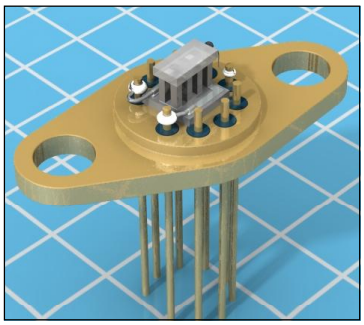
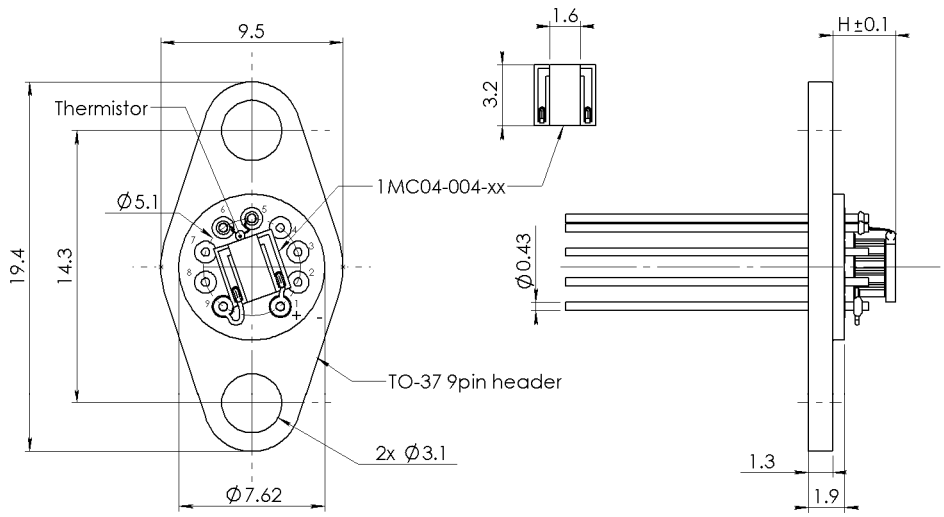
Performance parameters — TO3709.1MC04004xx

Mounted TEC Type	**D**Tmax, K	Qmax, W	Imax, A	Umax, V	H, mm	Rt, K/W
1MC04-004-05	69	0.41	1.4	0.49	1.6	4.75
1MC04-004-08	71	0.27	0.9		1.9	
1MC04-004-10	71	0.22	0.7		2.1	
1MC04-004-12	71	0.18	0.6		2.3	
1MC04-004-15	71	0.15	0.5		2.6	

Perfomance 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 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°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

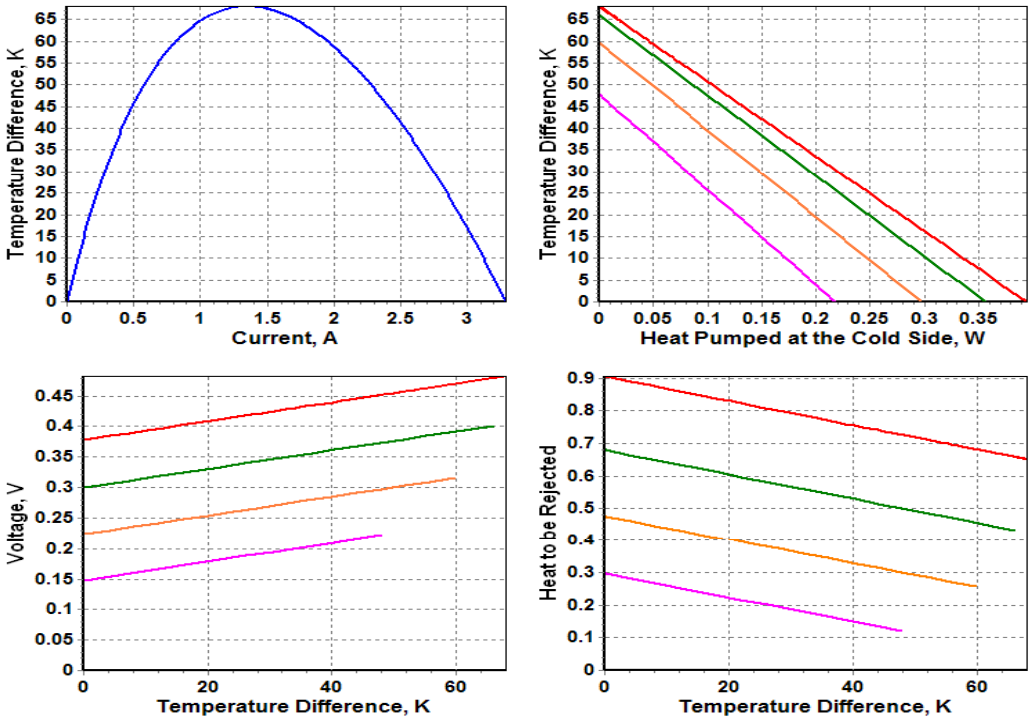
Individual calibration is avaiable in -65..+85°C

