

Specification of Thermoelectric Module

TEFC1-06306

Description

The 63 couples, 5.04mm × 10mm size module which is made of selected high performance ingot to achieve superior cooling performance and greater delta T up to 74 °C, designed for superior cooling and heating up to 100/200 °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

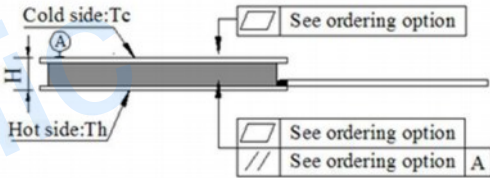
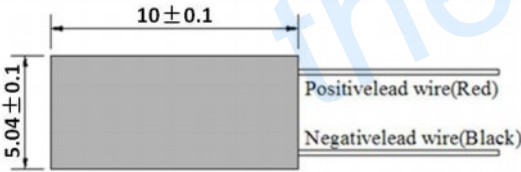
Application

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

Performance Specification Sheet

Th (°C)	27	50	Hot side temperature at environment: dry air, N ₂
DT _{max} (°C)	74	83	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U _{max} (Voltage)	8.3	8.9	Voltage applied to the module at DT _{max}
I _{max} (Amps)	0.6	0.6	DC current through the modules at DT _{max}
Q _{Cmax} (Watts)	3.2	3.5	Cooling capacity at cold side of the module under DT=0 °C
AC resistance (Ohms)	10.5	11.1	The module resistance is tested under AC
Tolerance (%)	10%		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



Ordering Option

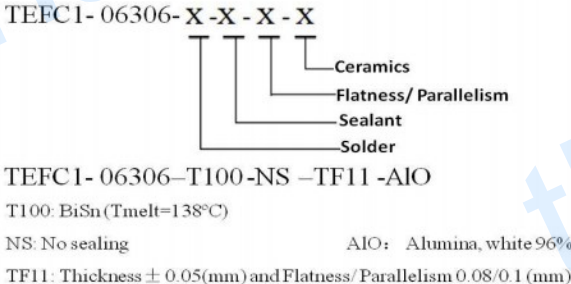
Suffix	Thickness H (mm)	Flatness/Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0:2.0 ± 0.1	0: 0.1/0.13	20±1/Specify
TF	1:2.0 ± 0.05	1: 0.08/0.1	20±1/Specify
TF	2:2.0 ± 0.025	2: 0.05/0.08	20±1/Specify

Eq. TF11: Thickness 2.0 ± 0.05(mm) and Flatness 0.08/0.1 (mm)

Manufacturing Options

- | | |
|-------------------------------------------|---------------------------------------------------------|
| A. Solder: | C. Ceramics: |
| 1. T100: BiSn (T _{mel} =138°C) | 1. Alumina (Al ₂ O ₃ , white 96%) |
| 2. T200: CuSn (T _{mel} = 227 °C) | 2. Aluminum Nitride (AlN) |
| B. Sealant: | D. Ceramics Surface Options: |
| 1. NS: No sealing (Standard) | 1. Blank ceramics (not metallized) |
| 2. SS: Silicone sealant | 2. Metallized (Au plating) |
| 3. EPS: Epoxy sealant | |
| 4. Customer specify sealing | |

Naming for the Module



Creative technology with fine manufacturing processes provides you the reliable and quality products

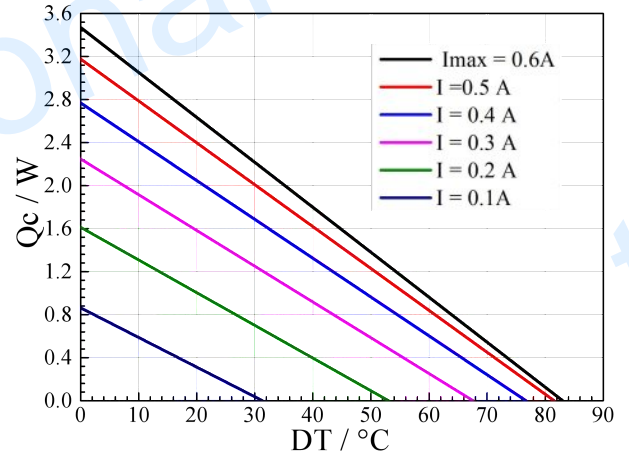
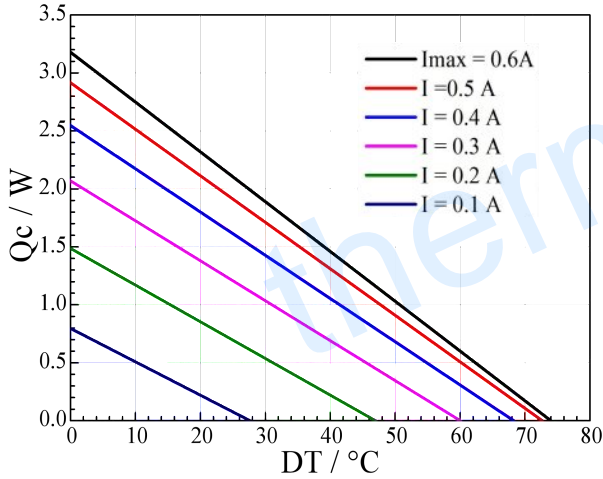
Tel: +86-791-88198288 Fax: +86-791-88198308 Email: sales@thermonamic.com.cn Web Site: www.thermonamic.com.cn

