

Specification of Thermoelectric Module

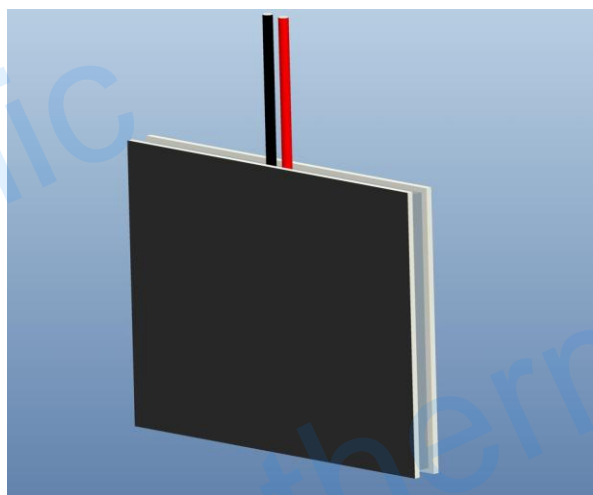
TELBP1-12656-0.45

Description

The power module is designed and manufactured by our unique technology for converting heat source directly into electricity. The module is constructed with the mixture of Lead Tin Tellurium and Bismuth Tellurium to tap the both advantage of two types materials for heat source of 200-360 °C. It can run in the temperature of as high as 360 °C (680 °F) heat source continuously and up to 400 °C (752 °F) intermittently. The thermoelectric module will generate DC electricity as long as there is a temperature difference across the module. The more power will be generated when the temperature difference across the module becomes larger, and the efficiency of converting heat energy into electricity will increase therefore. The module is stuck with the high thermal conductivity graphite sheet on its both sides ceramic plates to provide low contact thermal resistance, hence you do not need to apply thermal grease or other heat transfer compound when you install the module. The graphite sheet can work well in extremely high temperature.

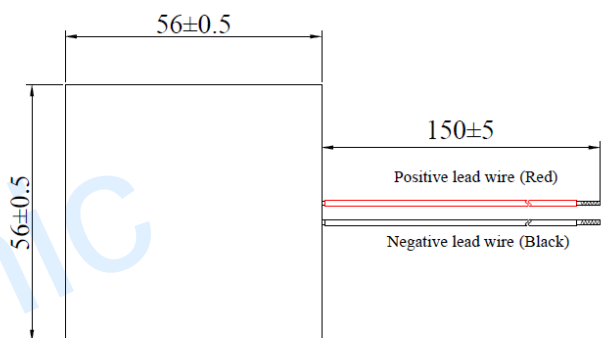
Patent NO.: ZL 2010 1 0193517.9

Specification of the Module

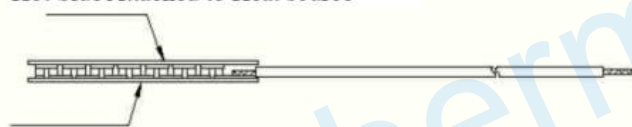


Hot Side Temperature / Th (°C)	350
Cold Side Temperature / Tc (°C)	30
Open Circuit Voltage (V)	9.2
Matched Load Resistance (ohms)	0.97
Matched load output voltage (V)	4.6
Matched load output current (A)	4.7
Matched load output power (W)	21.7
Heat flow across the module(W)	≈ 247
Heat flow density(W cm ⁻²)	≈ 7.9
AC Resistance (ohms) Measured under 27 °C at 1000 Hz	0.42 ~ 0.52

