Specification of Thermoelectric Module

TETC2-127-31-05LT200-SS-TF01-AlO

Description

The TETC2-127-31-05L is a multistage module designed for greater temperature differential cooling, it is a 127-31 couples module in size of 40 mm × 40 mm (top) / 40 mm × 40 mm (bottom). The module is made of selected high performance ingot and fabricated by our unique "soft" processes to achieve superior cooling/heating performance. It is able to run million thermal cycles in 70 °C temperature change range with less 3% degrading, good for the need of frequently cooling and heating up to 180℃ applications. 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

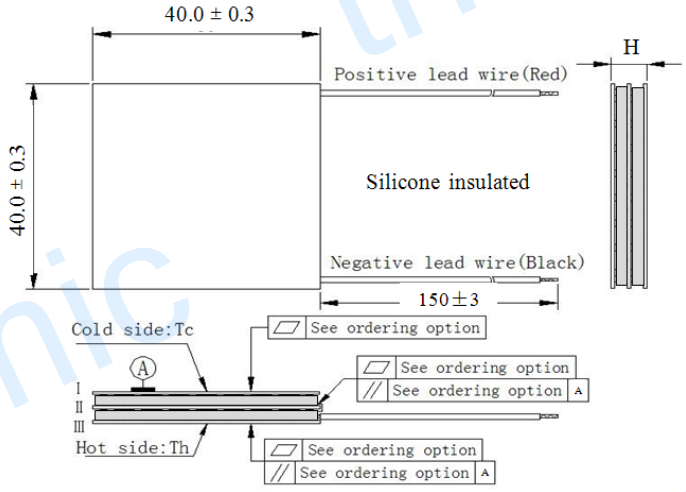
Application

- 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)	101	113	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U_{max} (Voltage)	15.9	17.3	Voltage applied to the module at DT_{max}
I_{max} (Amps)	5.0	5.0	DC current through the modules at DT_{max}
Q_{Cmax} (Watts)	19.2	20.6	Cooling capacity at cold side of the module under DT=0 °C
AC resistance (Ohms)	2.65	2.85	The module resistance is tested under AC
Tolerance (%)	± 10		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



Manufacturing Options

A. Solder:

T200: CuAgSn (M.P.= 217°C)

B. Sealant:

SS: Silicone sealant

C. Ceramics:

AlO: Alumina (Al_2O_3, white 96%)

D. Ceramics Surface Options:

Blank ceramics (not metalized)

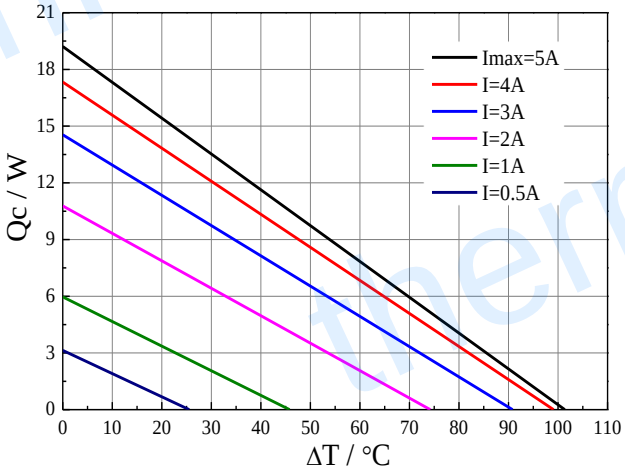
Ordering Option

Suffix	Thickness (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0: 9 ± 0.2	1: Face II 0.03/0.03, Face III 0.03/0.03	150 ± 3 / Specify

