Data Sheet

TEFC1-01212P-TTAu-T200-AlN

Thermoelectric Module

General Description

The 12 couples, 3.0/2.4 mm × 1.6mm size module which is made of selected high performance ingot to achieve superior cooling performance and greater delta T up to 74 ºC, designed for superior cooling and heating up to 200 ºC 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

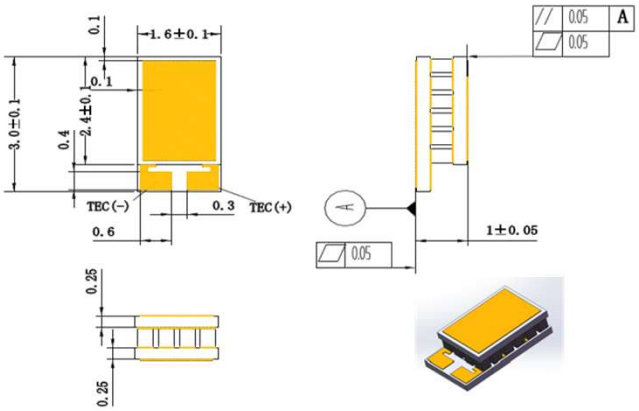
Applications

- 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)	74	83	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U_{max} (Voltage)	1.58	1.70	Voltage applied to the module at DT_{max}
I_{max} (Amps)	1.2	1.2	DC current through the modules at DT_{max}
Q_{Cmax} (Watts)	1.19	1.28	Cooling capacity at cold side of the module under DT=0 ºC
AC resistance (Ohms)	0.99	1.07	The module resistance is tested under AC
Tolerance (%)	10%		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



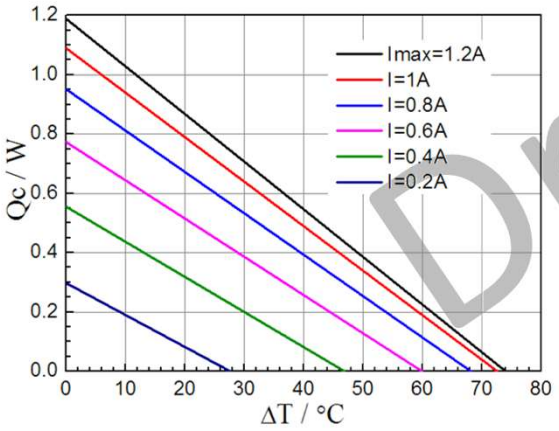
Manufacturing Options

A. Solder:
T200: CuSn (Tmelt=227ºC)
B. Sealant:
NS: No sealing
C. Ceramics:
Aluminum Nitride (AlN)
D. Ceramics Surface Options:
Hot side: Metalized (Au plating)
Cold side: Metalized (Au plating)

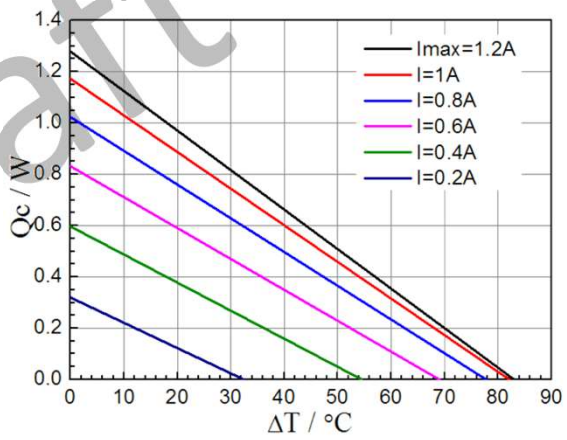
Ordering Option

Suffix	Thickness H (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0:1.0± 0.05	0: 0.05/0.05	No Wires

