

**TEC1-071035**

The 71 couples, 30mm x 30mm size module is a single stage module which is made of our high performance ingot to achieve superior cooling performance and 70°C or larger delta Tmax, is designed for superior cooling and heating applications. Beyond the standard below, we can design and manufacture the custom made module according to your special requirements.

- 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

- Food and beverage service refrigerator
- Portable cooler box for cars
- Liquid cooling
- Temperature stabilizer
- CPU cooler and scientific instrument
- Photonic and medical systems

|                            |      |      |   |
|----------------------------|------|------|---|
| Th (°C)                    | 27   | 50   | Hot side temperature at environment: dry air, N <sub>2</sub>  |
| DT <sub>max</sub> (°C)     | 70   | 79   | Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side |
| U <sub>max</sub> (Voltage) | 8.8  | 9.5  | Voltage applied to the module at DT <sub>max</sub>  |
| I <sub>max</sub> (Amps)    | 3.9  | 3.9  | DC current through the modules at DT <sub>max</sub>   |
| Q <sub>Cmax</sub> (Watts)  | 22.1 | 23.8 | Cooling capacity at cold side of the module under DT=0 °C   |
| AC resistance (Ohms)       | 1.72 | 1.85 | The module resistance is tested under AC  |
| Tolerance (%)              | ± 10 |      | For thermal and electricity parameters  |

30.0 ± 0.2

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Positive lead wire (Red)

20AWG leads, PVC insulated

Negative lead wire (Black)

125 ± 3

Cold side: T<sub>c</sub>

Hot side: T<sub>h</sub>

See ordering option

See ordering option

See ordering option A

1. NS: No sealing (Standard)
2. SS: Silicone sealant
3. EPS: Epoxy sealant
4. Customer specify sealing

1. Blank ceramics (not metallized)
2. Metallized

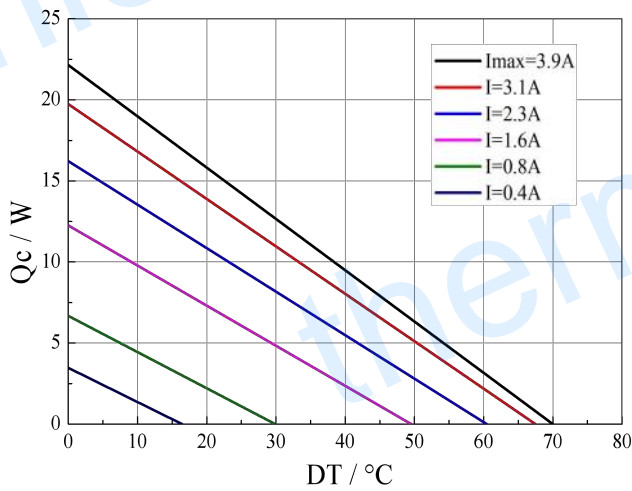
| Suffix | Thickness<br>H (mm) | Flatness/ Parallelism (mm) | Lead wire length(mm)<br>Standard/Optional length |
|--------|---------------------|----------------------------|--|
| TF     | 0:4.7± 0.1          | 0: 0.08/0.08               | 125±3/Specify                                    |
| TF     | 1: 4.7 ± 0.05       | 1: 0.05/0.05               | 125±3/Specify                                    |
| TF     | 2: 4.7 ± 0.03       | 2: 0.03/0.03               | 125±3/Specify                                    |

Eg. TF11: Thickness  $4.7 \pm 0.05$  (mm) and Flatness 0.05/0.05 (mm)

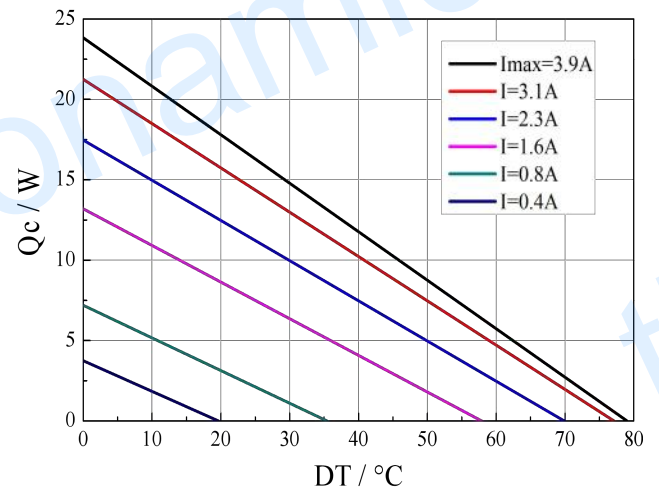
# Specification of Thermoelectric Module

