



Description

The 18 couples, 2.0/2.7 mm × 2.0mm size module which is made of selected high performance ingot to achieve superior cooling performance and greater delta T up to 70 °C, designed for superior cooling and heating up to 200°C applications in photonics. It has maximum 200°C processing temperature. 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

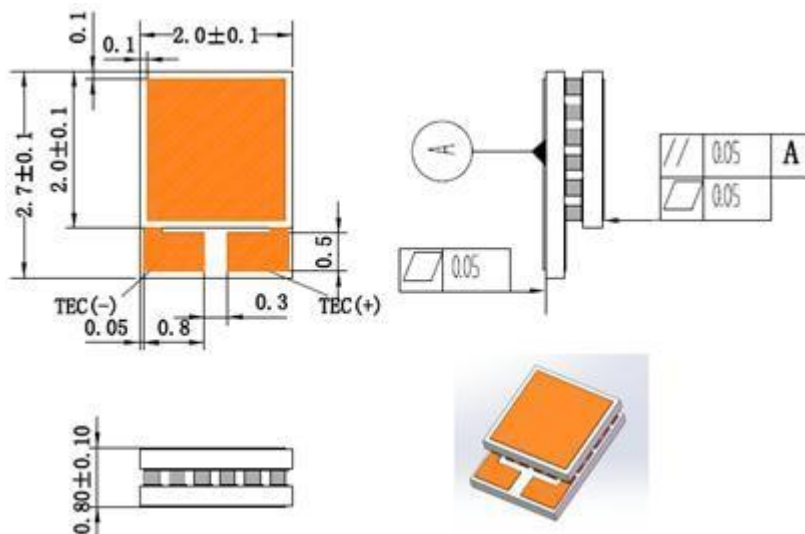
Applications

- Photonics
- Temperature stabilizer

Electrical Characteristics

Th (°C)	27	50	Hot side temperature at environment: dry air, N ₂
DT _{max} (°C)	70	79	Temperature Difference between cold and hot side of the module when cooling capacity is zero at cold side
U _{max} (Voltage)	2.24	2.41	Voltage applied to the module at DT _{max}
I _{max} (Amps)	0.96	0.96	DC current through the modules at DT _{max}
Q _{Cmax} (Watts)	1.38	1.49	Cooling capacity at cold side of the module under DT=0 °C
AC resistance (Ohms)	2.00	2.15	The module resistance is tested under AC
Tolerance (%)	10%		For thermal and electricity parameters

Geometric Characteristics (Dimensions in millimeters)



Manufacturing Options

A. Solder:

T280: AuSn (T_{melt}=280°C)

B. Sealant:

NS: No sealing

C. Ceramics:

Aluminum Nitride (AlN)

D. Ceramics Surface Options:

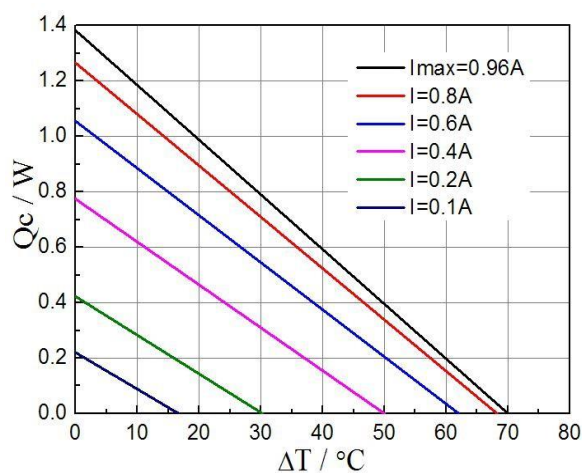
Hot side: Metalized (Au plating)

Cold side: Metalized (Au plating)

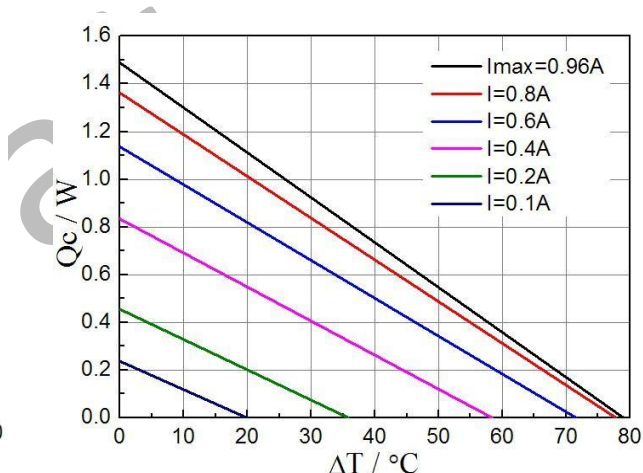
Ordering Option

Suffix	Thickness H (mm)	Flatness/ Parallelism (mm)	Lead wire length(mm) Standard/Optional length
TF	0:0.80±0.10	0:0.05/0.05	No Wires

