# **Specification of Thermoelectric Module**

TEC2-127-65-04

### **Description**

The TEC2-127-65-04 is a multistage module designed for greater temperature differential cooling, good for cooling and heating up to 100 °C applications. It is a 127-65 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

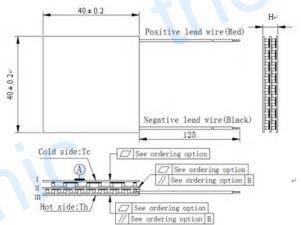
### **Application**

- 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 <sub>2</sub>	
DT <sub>max</sub> (°C)	91	104	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side	
U <sub>max</sub> (Voltage)	14.4	16.4	Voltage applied to the module at DT <sub>max</sub>	
I <sub>max</sub> (Amps)	4.2	4.2	DC current through the modules at DT <sub>max</sub>	
Q <sub>Cmax</sub> (Watts)	27.7	31.1	Cooling capacity at cold side of the module under DT=0 °C	
AC resistance (Ohms)	3.25	3.6	The module resistance is tested under AC	
Tolerance (%)	± 10		For thermal and electricity parameters	

#### Geometric Characteristics Dimensions in millimeters



## **Ordering Option**

Suffix Thickness		Flatness/ Parallelism (mm)	Lead wire length(mm)				
	(mm)	Francess/ Faranciism (mm)	Standard/Optional length				
TF	$0:8.1\pm0.2$	0: Face II 0.08/0.08, Face III 0.08/0.08	$125 \pm 5$ / Specify				
TF	1: 8.1 ± 0.1	1: Face II 0.03/0.03, Face III 0.03/0.03	125 ± 5 / Specify				
Eg. TF01: Thickness $\pm$ 0.2(mm) and Flatness Face II 0.03/0.03, Face III 0.03/0.03							

## **Manufacturing Options**

#### A. Solder:

#### B. Sealant:

1. T100: BiSn (Tmelt=138°C)

1. NS: No sealing (Standard)

2. T200: CuAgSn (Tmelt =  $217^{\circ}$ C)

2. SS: Silicone sealant

3. T240: SbSn (Tmelt =  $240^{\circ}$ C)

3. EPS: Epoxy sealant

#### C. Ceramics:

#### **D. Ceramics Surface Options:**

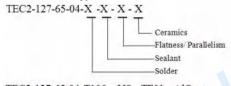
1. Alumina (Al<sub>2</sub>O<sub>3</sub>, white 96%)

1. Blank ceramics (not metalized)

2. Aluminum Nitride (AlN)

2. Metalized

## Naming for the Module



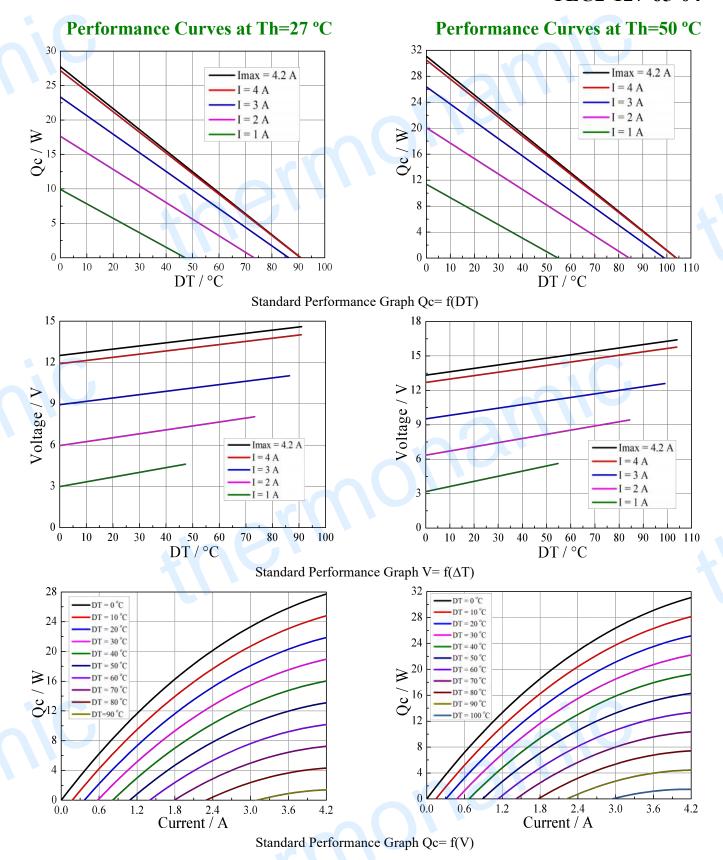
TEC2-127-65-04-T100 - NS - TF01 - AlO

T100: Solder, BiSn (Melting Point=138 ℃)

NS: No sealing AlO: Alumina white 96% TF01: Thickness ±0.2(mm) and Flatness/Parallelism 0.10/0.10mm)

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## **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
- Operation below I<sub>max</sub> or V<sub>max</sub>
- Work under DC