

Specification of Thermoelectric Module

TEFC1-03520

Description

The 35 couples, 12mmx6mm size module is a single stage module which is designed for cooling and heating up to 100°C applications. If higher operation or processing temperature is required, please specify, we can design and manufacture the custom made module according to your special requirements.

Features

- No moving parts, no noise, and solid-state
- Compact structure, small in size, light in weight
- Environmental friendly
- RoHS compliant
- Precise temperature control
- Exceptionally reliable in quality, high performance

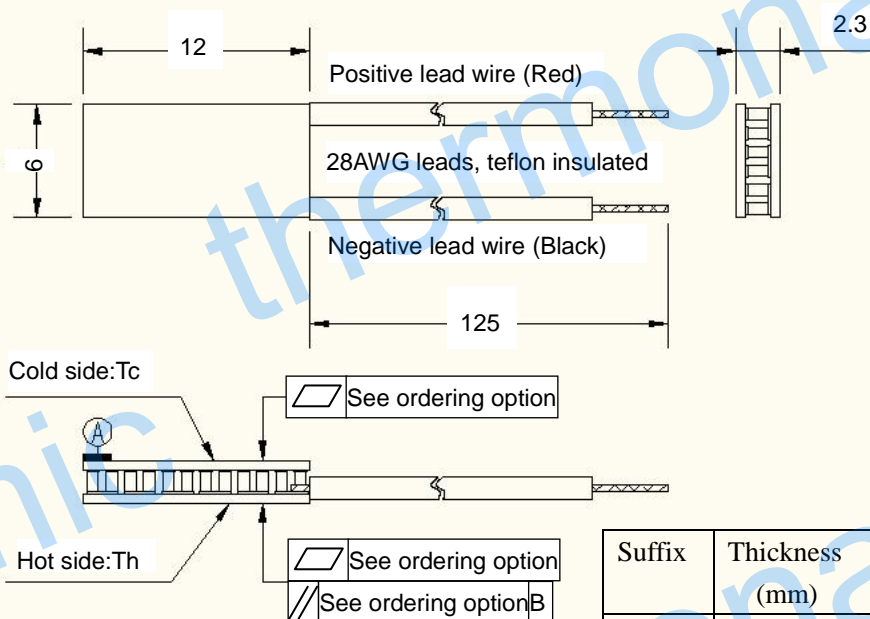
Application

- Temperature stabilizer
- CPU cooler and scientific instrument
- Photonic and medical systems
- Laser cooling
- CCD Sensor

Performance Specification Sheet

| | | | |
|----------------------------|-------|----------|---|
| Th(°C) | 27 | 50 | Hot side temperature at environment: dry air, N ₂ |
| DT _{max} (°C) | 68 | 76 | Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side |
| U _{max} (Voltage) | 4.27 | 4.78 | Voltage applied to the module at DT _{max} |
| I _{max} (amps) | 1.75 | 1.75 | DC current through the modules at DT _{max} |
| Q _{Cmax} (Watts) | 4.70 | 5.15 | Cooling capacity at cold side of the module under DT=0°C |
| AC resistance(ohms) | 2~2.3 | 2.2~2.55 | The module resistance is tested under AC |

Geometric Characteristics Dimensions in millimeters



Sealing Option

| Suffix | Sealant |
|--------|---|
| NS | No sealing |
| SS | Silicone sealant |
| EPS | Epoxy |
| OS | Customer specify sealing other than above |

Ordering Option

| Suffix | Thickness (mm) | Flatness/Parallelism (mm) | Lead wire length(mm) Standard/Optional length |
|--------|----------------|---------------------------|---|
| TF | 0: 2.3±0.1 | 0: 0.010/0.010 | 125±1/Specify |
| TF | 1: 2.3±0.05 | 1: 0.008/0.008 | 125±1/Specify |
| TF | 2: 2.3±0.03 | 2: 0.005/0.005 | 125±1/Specify |

Eg. TF01: Thickness 2.3±0.1(mm) and Flatness 0.008/0.008(mm)

Additional

Ceramic material: Alumina (Al₂O₃, white 96%)
Solder tinning: Bismuth Tin (BiSn) M.P. 138°C

