Specification of Thermoelectric Module

TEC1-24106

Description

The 241 couples, 55 mm × 55 mm size single module which is made of selected high performance ingot to achieve superior cooling performance and greater delta T up to 70, designed for superior 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

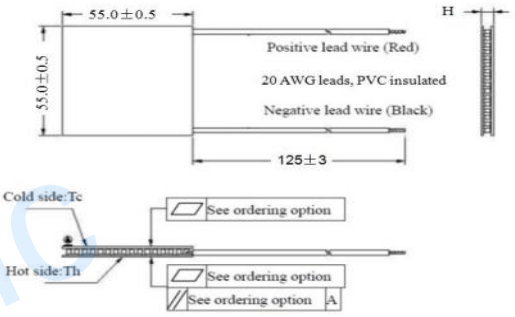
Application

- 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(ºC)	27	50	Hot side temperature at environment: dry air, N_2
DT_{max}(ºC)	70	79	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U_{max}(Voltage)	30.3	32.7	Voltage applied to the module at DT_{max}
I_{max}(amps)	6.0	6.0	DC current through the modules at DT_{max}
Q_{Cmax}(Watts)	114.0	124.6	Cooling capacity at cold side of the module under DT=0 ºC
AC resistance(ohms)	3.85	4.15	The module resistance is tested under AC
Tolerance (%)	± 10		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



A. Solder:

1. T100: BiSn (Tmelt=138ºC)
2. T200: CuAgSn (Tmelt = 217°C)
3. T240: SbSn (Tmelt = 240°C)

B. Sealant:

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

C. Ceramics:

1. Alumina (Al_2O_3, white 96%)
2. Aluminum Nitride (AlN)

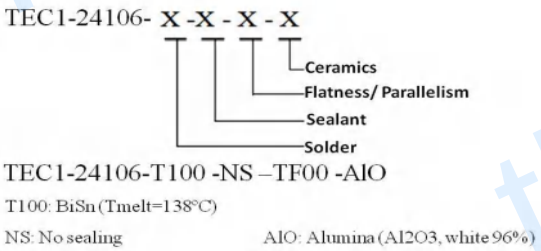
D. Ceramics Surface Options:

1. Blank ceramics (not metalized)
2. Metalized

Ordering Option

Suffix	Thickness (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0:4.35 ± 0.1	0:0.1/0.1	125±3/Specify
TF	1:4.35 ± 0.05	1:0.05/0.05	125±3/Specify
Eg. TF00: Thickness 4.35± 0.1(mm) and Flatness 0.1 / 0.1 (mm)			

Naming for the Module

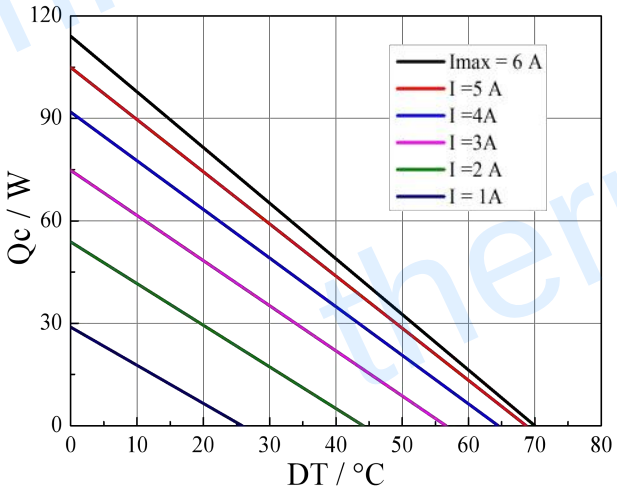


Tel: +86-791-88198288 Fax: +86-791-88198308 Email: sales@thermonamic.com.cn Web Site: www.thermonamic.com.cn

