Specification of Thermoelectric Module

TES2-127-127-30

Description

The TES2-127-127-30 is a multistage module designed for greater temperature differential cooling, good for cooling and heating up to 100 ℃ applications. It is a 127-127 couples module in size of 30 mm × 30 mm (top)/30 mm × 30 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

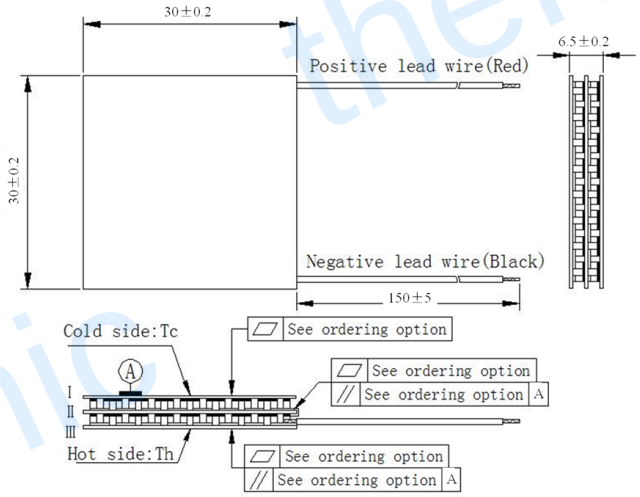
Application

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

Performance Specification Sheet

Th (℃)	27	50	Hot side temperature at environment: dry air, N_2
DT_{max} (℃)	93	104	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U_{max} (Voltage)	14.6	16.4	Voltage applied to the module at DT_{max}
I_{max} (amps)	3.6	3.6	DC current through the modules at DT_{max}
Q_{Cmax} (Watts)	15.3	16.8	Cooling capacity at cold side of the module under DT=0℃
AC resistance (Ohms)	3.8	4.15	The module resistance is tested under AC
Tolerance (%)	± 10		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



Manufacturing Options

A. Solder:

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

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	0:6.5±0.2	0: Face II 0.10/0.10, Face III 0.05/0.05	150±5/Specify
TF	1:6.5±0.1	1: Face II 0.05/0.05, Face III 0.025/0.025	150±5/Specify
TF01: Thickness 6.5±0.2(mm) and Face II 0.05/0.05, Face III 0.025/0.025			

Naming for the Module

TES2-127-127-30-X-X-X-X

- Ceramics
- Flatness/ Parallelism
- Sealant
- Solder

TES2-127-127-30–T100-NS–TF01-AlO

T100: BiSn(Tmelt=138°C)

NS: No sealing

AlO: Alumina white 96%

TF01: Thickness ±0.2(mm) and Face II 0.05/0.05, Face III 0.025/0.025

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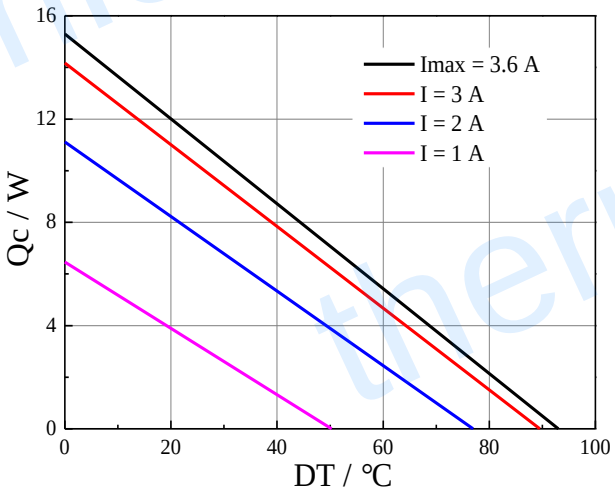
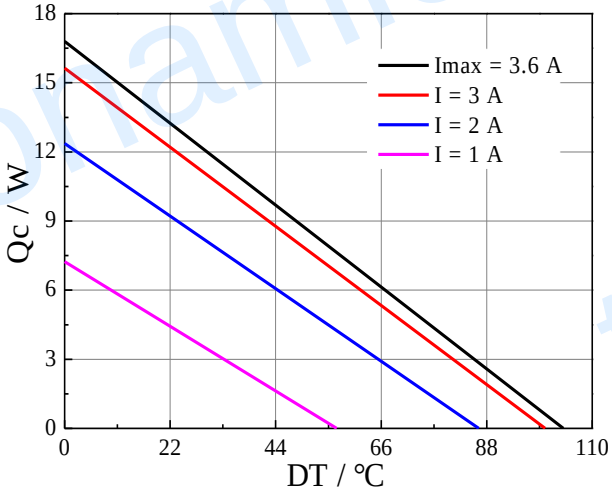
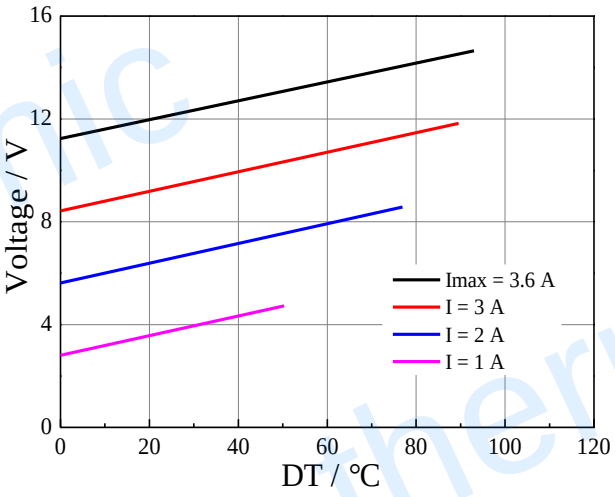
Performance Curves at Th=27 ℃