TEC1-071035

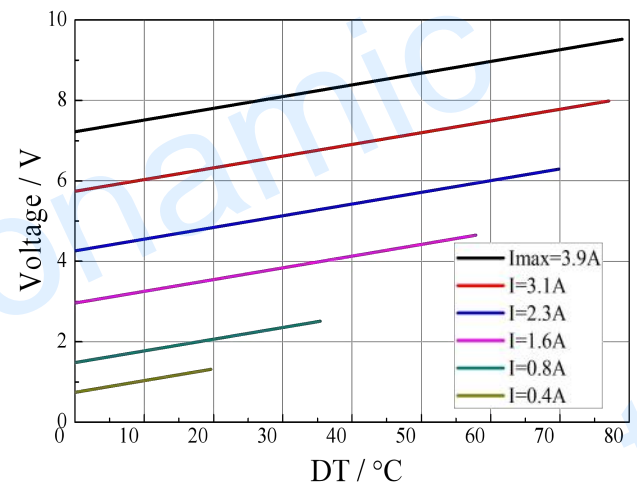
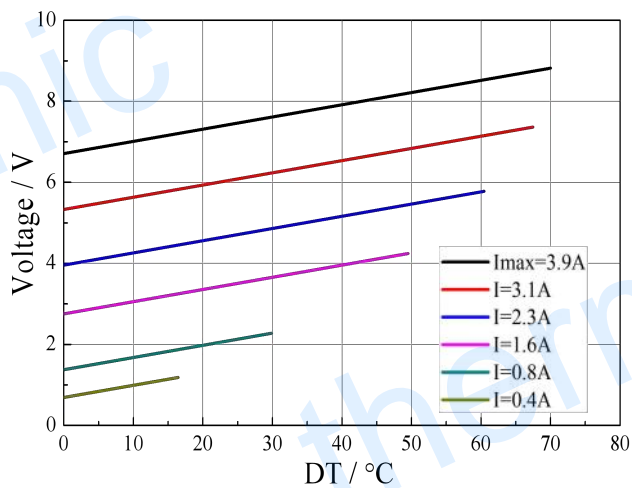
Performance Curves at  $T_h=27^\circ\text{C}$



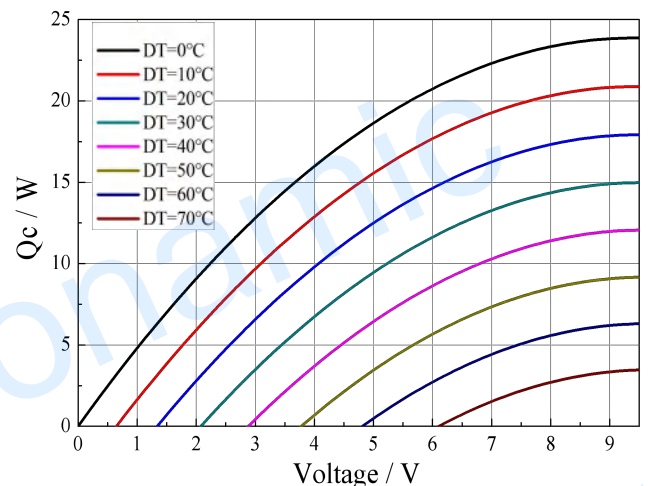
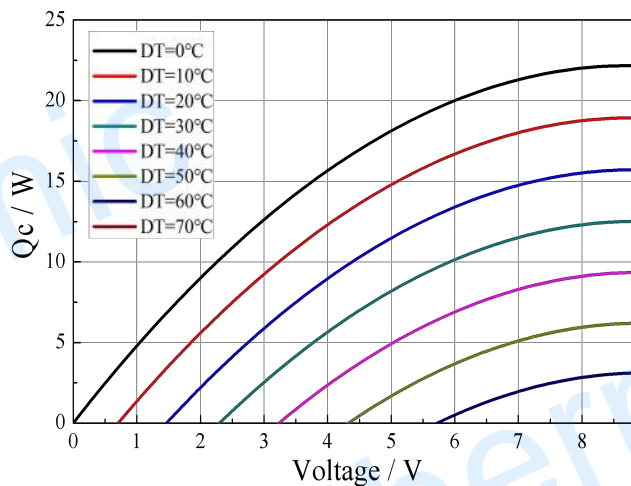
Performance Curves at  $T_h=50^\circ\text{C}$