Geometric Characteristics Dimensions in millimeter

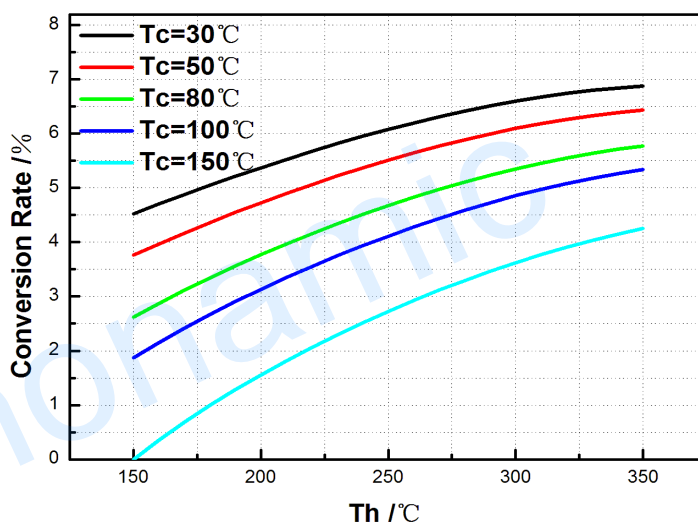


Hot Side Attached to Heat source



Cold Side Attached to Heat Sink for Heat Dissipation

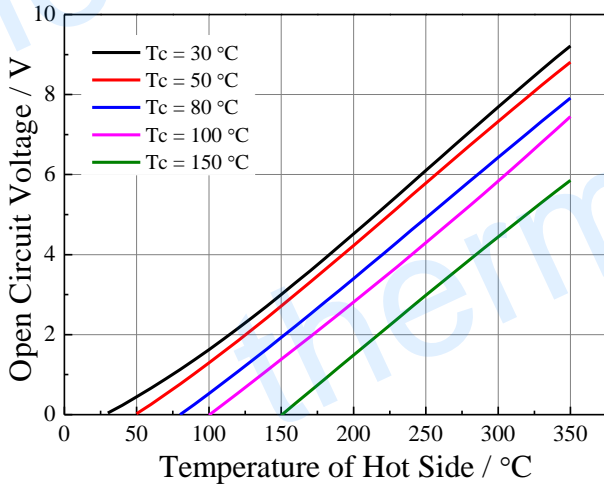
Conversion Rate of the modules Vs Th under various Tc



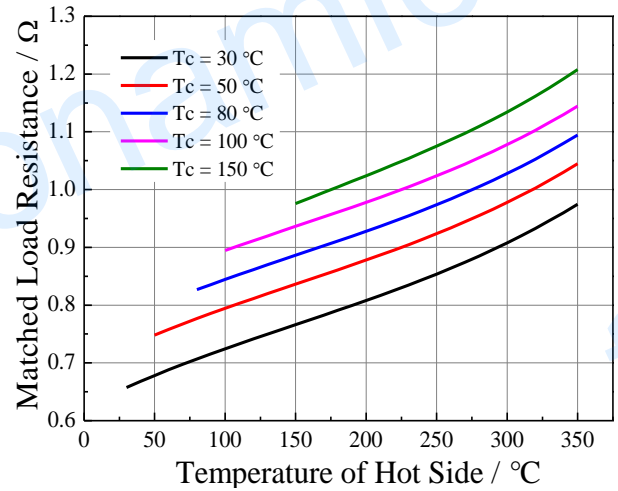
Noted: Conversion rate = Matched load output power/Heat flow through the module

