Specification of Thermoelectric Module

TES2-71-36-29T100-AlO

Description

The TES2-71-36-29 is a multistage module designed for greater temperature differential cooling, good for cooling and heating up to 100 ℃ applications. It is a 71-36 couples module in size of 22.6 mm × 22.6 mm (top) / 22.6 mm × 22.6 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

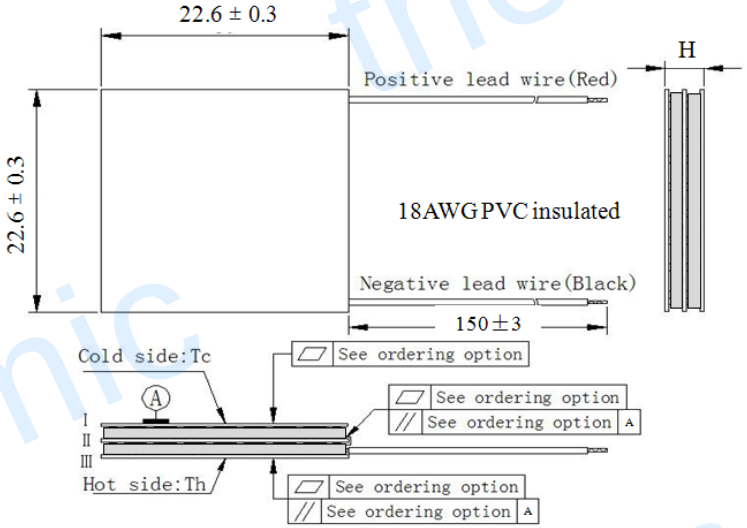
Application

- 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)	88.7	99.8	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U_{max} (Voltage)	9.2	10.0	Voltage applied to the module at DT_{max}
I_{max} (Amps)	2.9	2.9	DC current through the modules at DT_{max}
Q_{Cmax} (Watts)	11.1	11.9	Cooling capacity at cold side of the module under DT=0 °C
AC resistance (Ohms)	2.76	3.00	The module resistance is tested under AC
Tolerance (%)	± 10		For thermal and electricity parameters

Geometric Characteristics Dimensions in millimeters



Manufacturing Options

A. Solder:

T100: BiSn (Tmelt=138ºC)

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 H (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0: 6.25±0.15	0: 0.10/0.10	150 ± 3 / Specify

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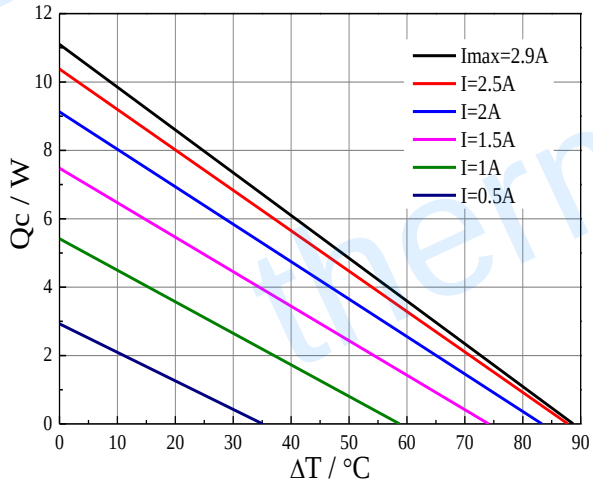
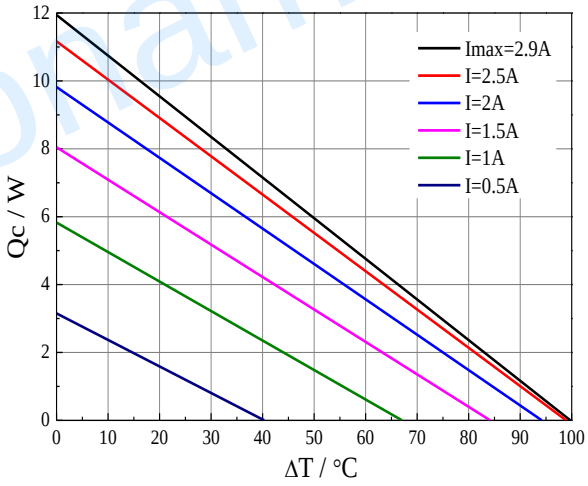
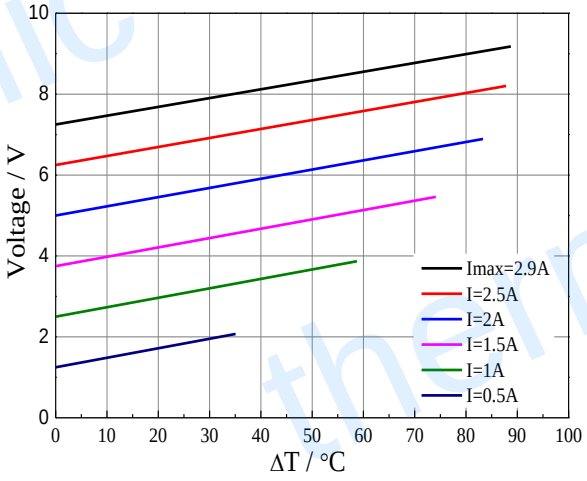
Performance Curves at Th=27 ºC

