Specification of Thermoelectric Module

TEC2-127-63-08

Description

The TEC2-127-63-08 is a multistage module designed for greater temperature differential cooling, good for cooling and heating up to 100 °C applications. It is a 127-63 couples module in size of 40 mm × 40 mm (top) / 40 mm × 40 mm (bottom). If higher operation or processing temperature is required, please specify, we can design and manufacture according to your special requirements.

Features

- High Temperature Differential
- 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

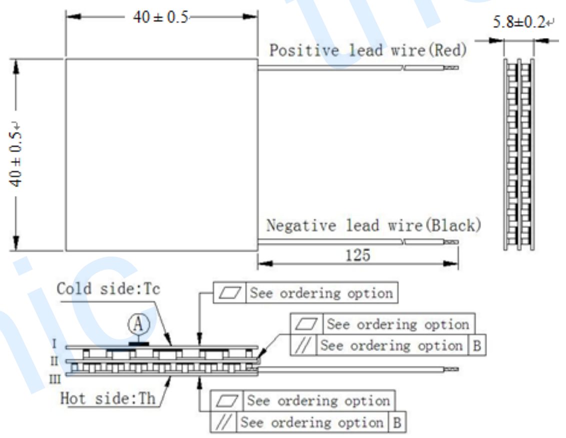
Application

- Infrared (IR) Sensors
- CCD Sensor
- Gas Analyzers
- Calibration Equipment
- CPU cooler and scientific instrument
- Photonic and medical systems
- Guidance Systems

Performance Specification Sheet

Th (°C)	27	50	Hot side temperature at environment: dry air, N_2
DT_{max} (°C)	90	100	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U_{max} (Voltage)	16.1	17.6	Voltage applied to the module at DT_{max}
I_{max} (Amps)	8.0	8.0	DC current through the modules at DT_{max}
Q_{Cmax} (Watts)	51.7	55.6	Cooling capacity at cold side of the module under DT=0 °C
AC resistance (Ohms)	1.59	1.71	The module resistance is tested under AC
Tolerance (%)	± 10		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



Sealing Option

A. Solder:

1. T100: BiSn (Melting Point=138℃)
2. T200: CuSn (Melting Point= 227 °C)

B. Sealant:

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

C. Ceramics:

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

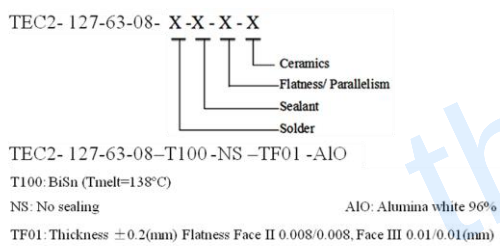
D. Ceramics Surface Options:

1. Blank ceramics (not metalized)
2. Metalized (Copper-Nickel plating)

Ordering Option

Suffix	Thickness (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0:5.8±0.2	0: Face II 0.010/0.010, Face III 0.015/0.015	125±1/Specify
TF	1: 5.8±0.15	1: Face II 0.008/0.008, Face III 0.010/0.010	125±1/Specify
TF	2: 5.8±0.1	2: Face II 0.005/0.005, Face III 0.008/0.008	125±1/Specify
Eg. TF01: Thickness 5.8±0.2(mm) and Face II 0.008/0.008, Face III 0.01/0.01			

