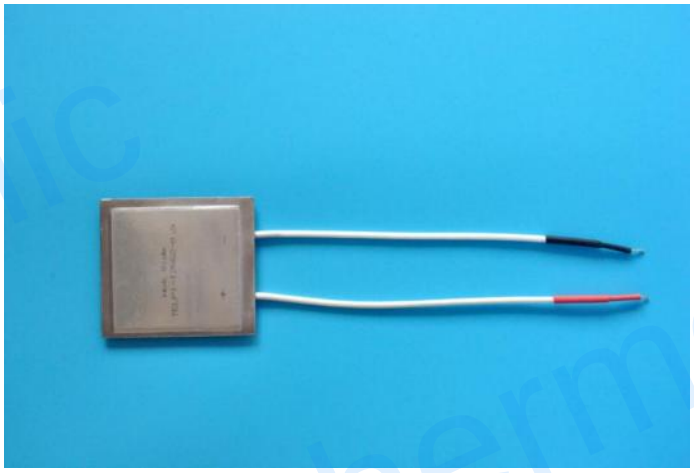
Specification of Thermoelectric Module

TELP1-12662-0.9

Description

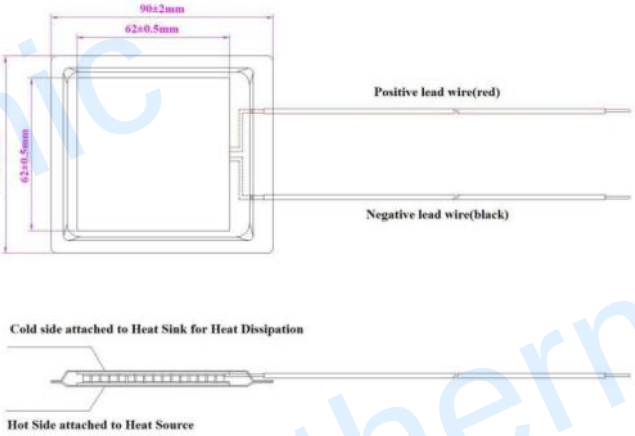
The power module is designed and manufactured by our unique technology for converting heat source directly into electricity. The module is a lead tin telluride based thermoelectric module that can work at the temperature of as high as 500 °C (932 ºF) heat source continuously, and up to 600°C (1112 ºF) 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. It can achieve much higher efficiency than Bismuth Telluride module if heat source temperature can go up to 500 °C (932 ºF) due to its larger temperature difference. The module is enclosed in a metal casing for preventing oxidation in high temperature and poor environment.

Specification of the Module

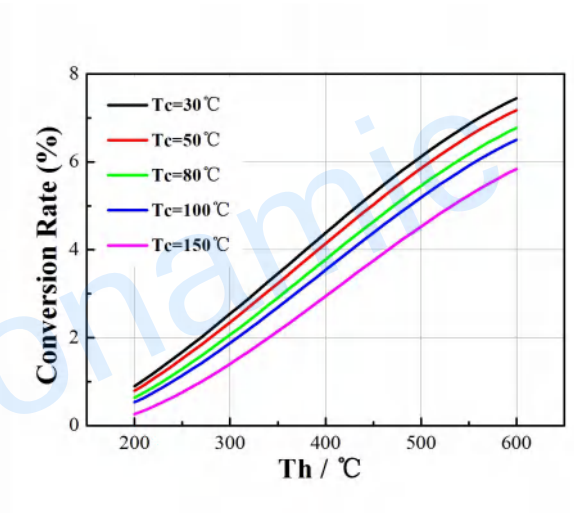


Hot Side Temperature / Th (˚C)	600
Cold Side Temperature / Tc (˚C)	30
Open Circuit Voltage (V)	13.3
Matched Load Resistance (ohms)	2.05
Matched load output voltage (V)	6.65
Matched load output current (A)	3.27
Matched load output power (W)	21.7
Heat flow across the module(W)	≈ 290
Heat flow density(W cm^{-2})	≈ 7.6
AC Resistance (ohms) Measured under 27 ˚C at 1000 Hz	0.7-1.2

Geometric Characteristics Dimensions in millimeter



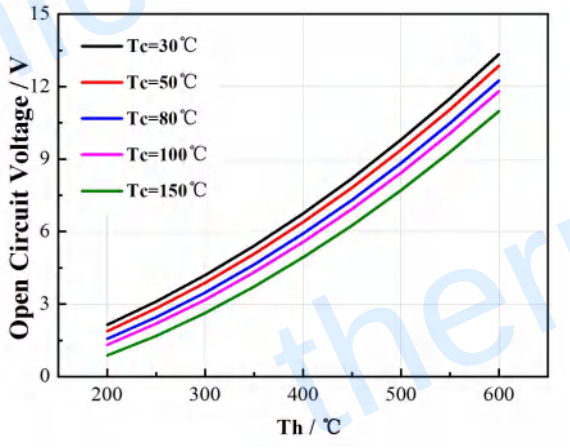
Conversion Rate of the modules Vs Th under various Tc