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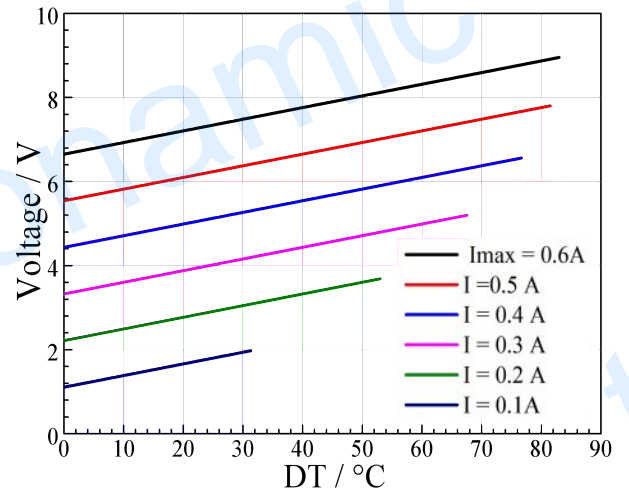
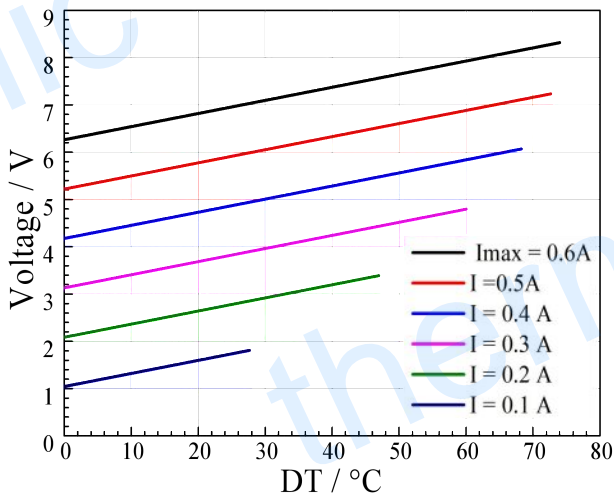
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Performance Curves at Th=27 °C

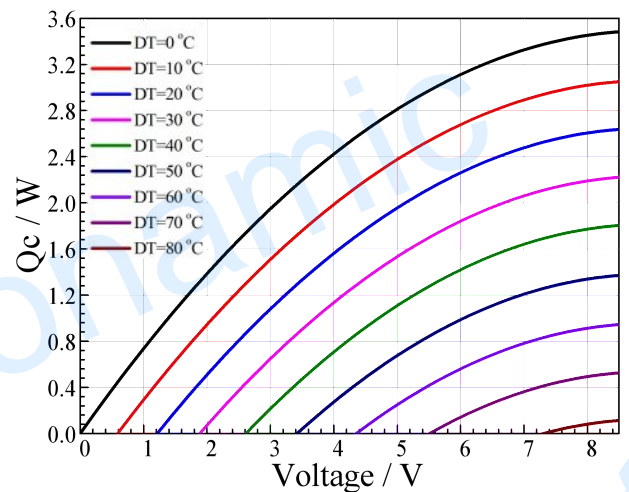
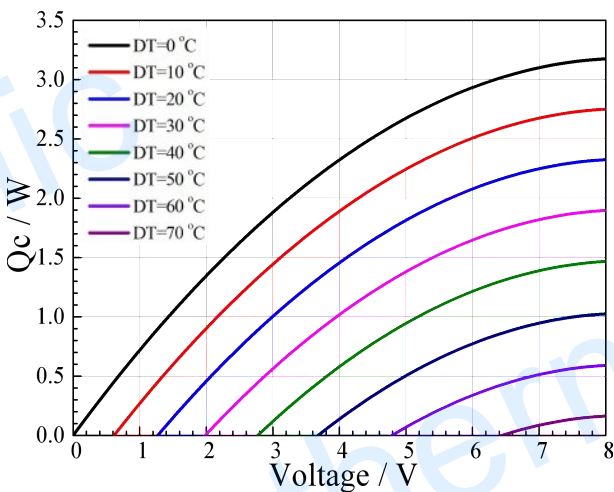
Performance Curves at Th=50 °C