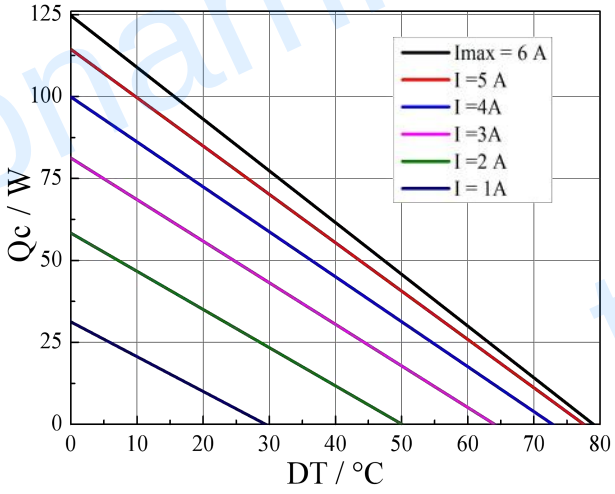
Specification of Thermoelectric Module

TEC1-24106

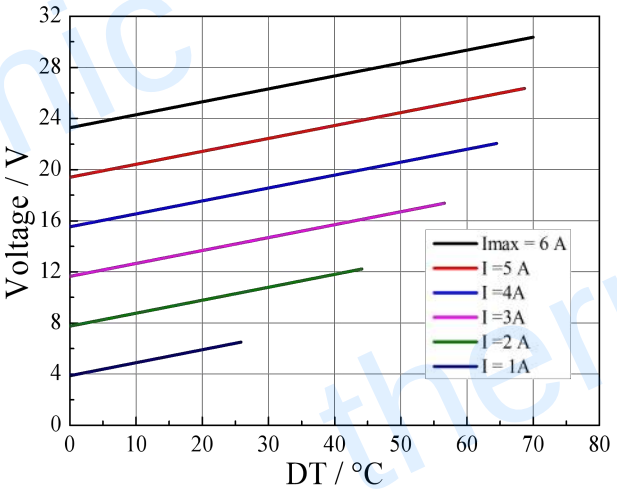
Performance Curves at Th=27 ºC

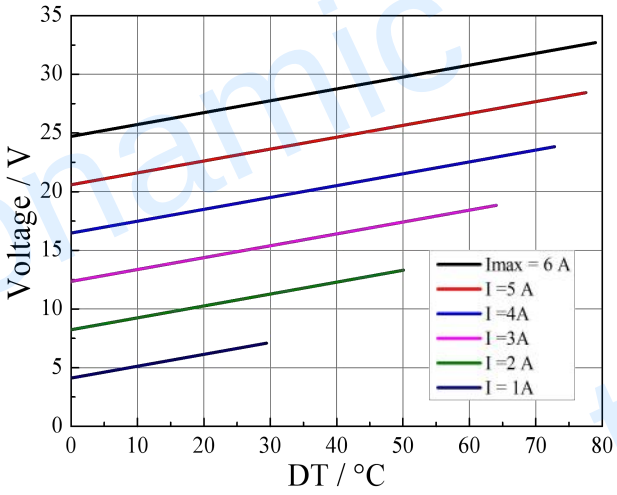


Performance Curves at Th=50 ºC

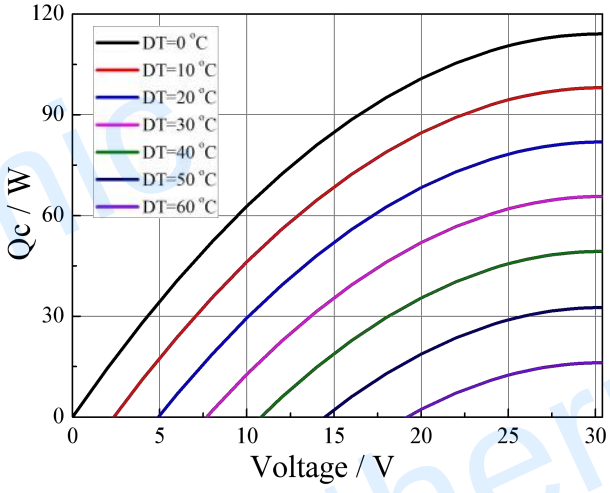


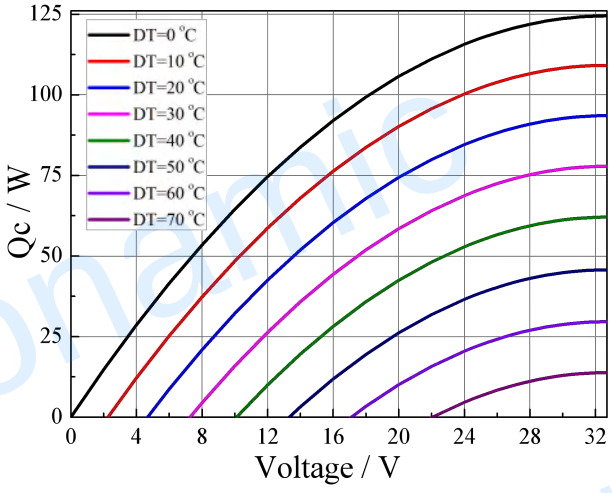
Standard Performance Graph Qc= f(DT)





