Specification of Thermoelectric Module

TEFC1-03520-T280-TF00-AlN-Au

Description

The 35 couples, 6mm x 12mm size module is a single stage module which is made of our high performance ingot to achieve superior cooling performance and 70℃ 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.

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

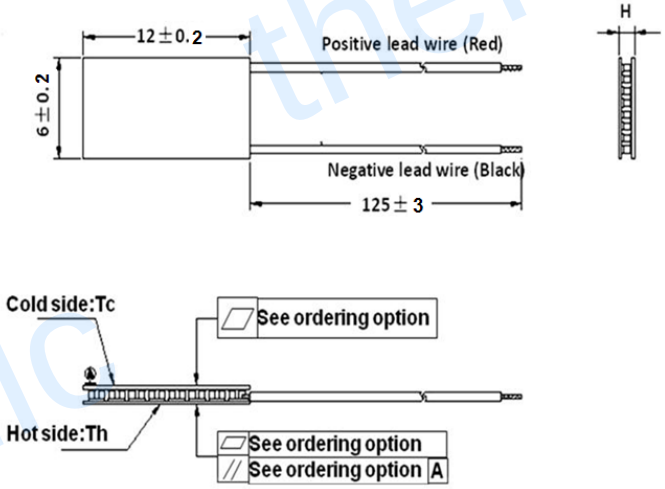
Application

- 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 (℃)	27	50	Hot side temperature at environment: dry air, N_2
DT_{max} (℃)	70	79	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U_{max} (Voltage)	4.34	4.69	Voltage applied to the module at DT_{max}
I_{max} (Amps)	2.2	2.2	DC current through the modules at DT_{max}
Q_{Cmax} (Watts)	6.16	6.64	Cooling capacity at cold side of the module under DT=0 ℃
AC resistance (Ohms)	1.50	1.62	The module resistance is tested under AC
Tolerance (%)	±10		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



Manufacturing Options

A. Solder:

T280: AuSn (Tmelt=280 ℃)

B. Sealant:

NS: No sealing

C. Ceramics:

Aluminum Nitride (AlN)

D. Ceramics Surface Options:

Hot side: Metalized (Au plating)

Cold side: Metalized (Au plating)

Ordering Option

Suffix	Thickness H (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0:1.6±0.1	0: 0.05/0.05	125±3/Specify

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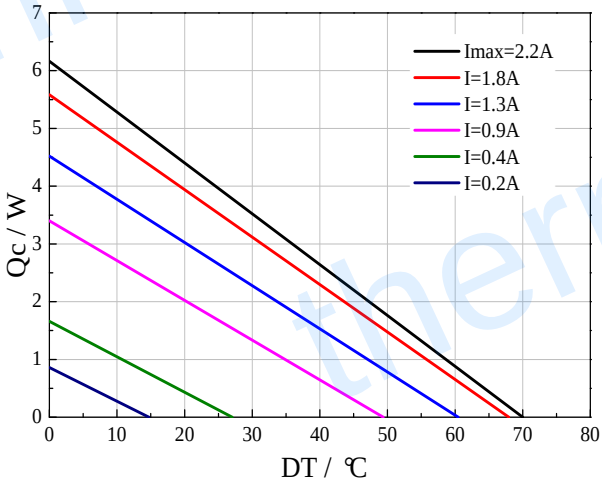
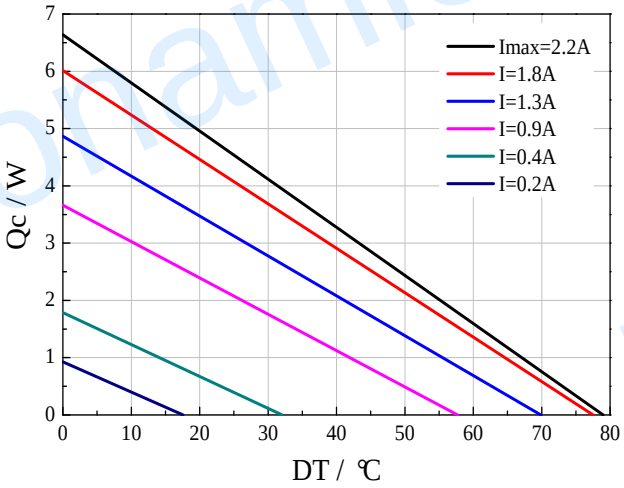
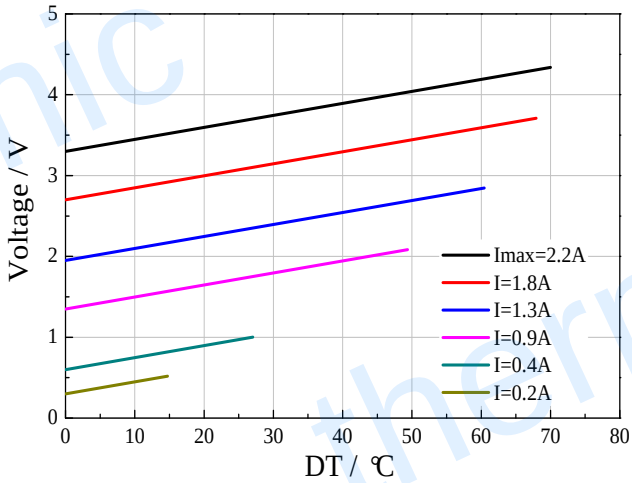
Performance Curves at Th=27 ℃