H. Thermistor Mounting
Epoxy Gluing

I. Thermistor Leads Connect
Solder 230 (SnSb, T_{melt}=230°C)

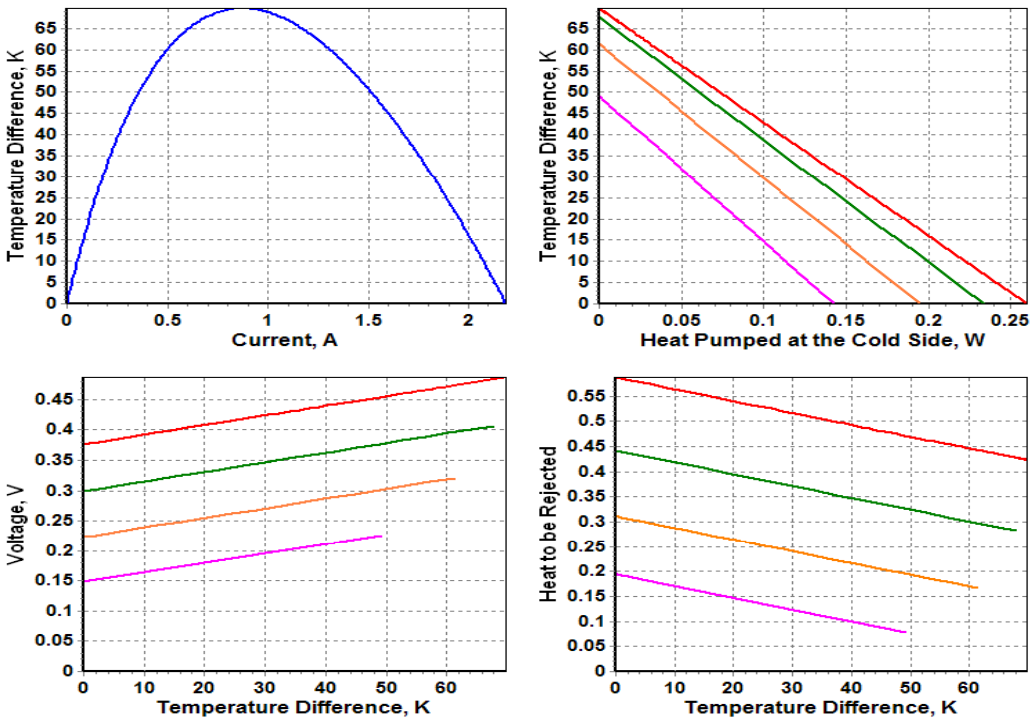
J. Pinout configuration
Can be specified by customer