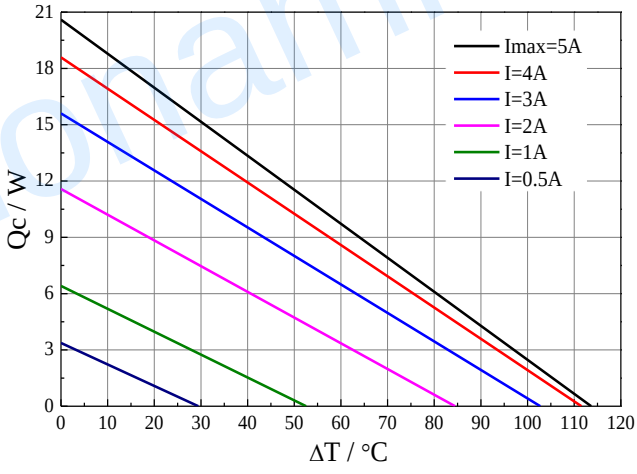
Specification of Thermoelectric Module

TETC2-127-31-05LT200-SS-TF01-AlO

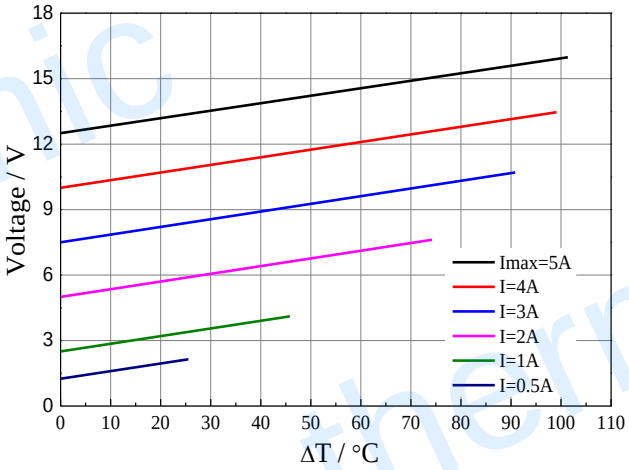
Performance Curves at Th=27 ºC

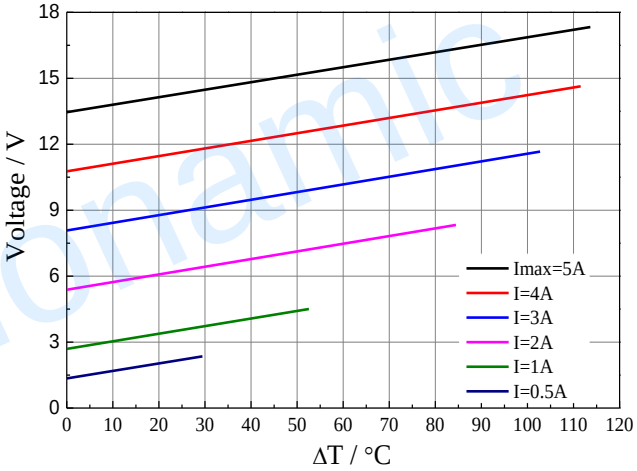


Performance Curves at Th=50 ºC

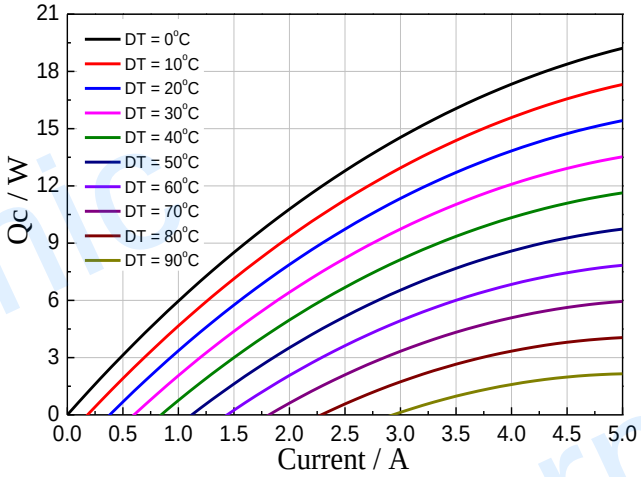


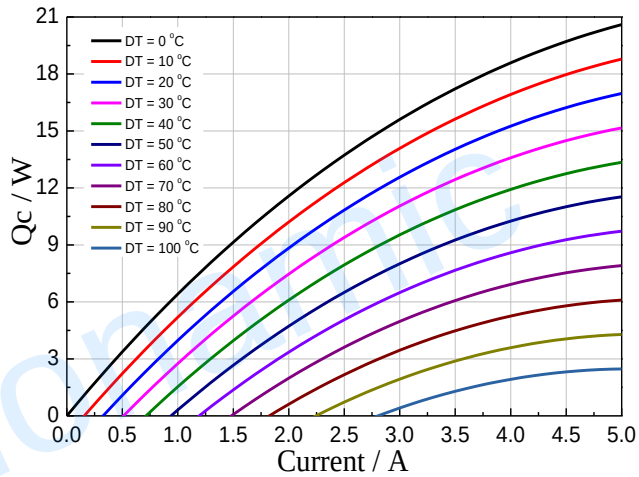
Standard Performance Graph Qc= f(DT)





Standard Performance Graph V= f(ΔT)