Standard Performance Graph $Q_c = f(DT)$



Standard Performance Graph $V = f(DT)$



Standard Performance Graph $Q_c = f(V)$

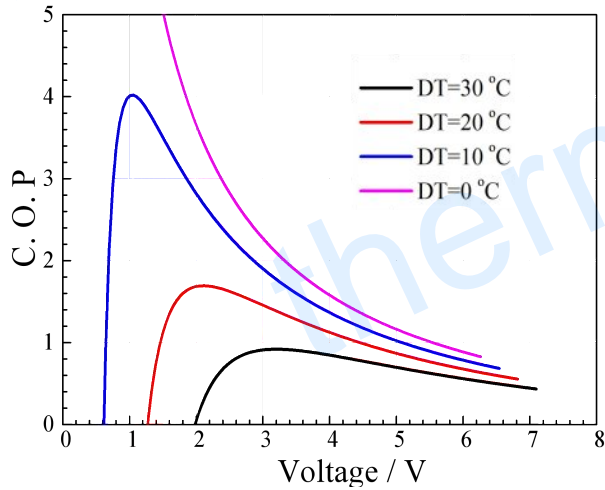
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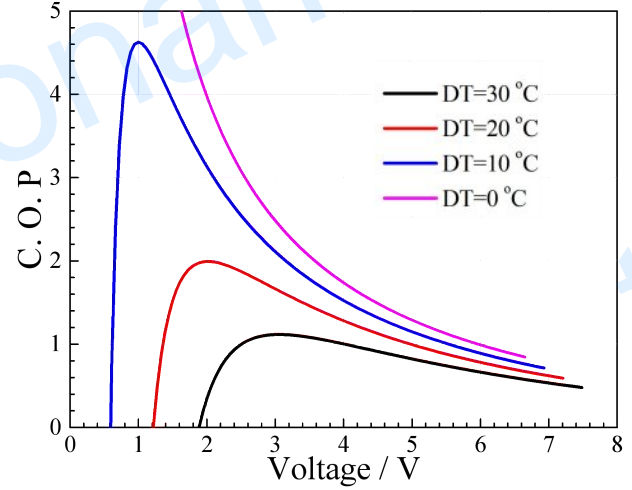
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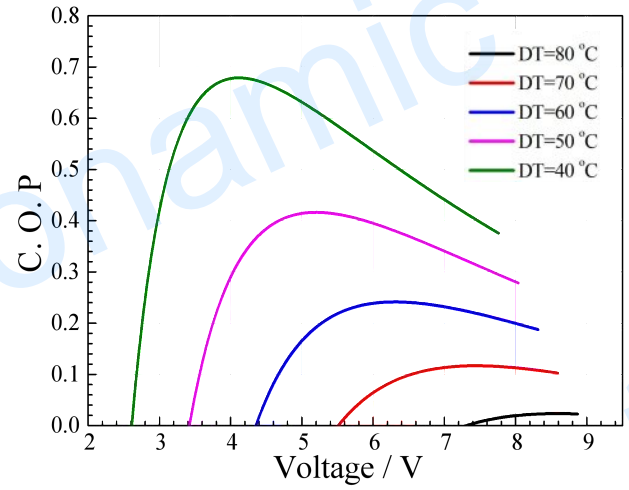
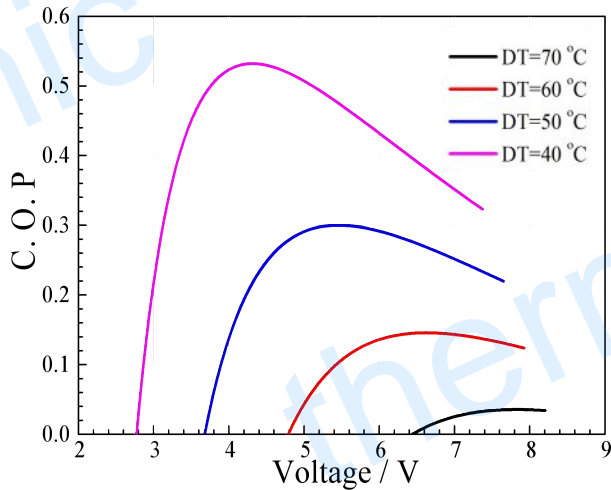
Performance Curves at Th=27 °C



Performance Curves at Th=50 °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 70/80 °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.