Naming for the Module



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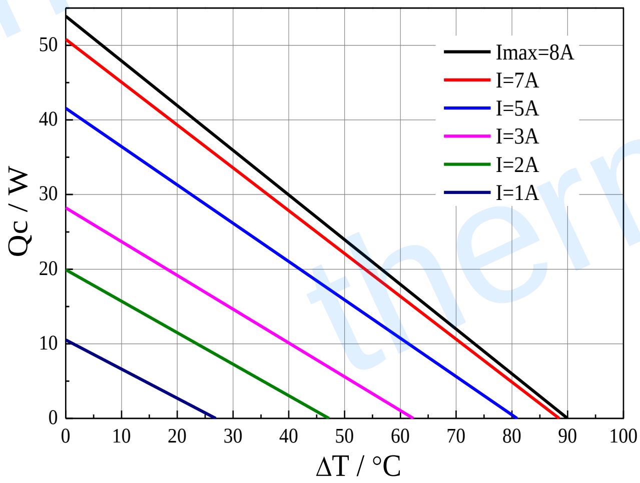
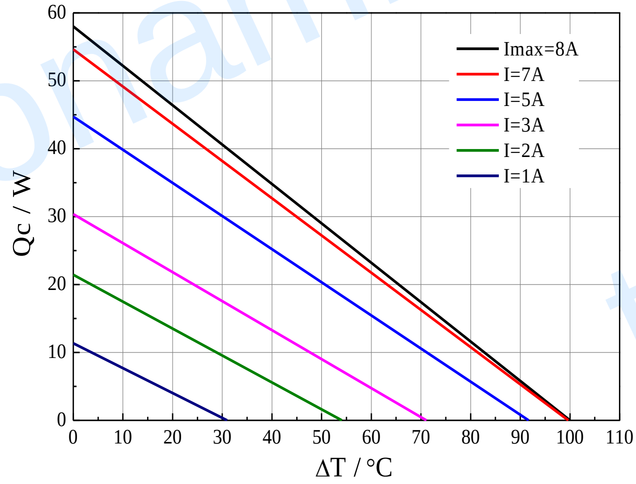
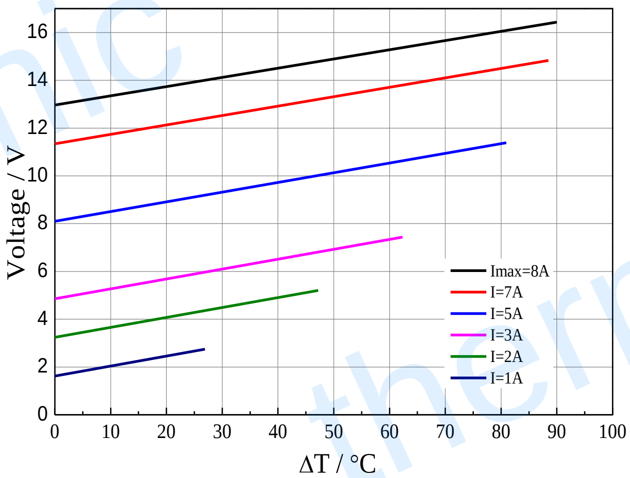
Performance Curves at Th=27 ℃

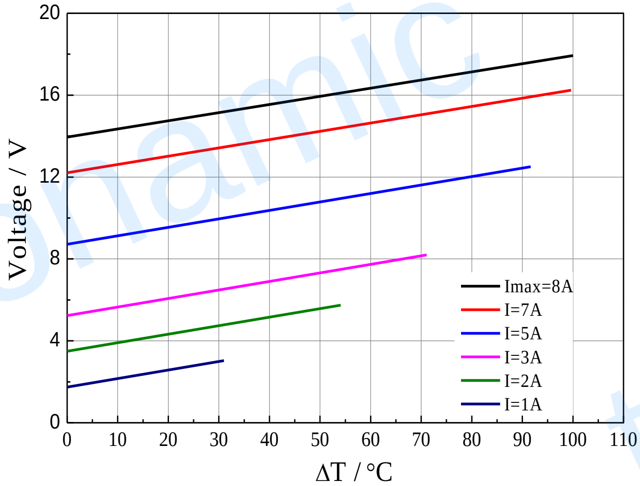


Performance Curves at Th=50 ℃

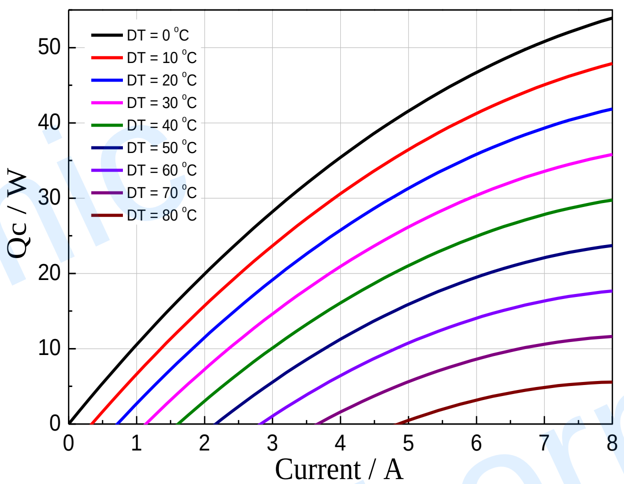


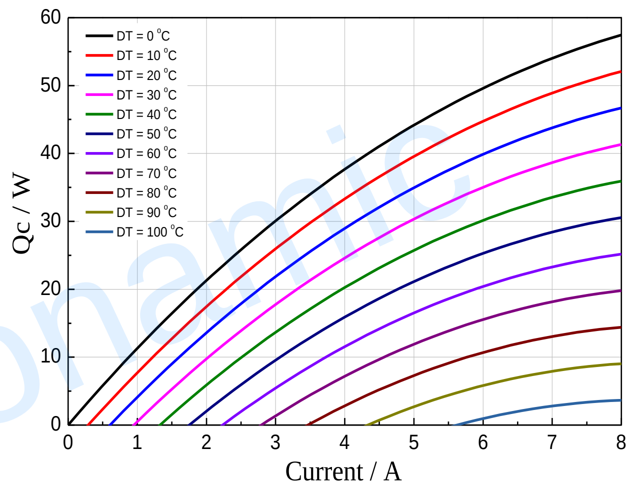
Standard Performance Graph Qc= f(DT)