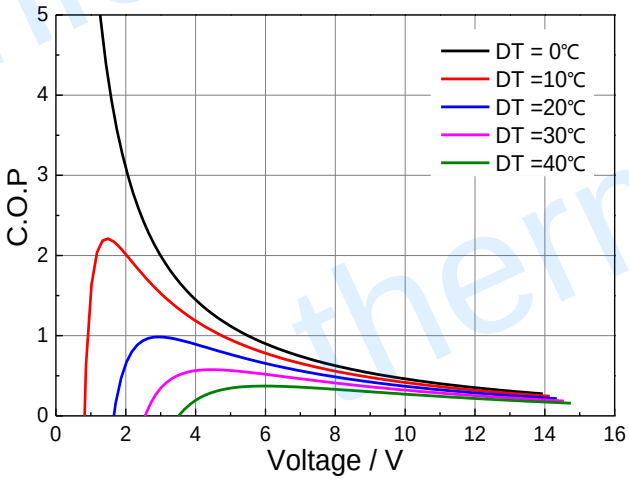


Standard Performance Graph Qc= f(V)

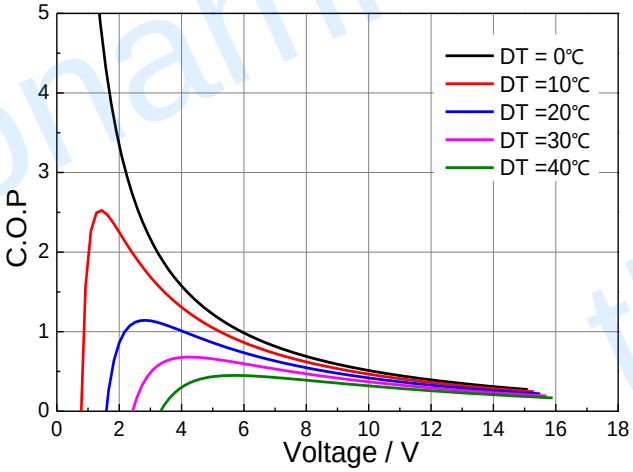
Specification of Thermoelectric Module

TETC2-127-31-05LT200-SS-TF01-AlO

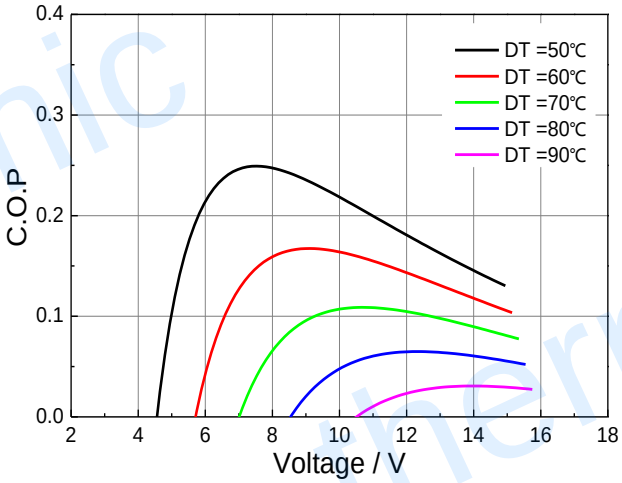
Performance Curves at Th=27 ºC

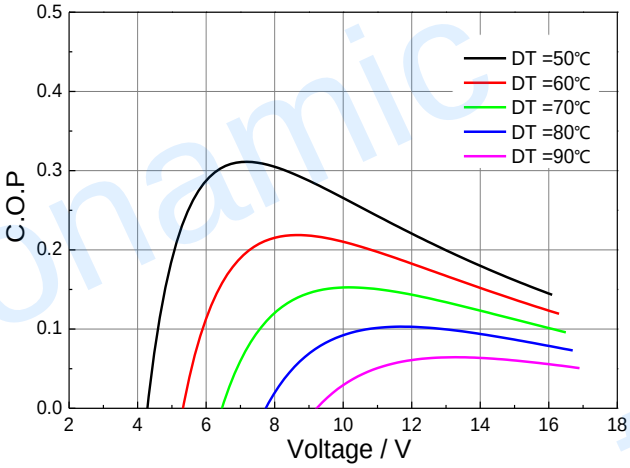


Performance Curves at Th=50 ºC



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 90/100 ˚C

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

Operation Cautions

- Cold side of the module stuck on the object being cooled
- Hot side of the module mounted on a heat radiator
- Storage module below 100 ºC
- Operation below I_{max} or V_{max}
- Work under DC