TO3709.1MC0400405 ——— Standard Performance Plots



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

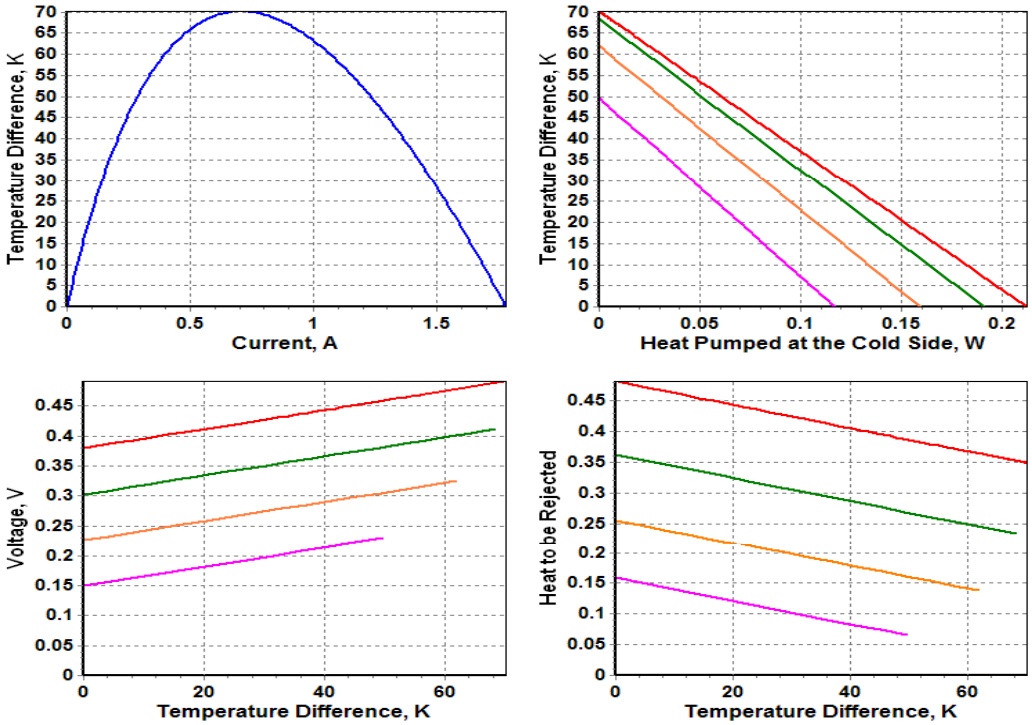
TO3709.1MC0400408 ——— Standard Performance Plots



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

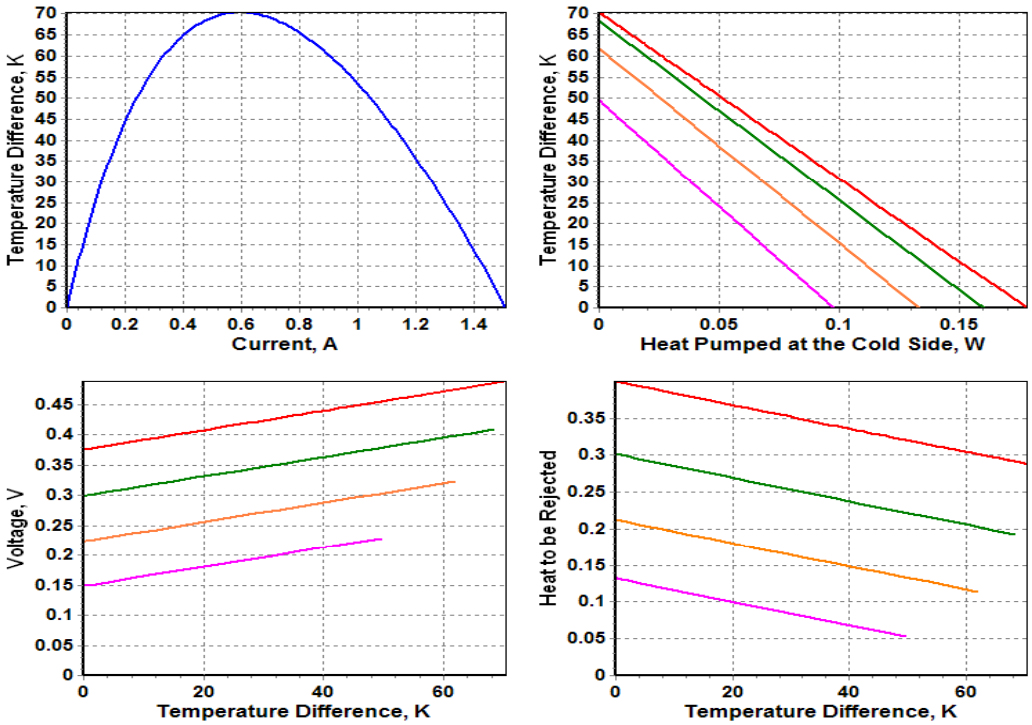
Perfomance plots are created with TECCAD Software. TECCAD is available for download from RMT Ltd. website - www.rmtltd.ru

