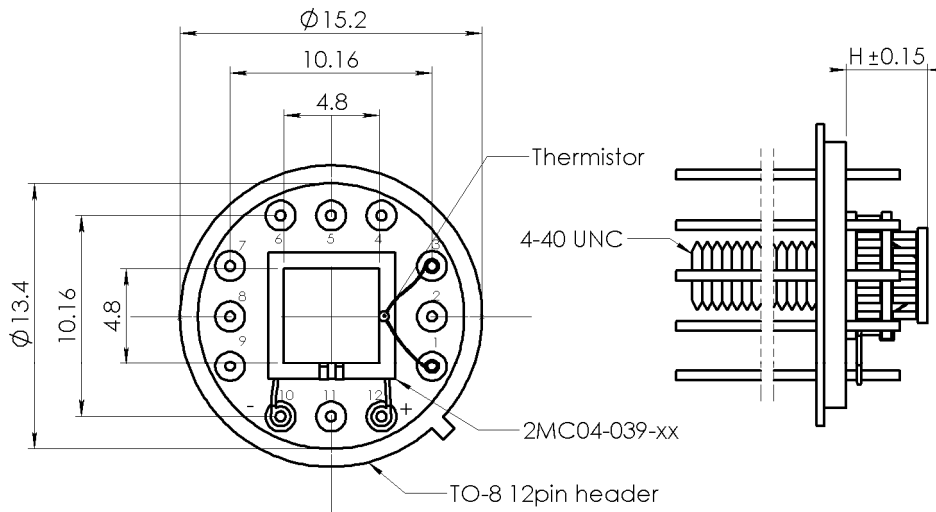
Performance parameters TO812.2MC04039xx

| Mounted TEC Type | DT _{max} , K | Q _{max} , W | I _{max} , A | U _{max} , V | R _t , K/W | H, mm |
|------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|-------|
| 2MC04-039-05 | 94 | 1.14 | 1.1 | 3.55 | 1.47 | 2.7 |
| 2MC04-039-08 | 96 | 0.74 | 0.7 | | | 3.3 |
| 2MC04-039-10 | 96 | 0.60 | 0.6 | | | 3.7 |
| 2MC04-039-12 | 96 | 0.51 | 0.5 | | | 4.1 |
| 2MC04-039-15 | 96 | 0.41 | 0.4 | | | 4.7 |

Performance data are given for $T_{hot}=300K$ 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, $T_{melt}=117^{\circ}C$)
 - 1.2 Solder 138 (SnBi, $T_{melt}=138^{\circ}C$)
 - 1.3 Solder 183 (PbSn, $T_{melt}=183^{\circ}C$)
 - 1.4 Solder 199 (SnZn, $T_{melt}=199^{\circ}C$)
2. Epoxy gluing

D. TEC Leads Connection

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

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, $T_{melt}=94^{\circ}C$)
 - 3.2 Solder 117 (InSn, $T_{melt}=117^{\circ}C$)
 - 3.3 Solder 138 (SnBi, $T_{melt}=138^{\circ}C$)
 - 3.4 Solder 183 (PbSn, $T_{melt}=183^{\circ}C$)
 - 3.5 Solder 199 (SnZn, $T_{melt}=199^{\circ}C$)