Standard Performance Graph V= f(ΔT)





Standard Performance Graph Qc= f(V)

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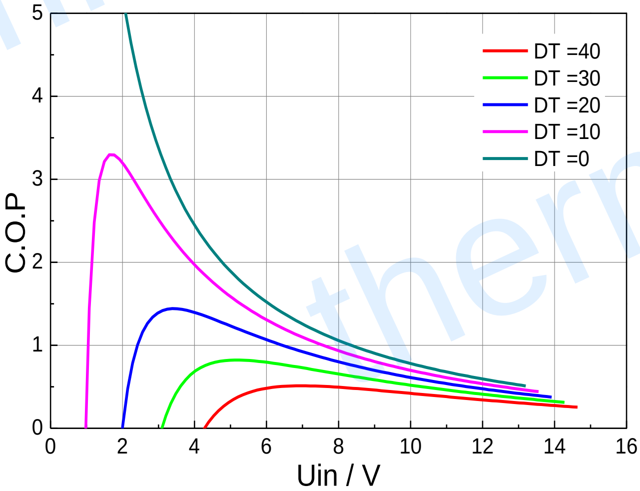
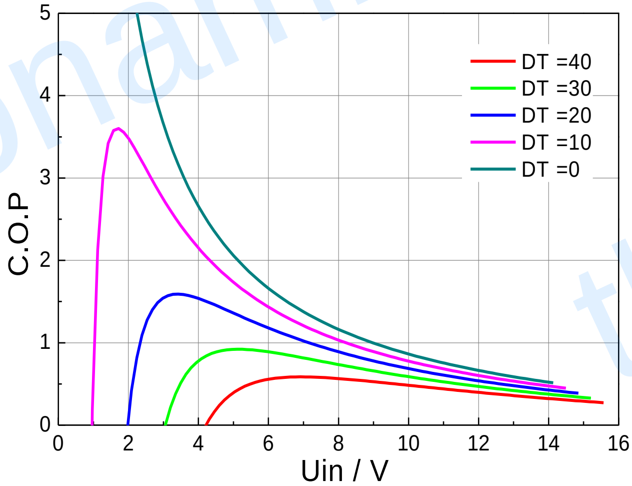
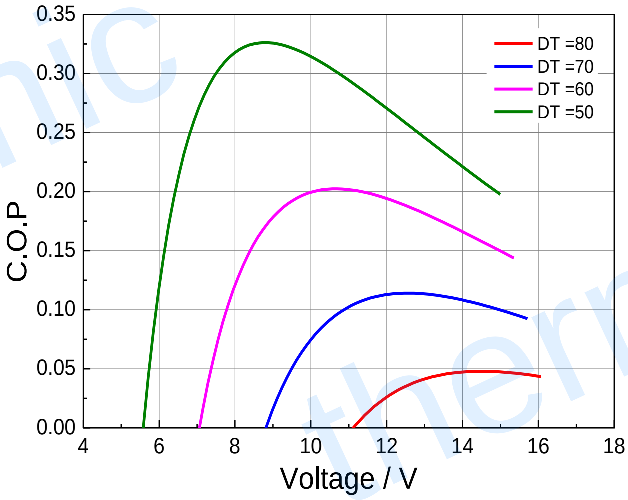
Performance Curves at Th=27 ℃

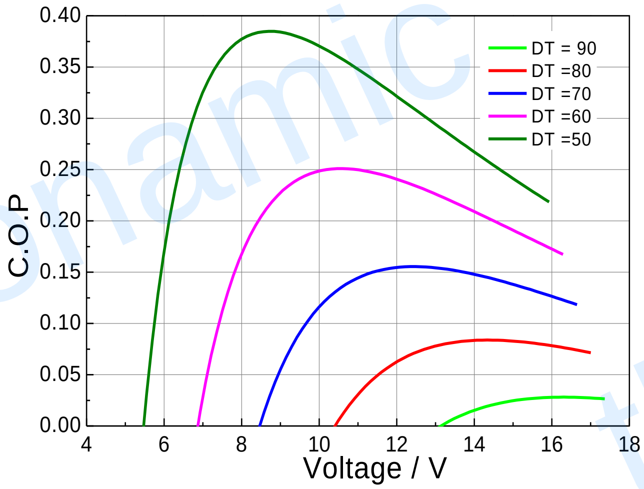


Performance Curves at Th=50 ℃



Standard Performance Graph COP = f(V) of DT ranged from 0 to 40 ˚C





Standard Performance Graph COP = f(V) of DT ranged from 50 to 80/90 ˚C

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

Operation Caution

- Cold side of the module stuck on the object being cooled
- Hot side of the module mounted on a heat radiator
- Operation below I_{max} or V_{max}
- Work under DC

Note: All specifications subject to change without notice.

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