TO3709.1MC0400410 ——— Standard Performance Plots



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

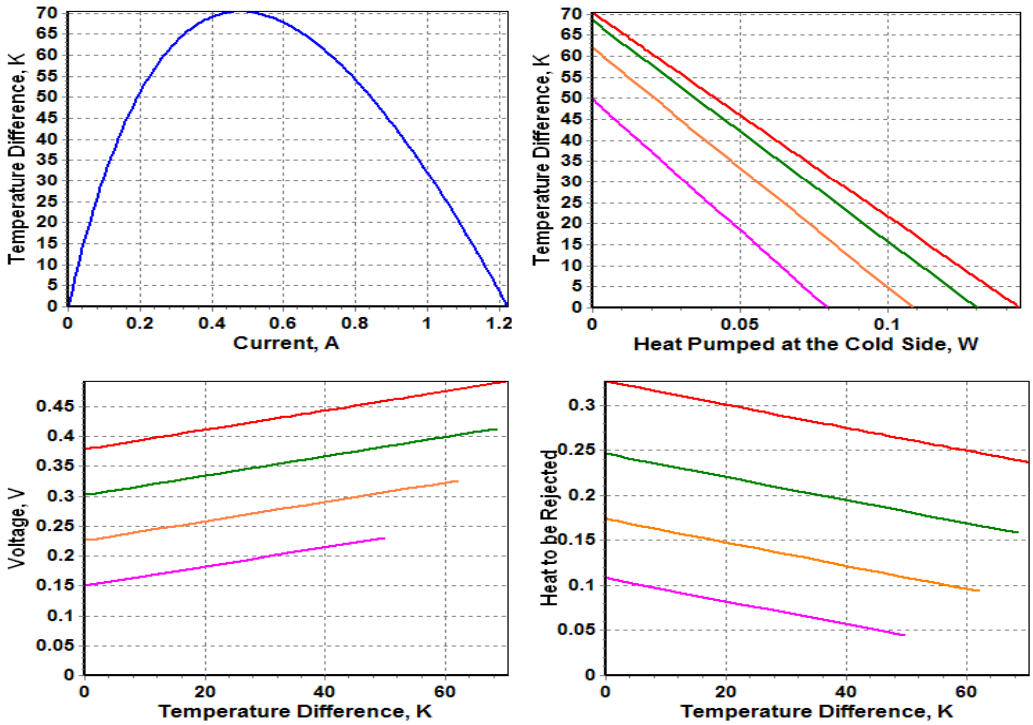
TO3709.1MC0400412 ——— Standard Performance Plots



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

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

TO3709.1MC0400415 — Standard Performance Plots



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

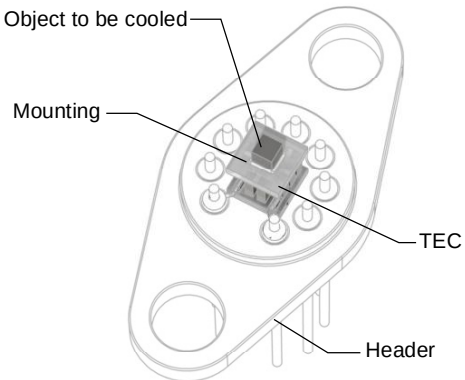
Applications Tips

Cautions

1. Do not heat TE module more than 200ºC (TEC assembled at 230ºC) or 160ºC (TEC assembled at 183ºC).
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 acccordance 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 aplications and long operations at high temperature.



Definitions

Value	Description	Notes
ΔTmax	Maximum temperature difference at I=Imax	rated at Qmax=0, at other Q it should be estimated as ΔT=ΔTmax(1-Q/Qmax)
Qmax	Maximum heat pumping capacity at I=Imax	rated at ΔT=0, at other ΔT it should be estimated as Q=Qmax(1-ΔT/ΔTmax)
Imax	Maximum current	Electric parameters resulting in greatest ΔTmax
Umax	Maximum voltage drop	
Rt	Header thermal resistance	
-xx	Thermoelectric pellet length code	Pellet length is "-xx" x 10 (in mm)
Thot	TEC hot side temperature	Performance data shown in specifications are given for Thot=300 K, vacuum
H	Total TEC height	All dimensions are given in mm