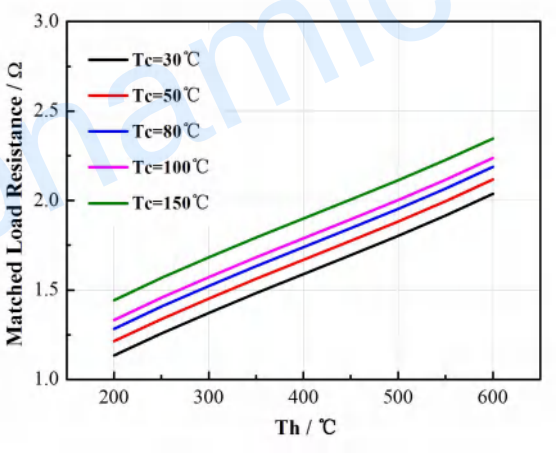
Noted: Conversion rate = Matched load output power/Heat flow through the module

Performance Curves of the Module

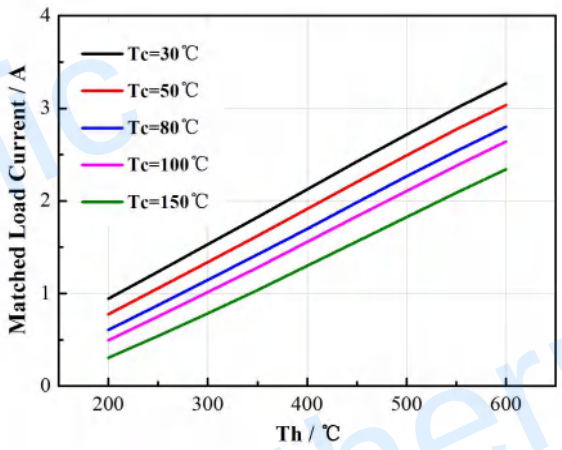
TELP1-12662-0.9



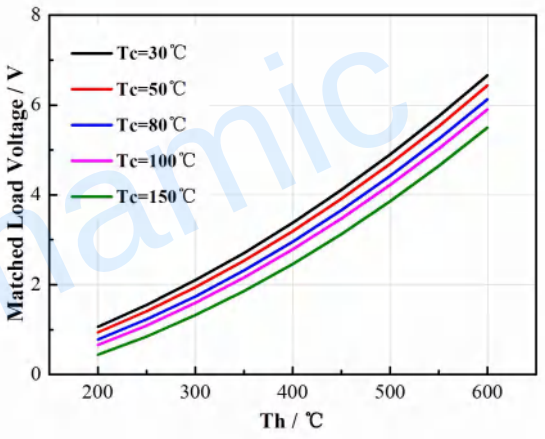
The chart for open circuit voltage Vs T_h under various T_c



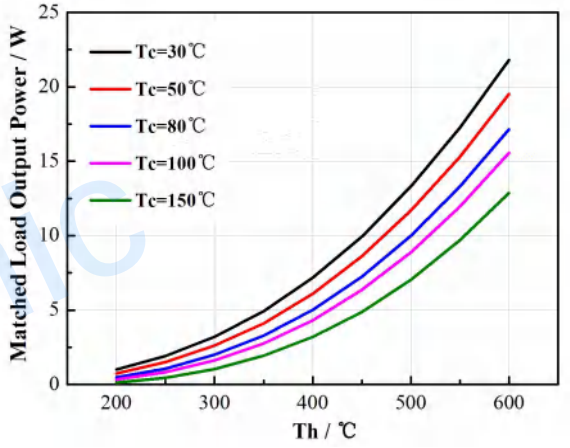
The chart for matched load resistance Vs T_h under various T_c



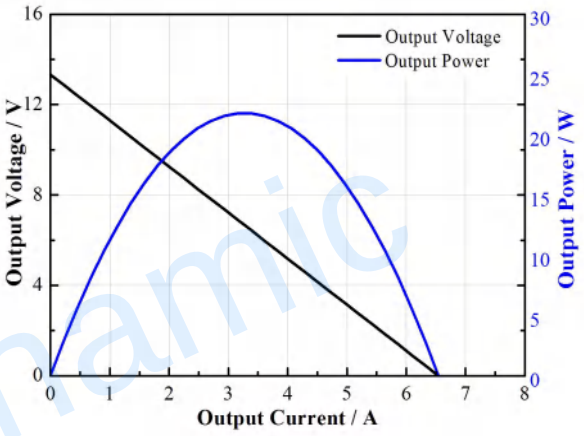
The chart for matched load voltage Vs T_h under various T_c



The char 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=600 ˚C and T_c=30 ˚C