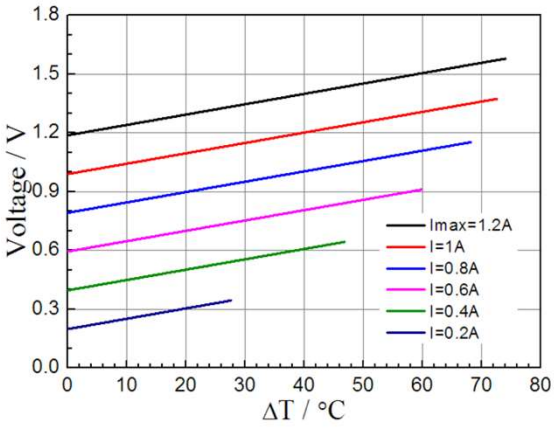
Performance Curves at Th=27 ºC

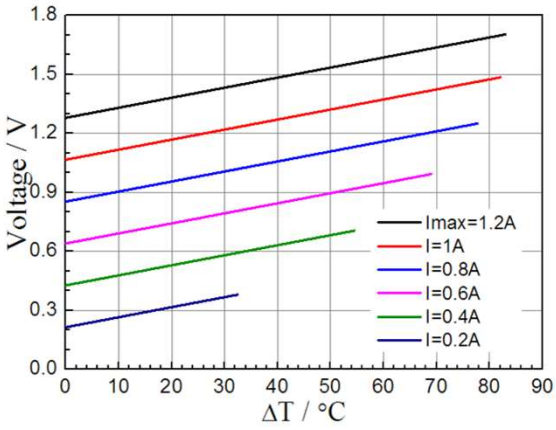


Performance Curves at Th=50 ºC



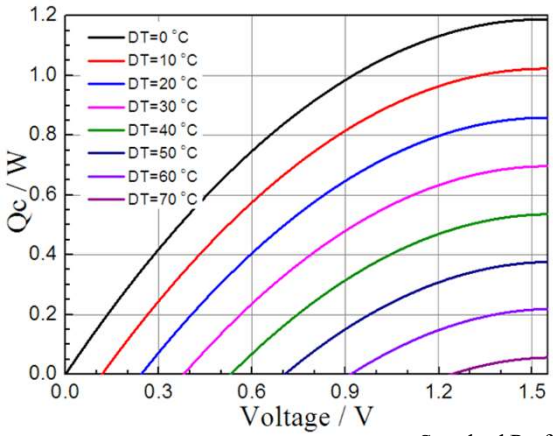
Standard Performance Graph Qc= f(DT)



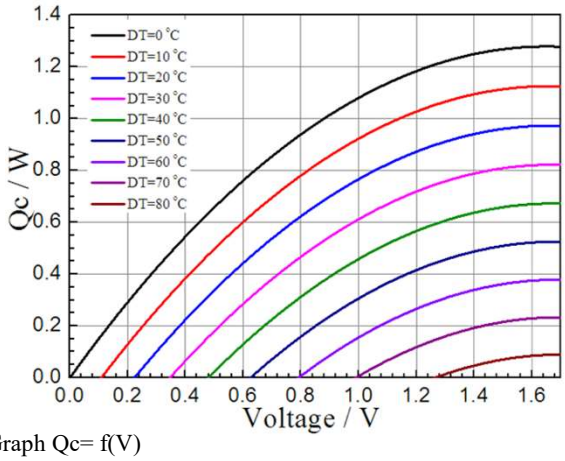


Standard Performance Graph V= f(DT)

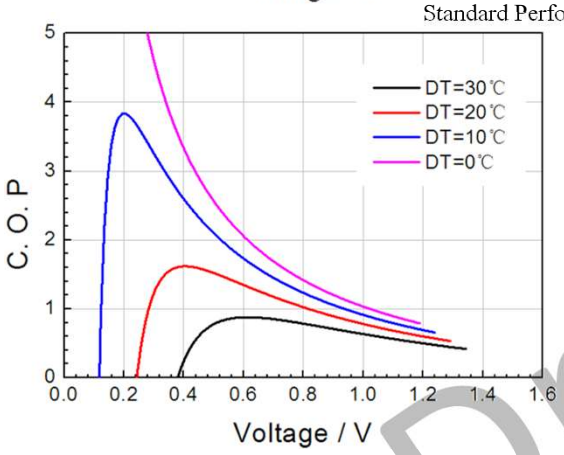
Performance Curves at Th=27 ºC

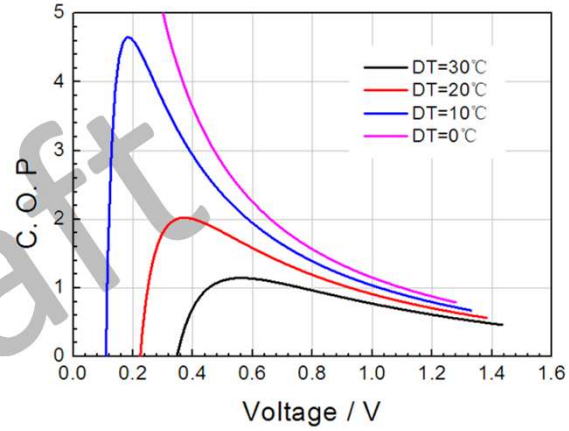


Performance Curves at Th=50 ºC

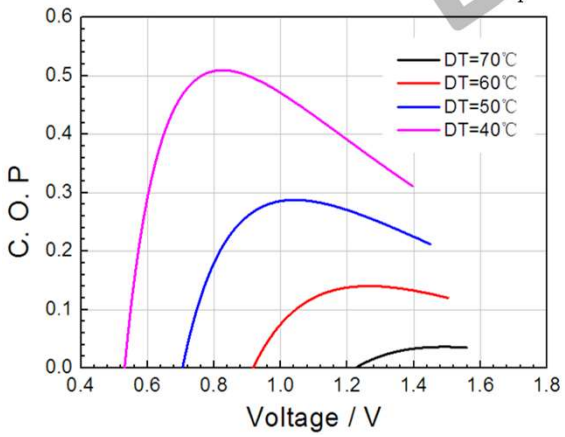


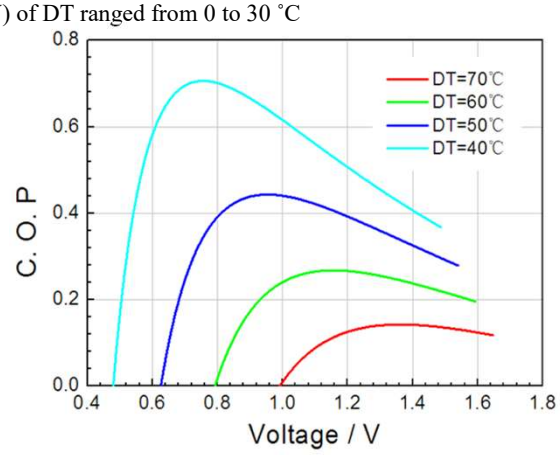
Standard Performance Graph Qc= f(V)





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.