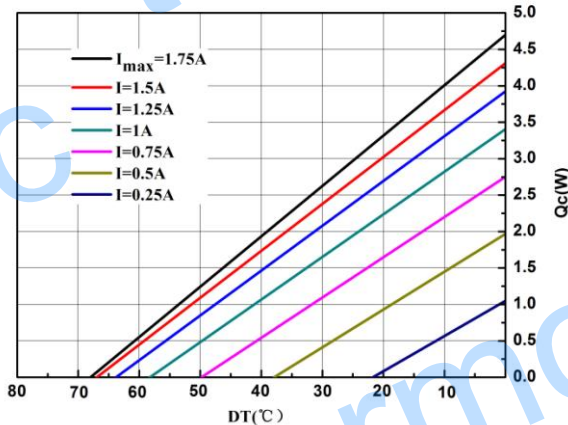
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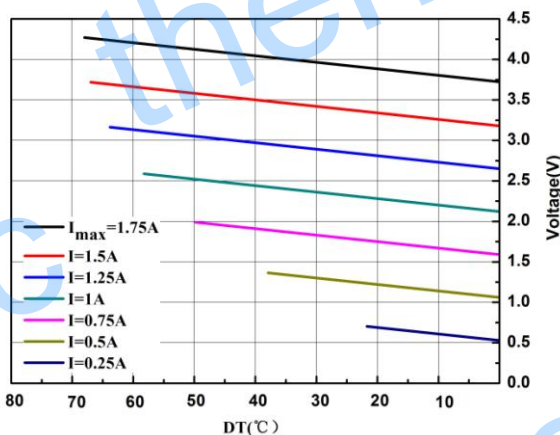
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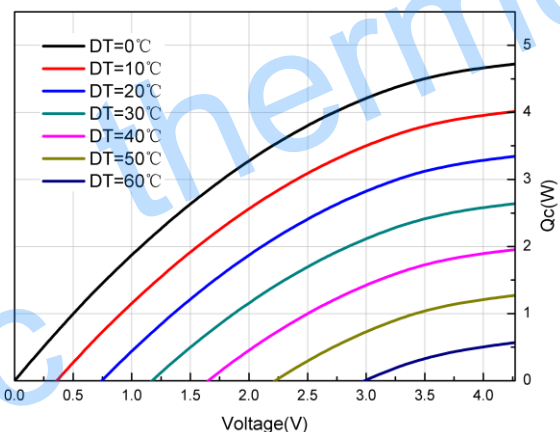
Performance Curves at $T_h=27^\circ\text{C}$



The chart for Q_c Vs DT under various currents

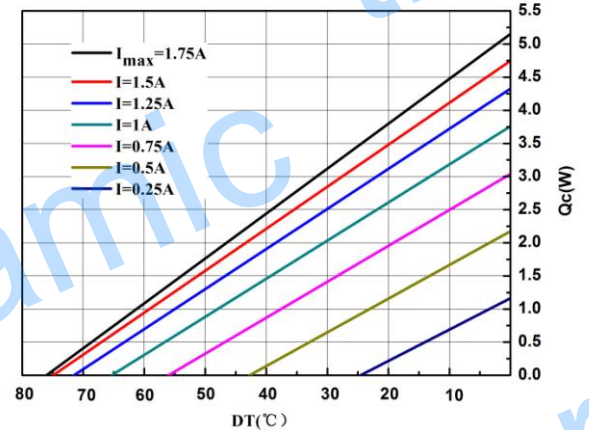


The chart for Voltage Vs DT under various currents

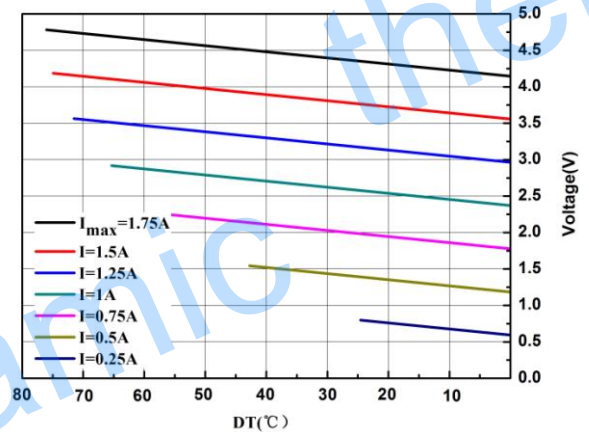


The chart for Q_c Vs Voltage under various DT

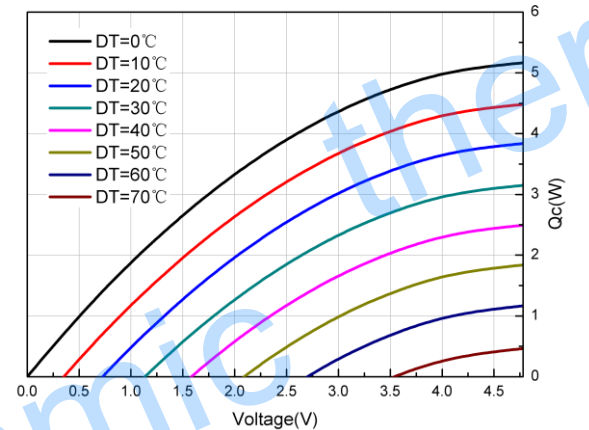
Performance Curves at $T_h=50^\circ\text{C}$



The chart for Q_c Vs DT under various currents



The chart for Voltage Vs DT under various currents



The chart for Q_c Vs Voltage under various DT

Operation Cautions

- Cold side of the module stucked on the object being cooled
- Hot side of the module mounted on a heat radiator
- Work under DC
- Operation below I_{max} or V_{max}
- Operation or storage module below 100°C