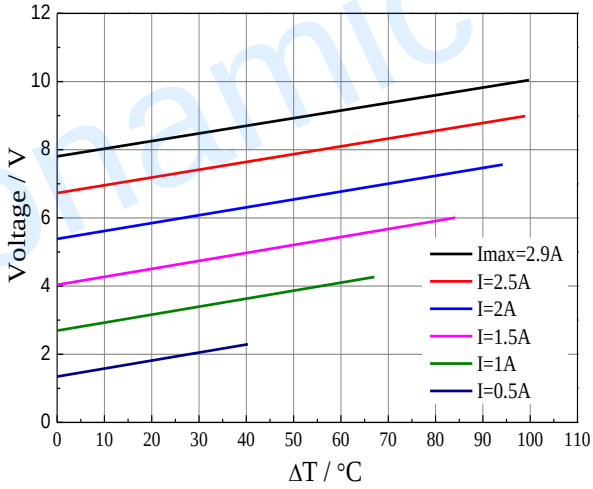


Performance Curves at Th=50 ºC

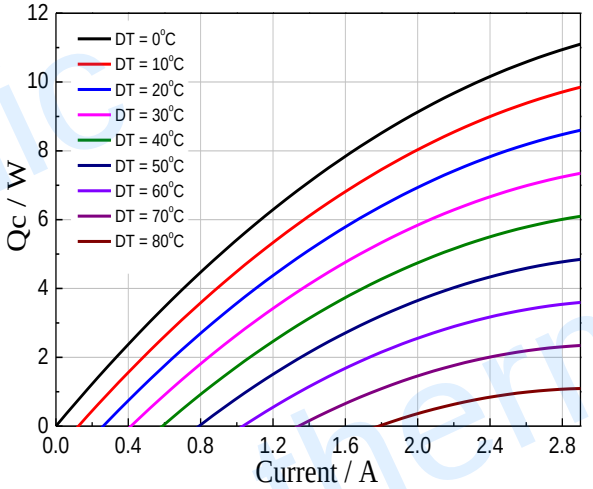


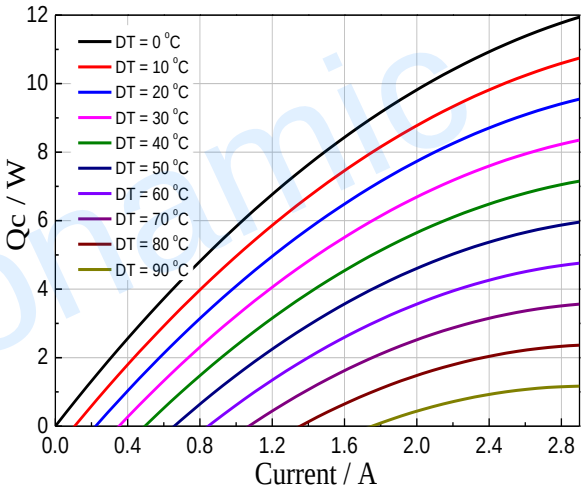
Standard Performance Graph Qc= f(DT)





Standard Performance Graph V= f(ΔT)