Standard Performance Graph  $Q_c = f(DT)$



Standard Performance Graph  $V = f(DT)$

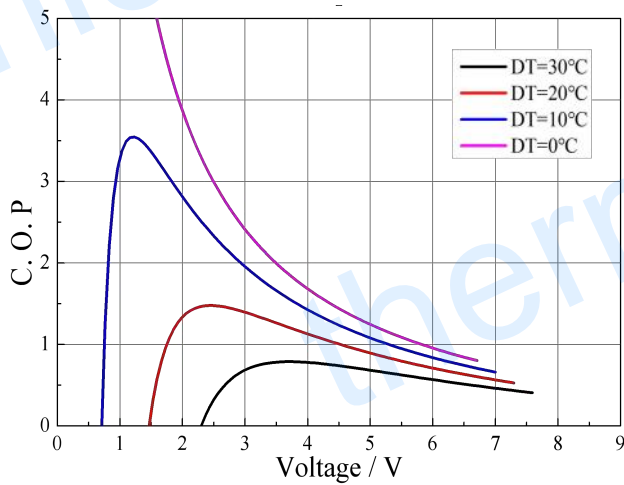


Standard Performance Graph  $Q_c = f(V)$

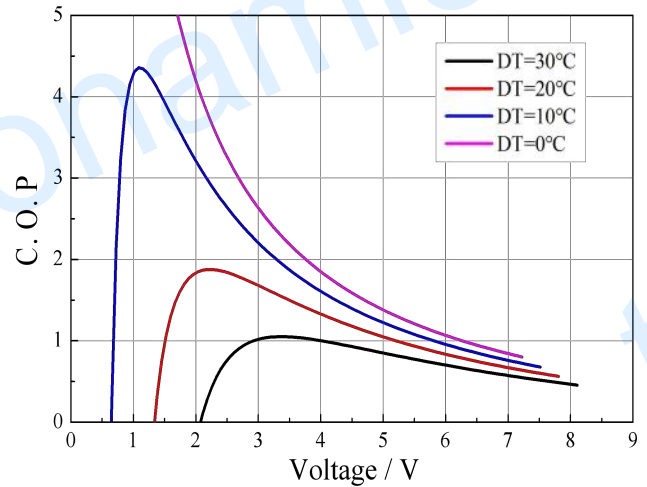
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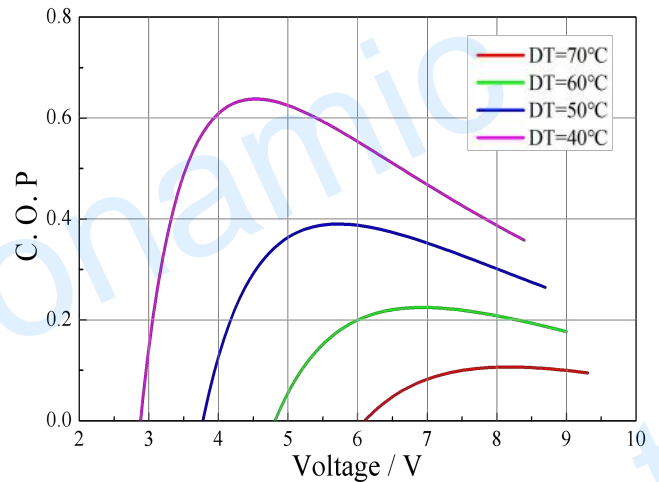
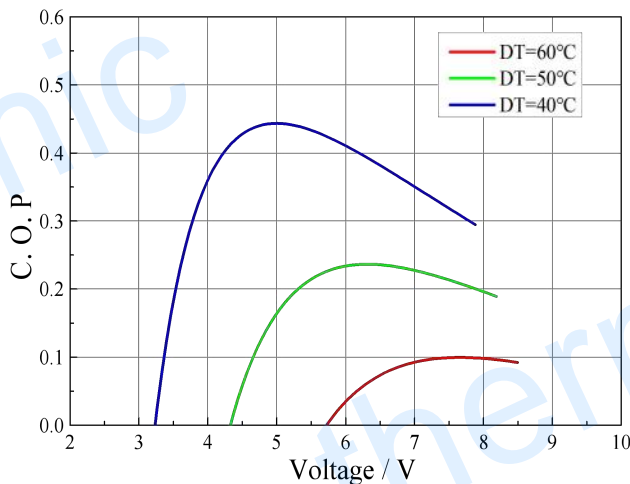
### Performance Curves at $T_h=27^\circ\text{C}$



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



Standard Performance Graph COP = f(V) of DT ranged from 0 to 30 °C



Standard Performance Graph COP = f(V) of DT ranged from 40 to 60/70 °C

**Remark:** The coefficient of performance (COP) is the cooling power  $Q_c$ /Input power ( $V \times I$ ).

### Operation Caution

- Attach the cold side of module to the object to be cooled
- Attach the hot side of module to a heat radiator for heat dissipating
- Operation below  $I_{\max}$  or  $V_{\max}$
- Work under DC

**Note:** All specifications subject to change without notice.