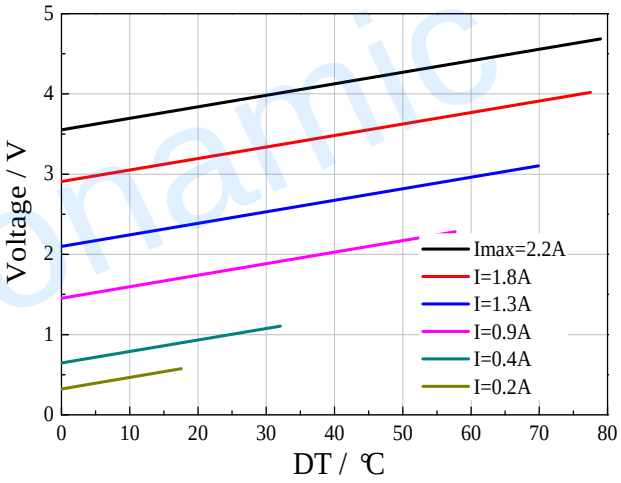


Performance Curves at Th=50 ℃

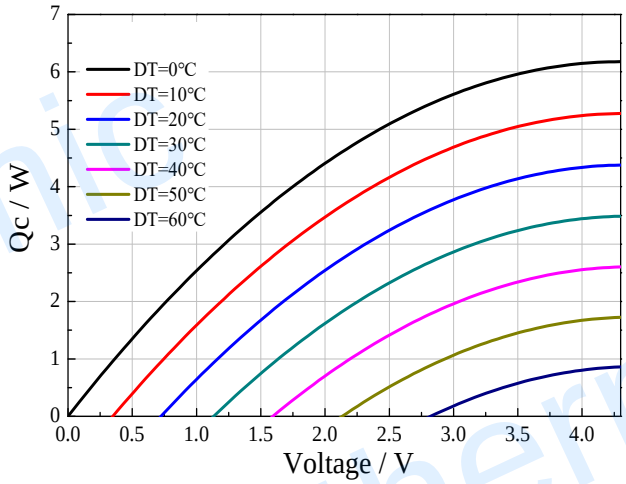


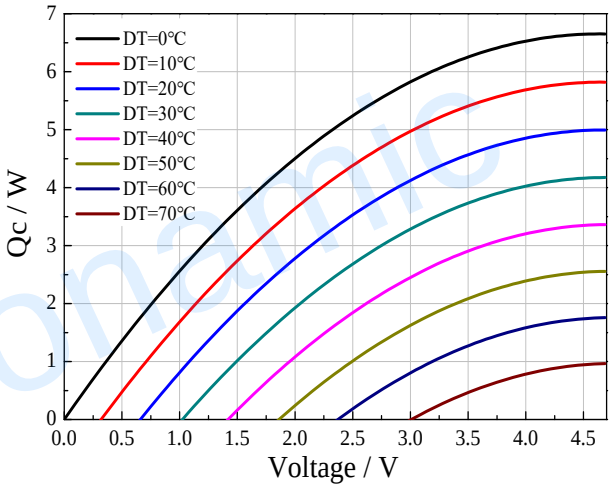
Standard Performance Graph Qc= f(DT)





Standard Performance Graph V= f(DT)





