

# Specification of Thermoelectric Module

**TEC1-03106**

## Description

The 31 couples, 20mmx20mm size module is a single stage module which is designed for cooling and heating up to 100°C applications. If higher operation or processing temperature is required, please specify, we can design and manufacture the custom made module according to your special requirements.

## Features

- 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

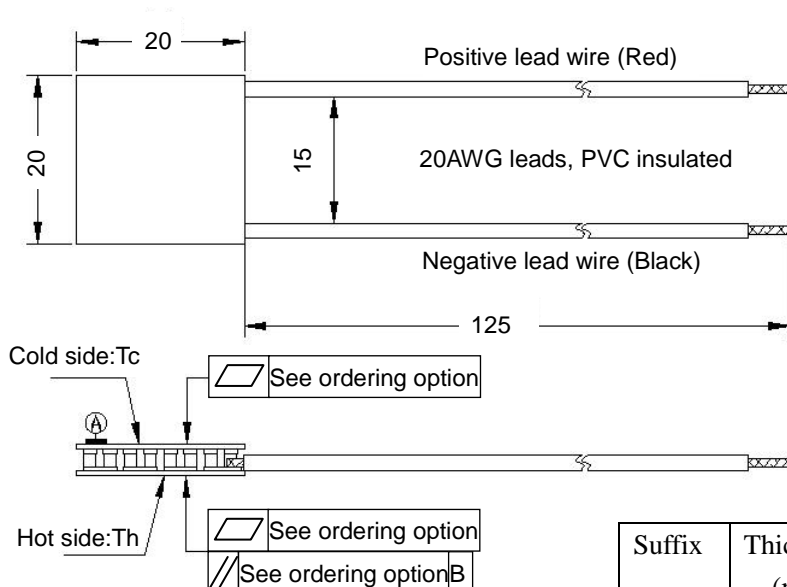
## Application

- Food and beverage service refrigerator
- Portable cooler box for cars
- Liquid cooling
- Temperature stabilizer
- CPU cooler and scientific instrument
- Photonic and medical systems

## Performance Specification Sheet

Th(°C)	27	50	Hot side temperature at environment: dry air, N <sub>2</sub>
DT <sub>max</sub> (°C)	68	76	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U <sub>max</sub> (Voltage)	3.7	4.1	Voltage applied to the module at DT <sub>max</sub>
I <sub>max</sub> (amps)	6.0	6.0	DC current through the modules at DT <sub>max</sub>
Q <sub>Cmax</sub> (Watts)	14.6	16.0	Cooling capacity at cold side of the module under DT=0°C
AC resistance(ohms)	0.45~0.6	0.49~0.66	The module resistance is tested under AC

## Geometric Characteristics Dimensions in millimeters



## Sealing Option

Suffix	Sealant
NS	No sealing
SS	Silicone sealant
EPS	Epoxy
OS	Customer specify sealing other than above

## Ordering Option

Suffix	Thickness (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0: 3.8±0.1	0: 0.020/0.020	125±1/Specify
TF	1: 3.8±0.05	1: 0.015/0.015	125±1/Specify
TF	2: 3.8±0.03	2: 0.01/0.01	125±1/Specify
Eg. TF01: Thickness 3.8±0.1(mm) and Flatness 0.015/0.015(mm)			

## Additional

Ceramic material: Alumina (Al<sub>2</sub>O<sub>3</sub>, white 96%)

Solder tinning: Bismuth Tin (BiSn) M.P. 138°C

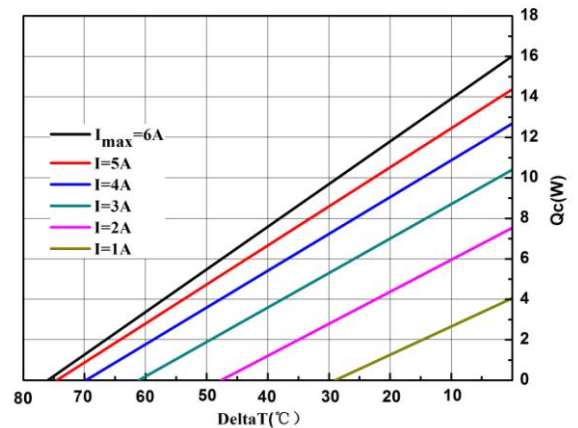
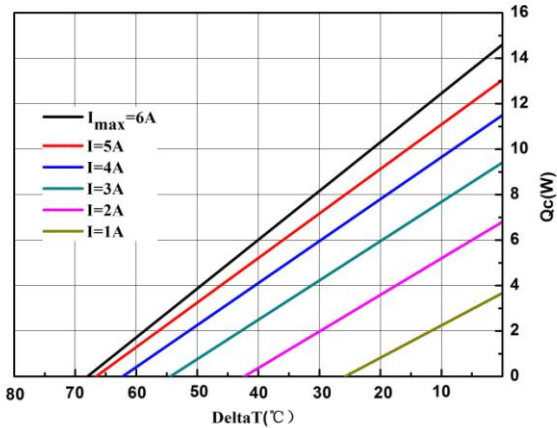
**Creative technology with fine manufacturing processes provides you the reliable and quality products.**