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

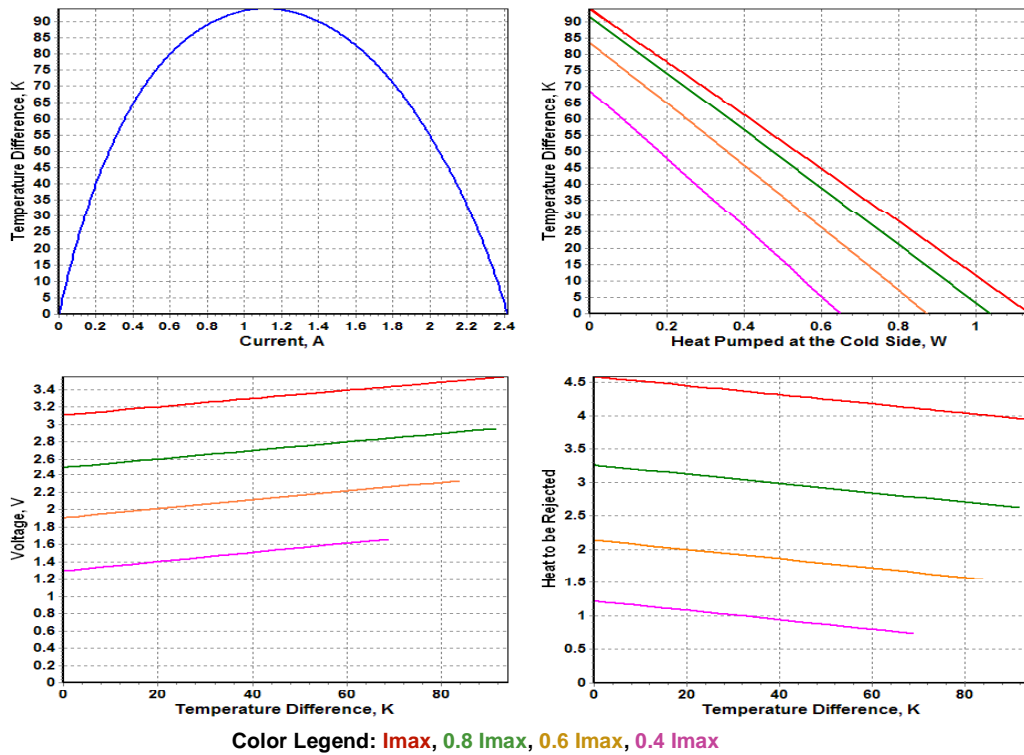
Solder 230 (SnSb, $T_{melt}=230^{\circ}C$)

J. Pinout configuration

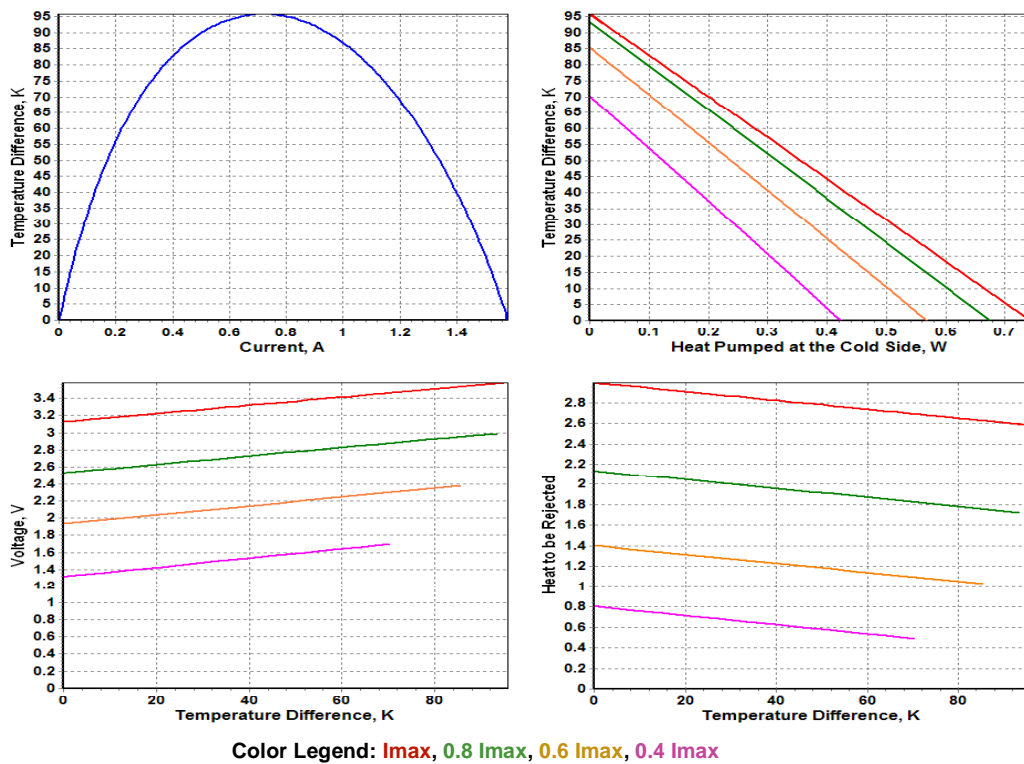
Can be specified by customer

Thermoelectric Sub-mount Datasheet RMT Ltd.