Standard Performance Graph Qc= f(V)

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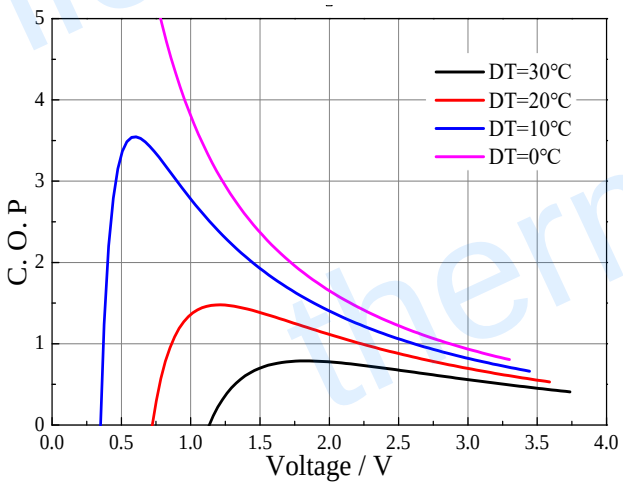
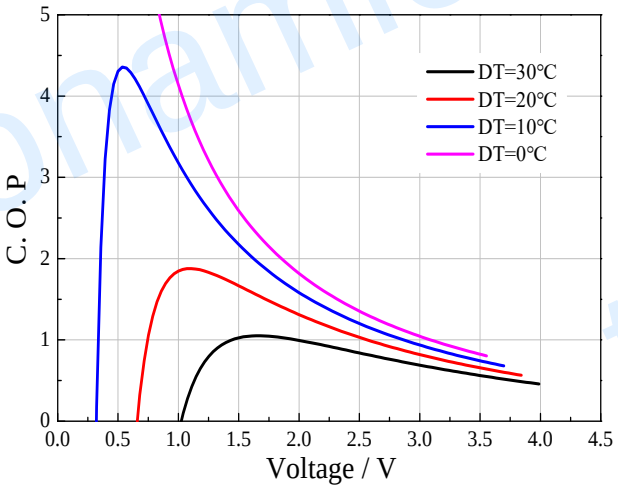
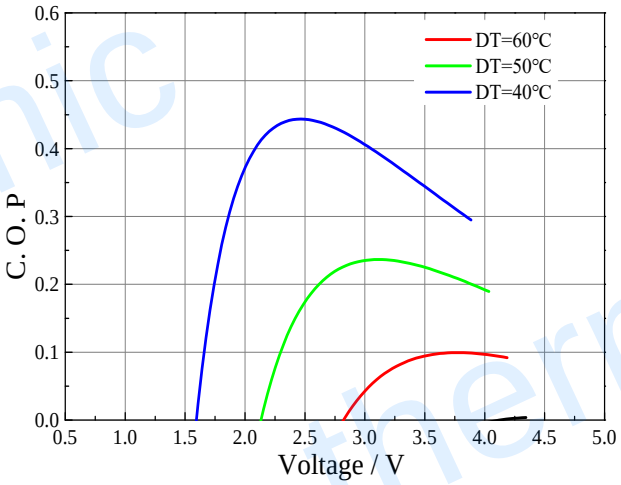
Performance Curves at Th=27 ℃

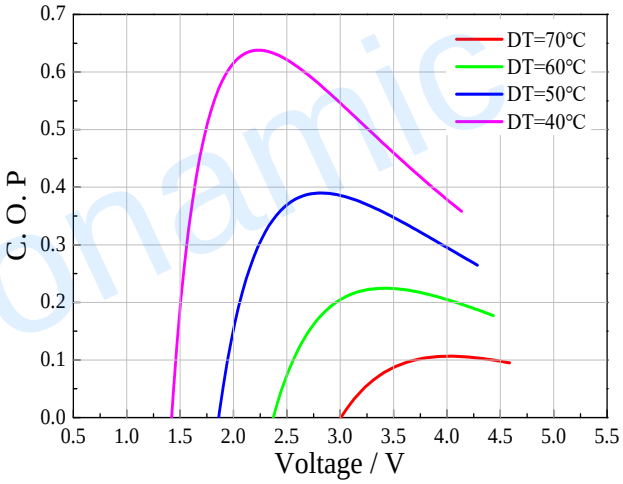


Performance Curves at Th=50 ℃



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 Qc/Input power (V ×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.

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