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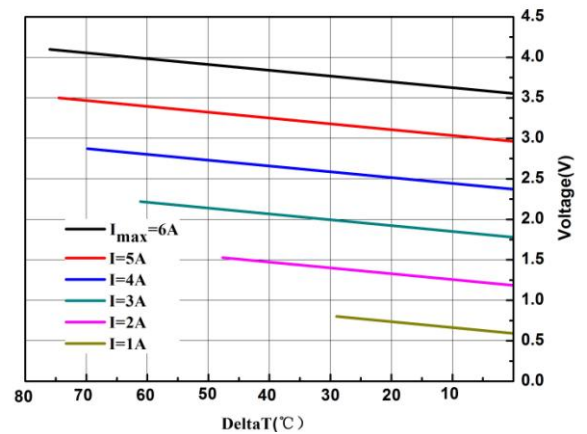
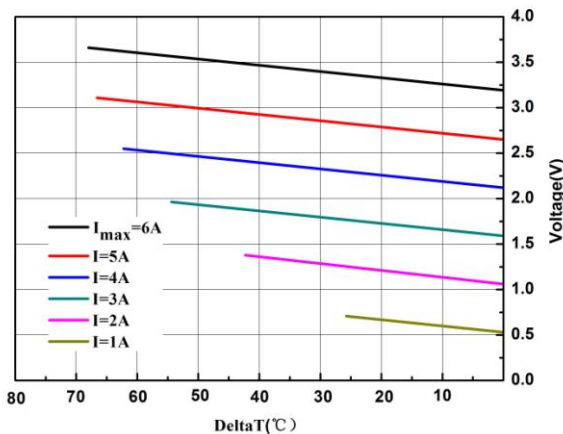
## Performance Curves at Th=27°C

## Performance Curves at Th=50°C



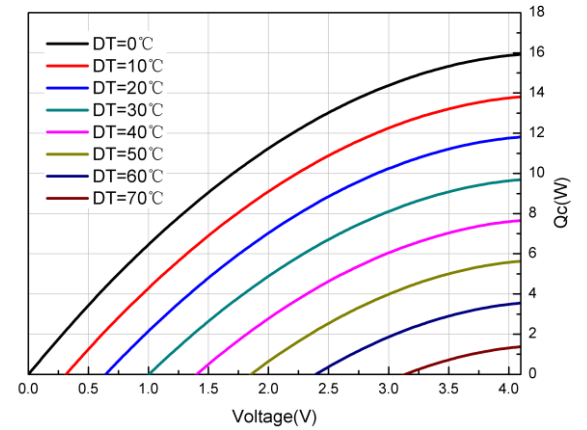
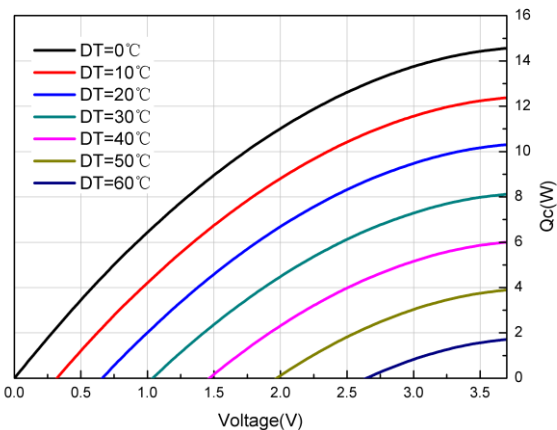
The chart for  $Q_c$  Vs  $\Delta T$  under various currents

The chart for  $Q_c$  Vs  $\Delta T$  under various currents



The chart for Voltage Vs  $\Delta T$  under various currents

The chart for Voltage Vs  $\Delta T$  under various currents



The chart for  $Q_c$  Vs Voltage under various  $\Delta T$

The chart for  $Q_c$  Vs Voltage under various  $\Delta T$

## Operation Cautions

- Cold side of the module stuck on the object being cooled
- Hot side of the module mounted on a heat radiator
- Work under DC
- Operation below  $I_{max}$  or  $V_{max}$
- Operation or storage module below  $100^\circ\text{C}$