TO812.2MC0403905 Standard Performance Plots



TO812.2MC0403908 Standard Performance Plots

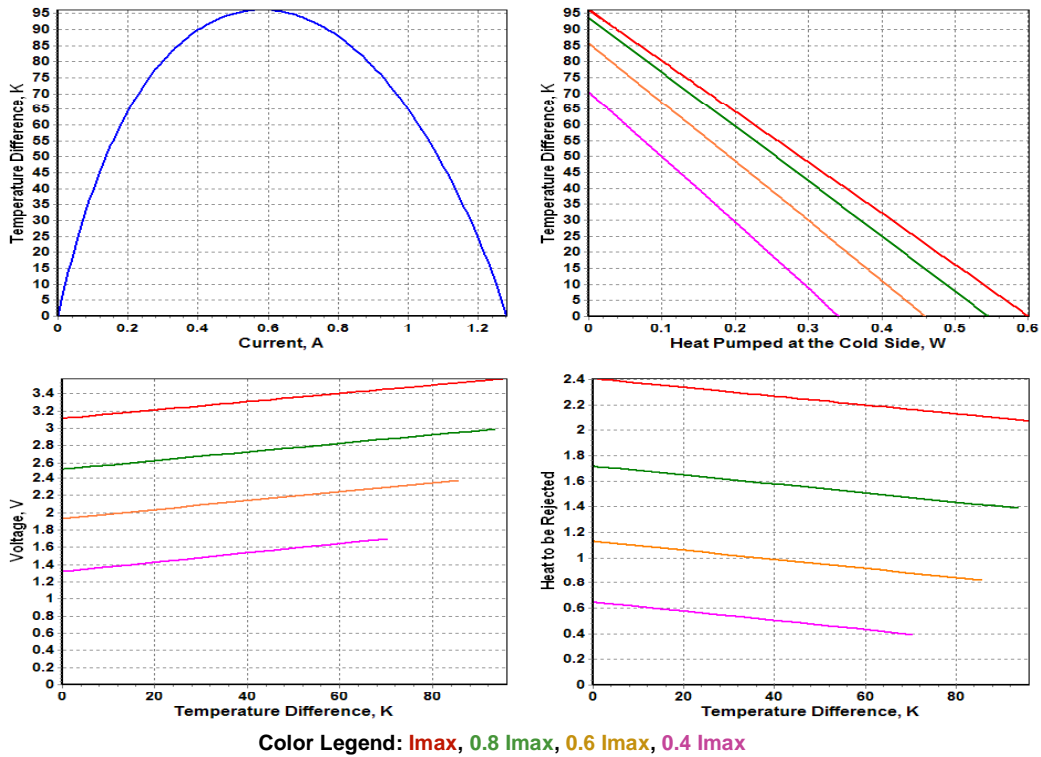


Performance plots are created with TECCAD Software. TECCAD is available for download from RMT Ltd. website - www.rmtltd.ru

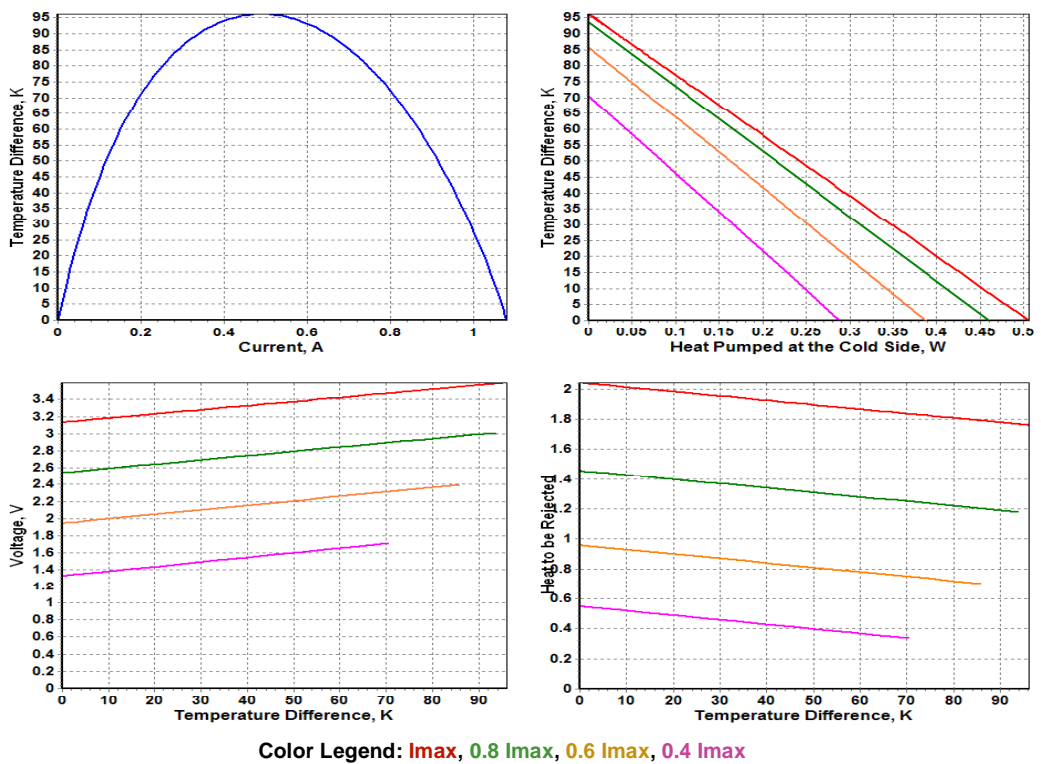
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Thermoelectric Sub-mount Datasheet RMT Ltd.