Standard Performance Graph Qc= f(I)

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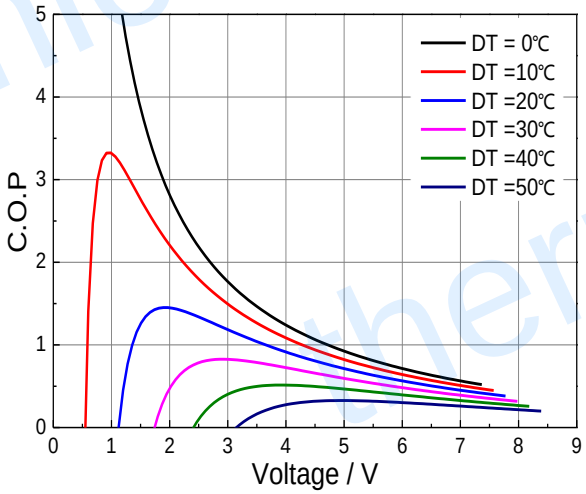
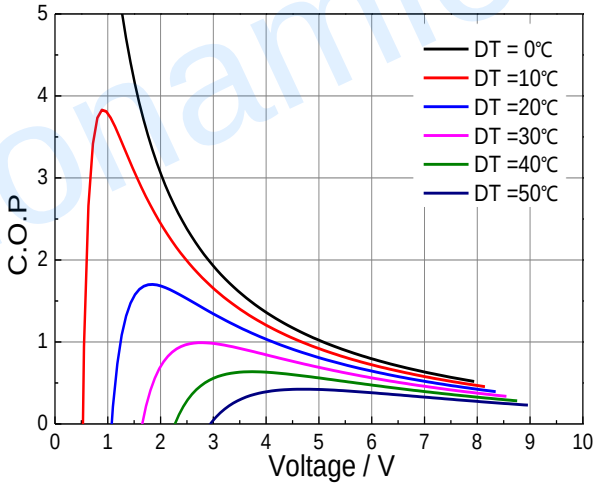
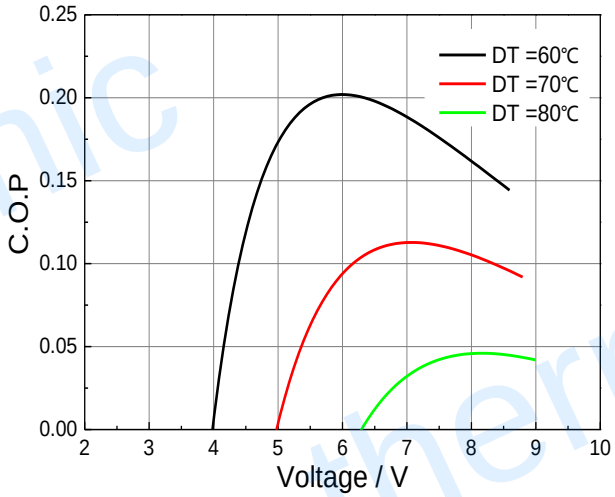
Performance Curves at Th=27 ºC

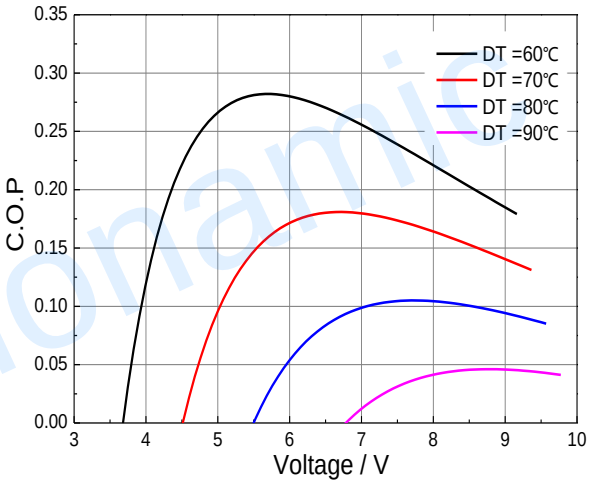


Performance Curves at Th=50 ºC



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





Standard Performance Graph COP = f(V) of DT ranged from 60 to 80/90 ˚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