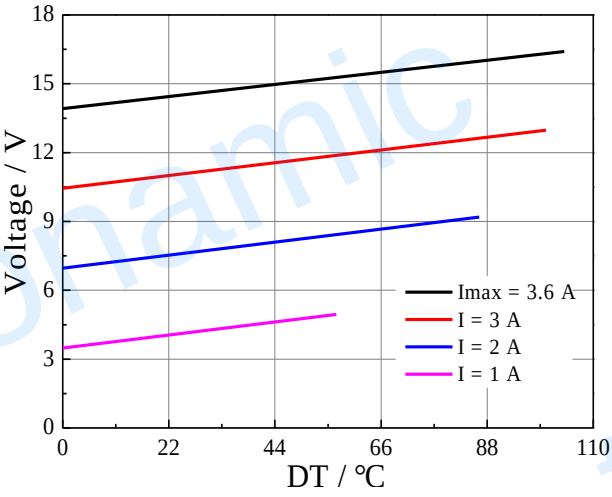


Performance Curves at Th=50 ℃

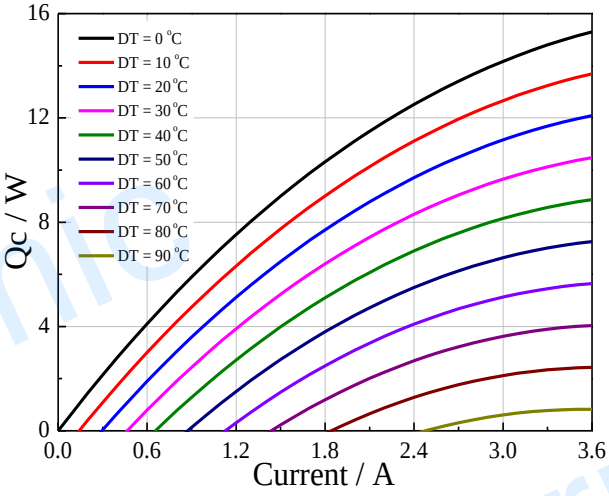


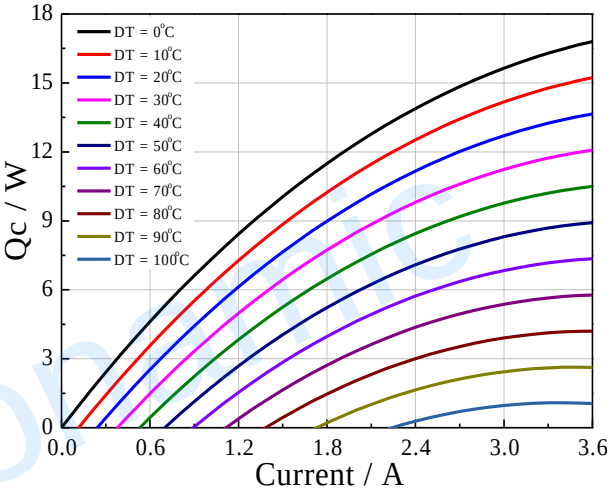
Standard Performance Graph Qc= f(DT)





Standard Performance Graph V= f(DT)





Standard Performance Graph Qc= f(I)

Operation Cautions

- 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