TO812.2MC0403910 Standard Performance Plots



TO812.2MC0403912 Standard Performance Plots

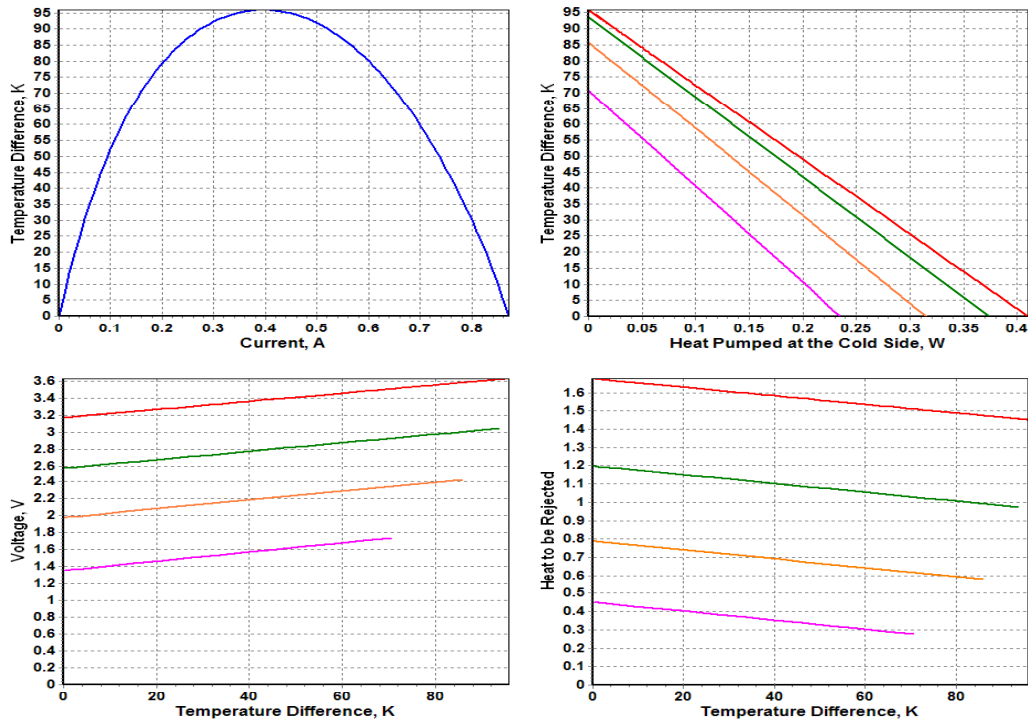


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Thermoelectric Sub-mount Datasheet RMT Ltd.

TO812.2MC0403915 Standard Performance Plots



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

Applications Tips

Cautions

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

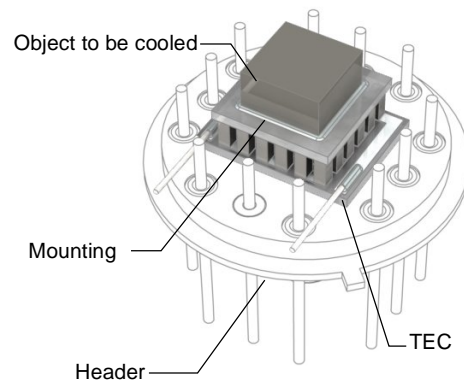
Installation

- 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:

 - Never overheat TEC (Cautions. Item 1).
 - Use solder with melting point less than TEC mounting solder (Ordering Options. Item 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.



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 |