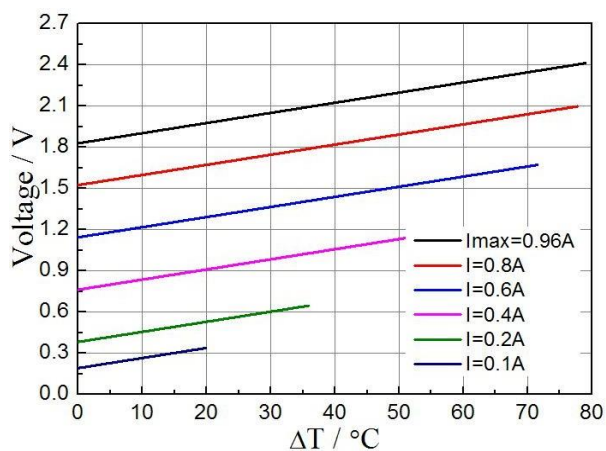
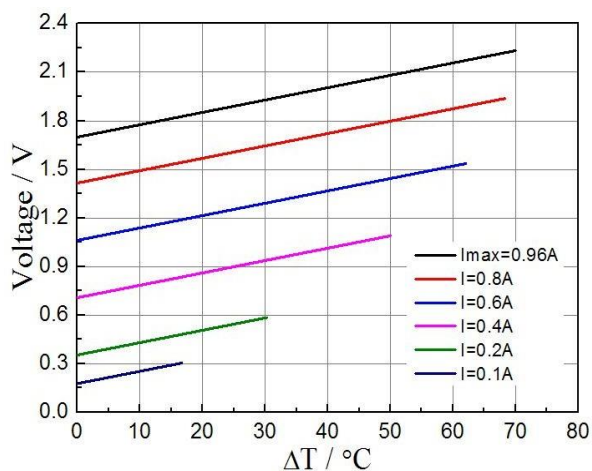
Performance Curves at Th=27 °C



Performance Curves at Th=50 °C

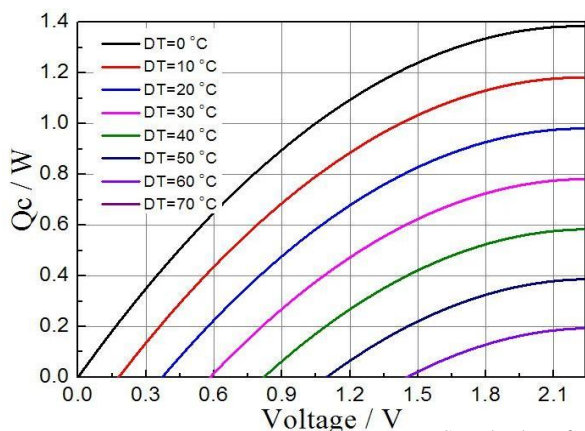


Standard Performance Graph Q_c= f(ΔT)

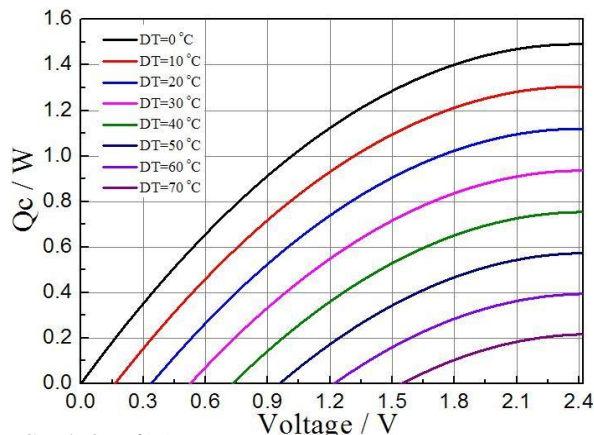


Standard Performance Graph V= f(ΔT)