Performance Curves of the Module

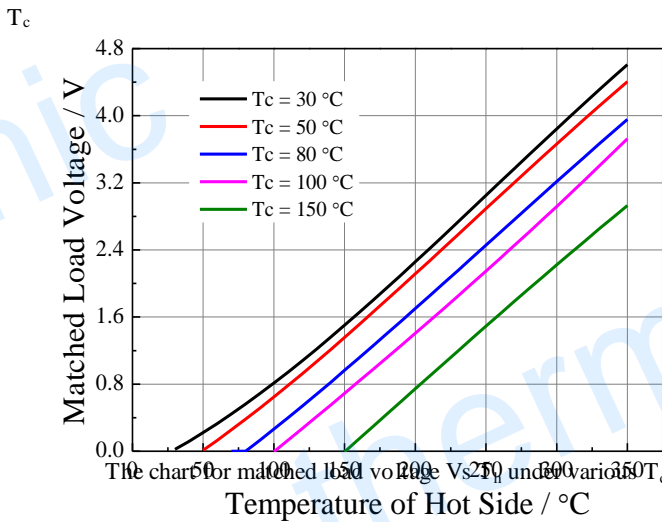
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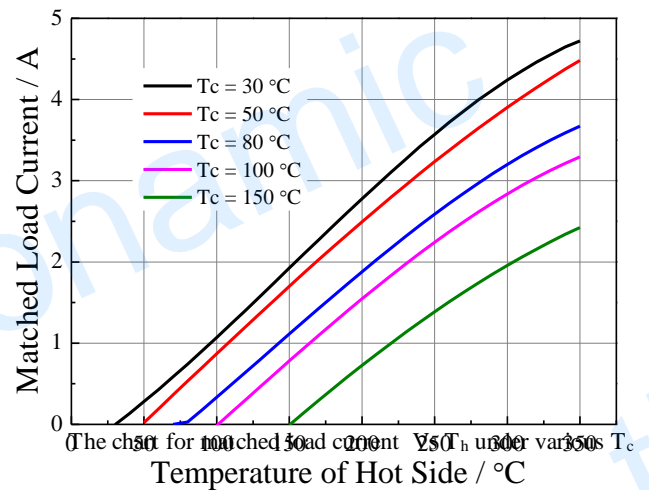
The chart for open circuit voltage Vs T_h under various T_c



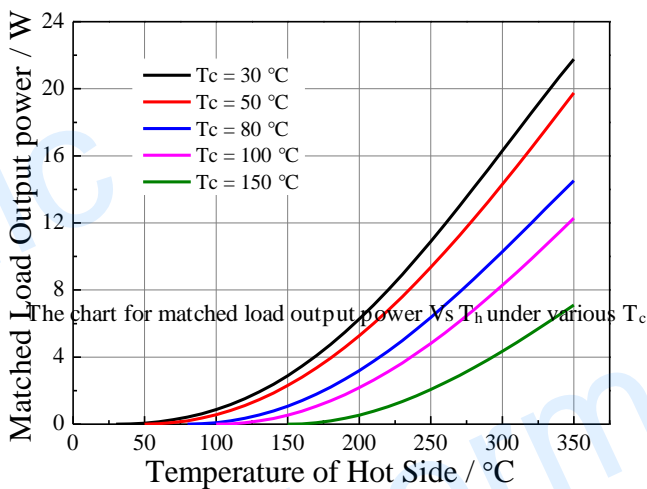
The chart for matched load resistance Vs T_h under various T_c



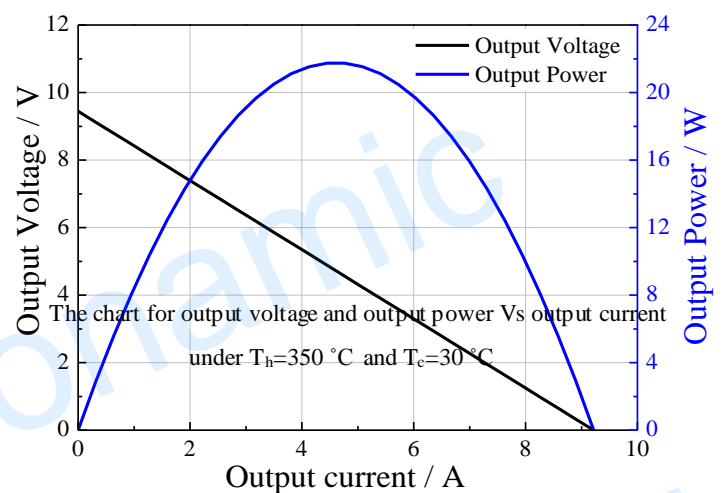
The chart for matched load voltage Vs T_h under various T_c



The chart for matched load current Vs T_h under various T_c



The chart for matched load output power Vs T_h under various T_c



The chart for output voltage and output power Vs output current under T_h=350 °C and T_c=30 °C