Standard Performance Graph V= f(ΔT)





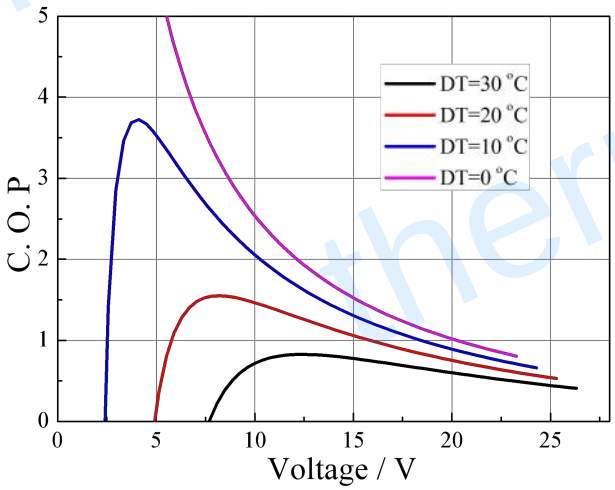
Standard Performance Graph Qc= f(V)

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

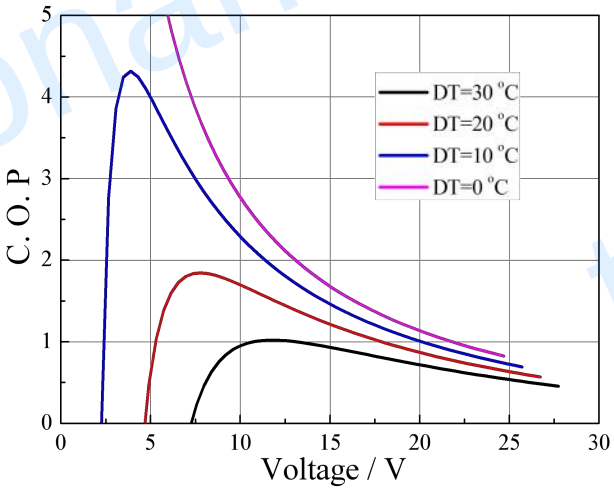
Specification of Thermoelectric Module

TEC1-24106

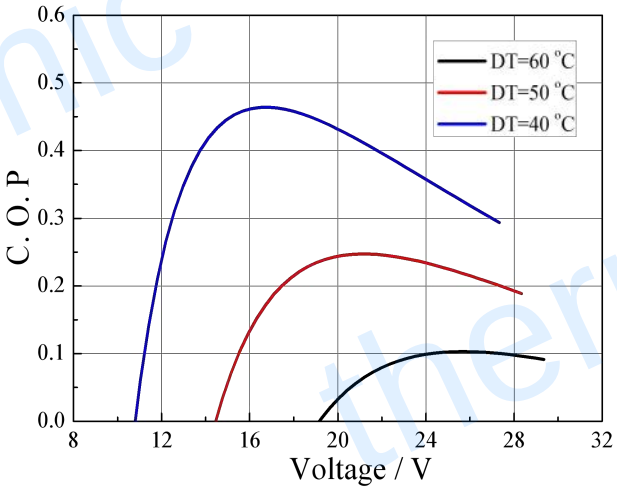
Performance Curves at Th=27 ºC

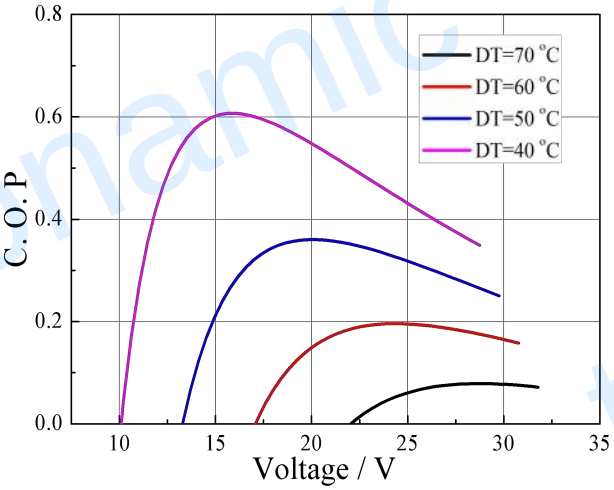


Performance Curves at Th=50 ºC



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





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

Remark: The coefficient of performance (COP) is the cooling power Qc/Input power (V × I).

Operation Cautions

- 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.
- Storage module below 100 ºC
- Operation below I_{max} or V_{max}
- Work under DC