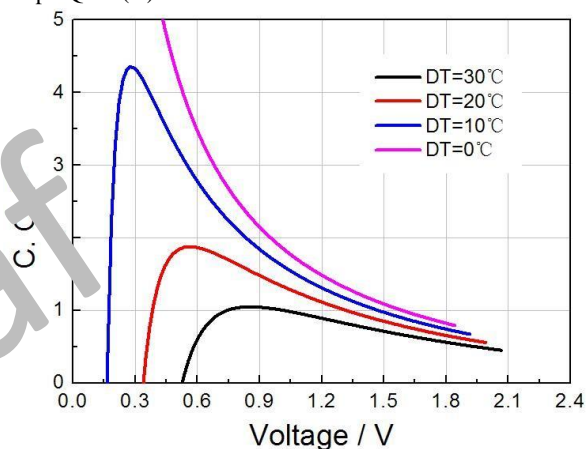
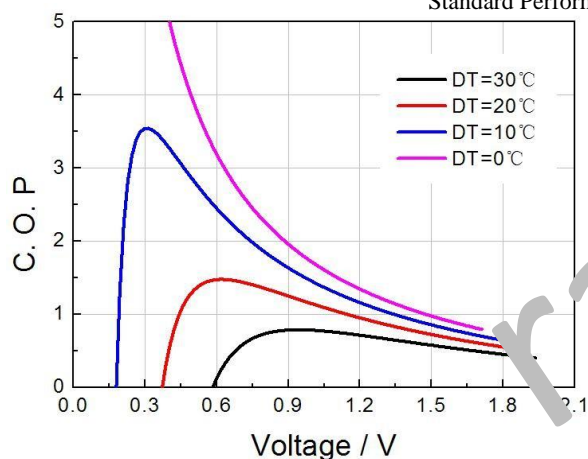
Performance Curves at $T_h=27^\circ\text{C}$



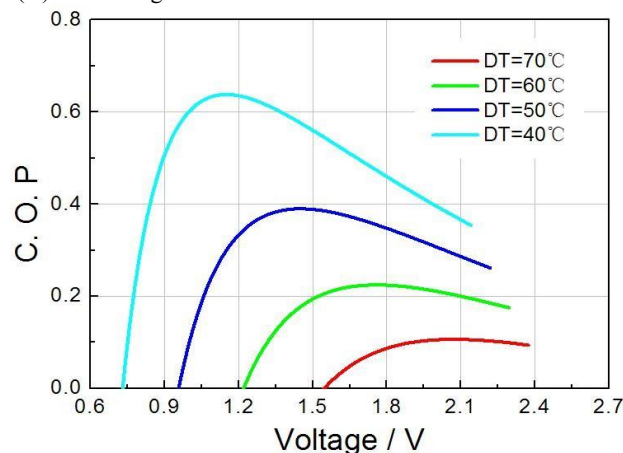
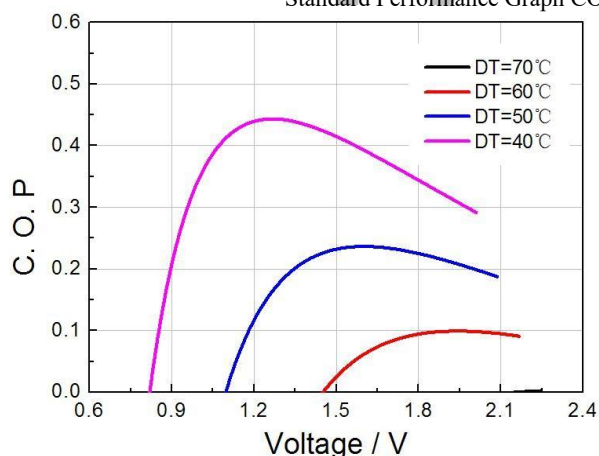
Performance Curves at $T_h=50^\circ\text{C}$



Standard Performance Graph $Q_c = f(V)$



Standard Performance Graph $COP = f(V)$ of DT ranged from 0 to 30°C



Standard Performance Graph $COP = f(V)$ of DT ranged from 40 to $60/70^\circ\text{C}$

Remark: The coefficient of performance (COP) is the cooling power Q_c /Input power ($V \times I$).

Operation Caution

- 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_{max} or V_{max}
- Work under DC

Note: All specifications subject to change without notice.