Hi-Z TECHNOLOGY, INC.
Thermoelectric
Materials • Devices • Systems

2 watt module Data Sheet

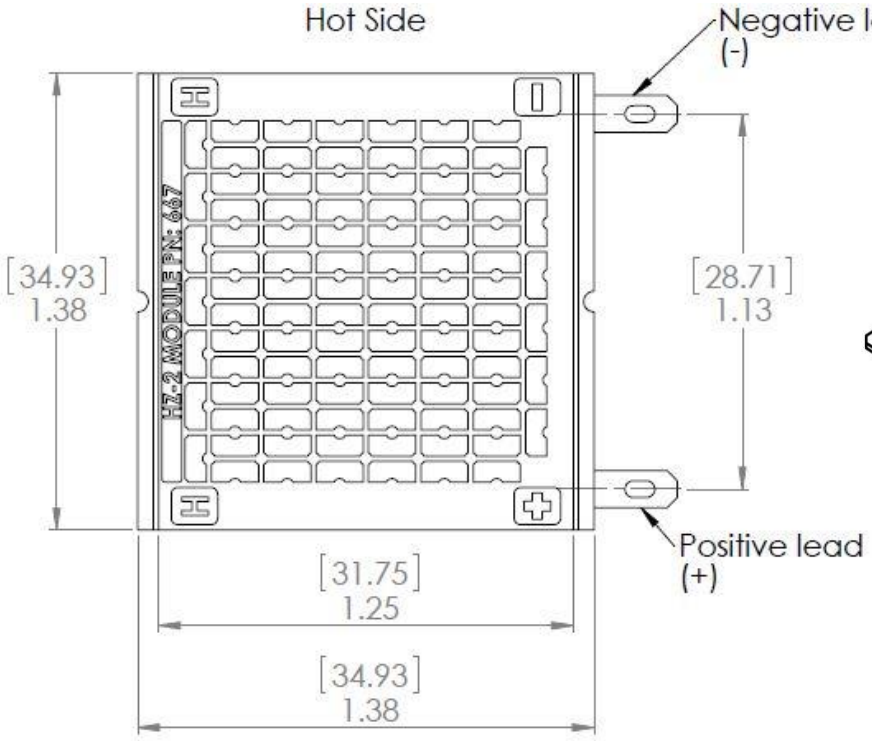
FEATURES

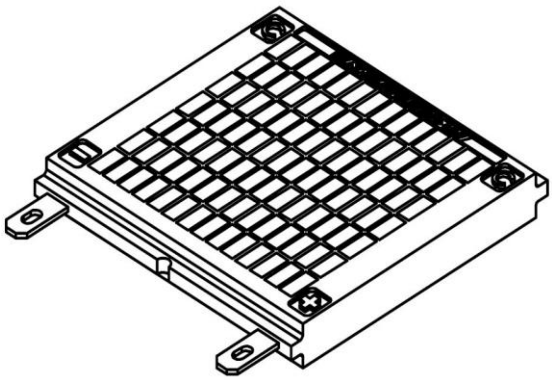
- **Produces > 2 watts of power** (Th=250°C, Tc=50°C)
- **Intermittent Operation up to 350°C**
- **Intermittent Power up to 3.5 watts**
- **Rugged Construction** (no ceramic, no solders, fiber reinforced construction makes module tolerant to abuse)
- **Long life** (>10 years when properly used)
- **97 couples** $(Bi,Sb)_2(Te,Se)_3$)

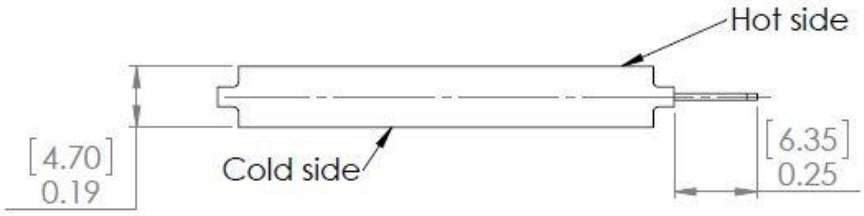
The HZ-2 watt module is designed for power generation and is able to tolerate intermittent temperatures up to 350°C but for maximum life expectancy it should not exceed 250°C. These high temperature properties are made possible by the bonded metal conductors that eliminate the presence of solders.

While the module is optimized for waste heat recovery its reversible properties make it suitable as a thermoelectric cooler, especially for high temperature applications where sensitive electronic equipment must be cooled to below the ambient temperatures.

DESCRIPTION

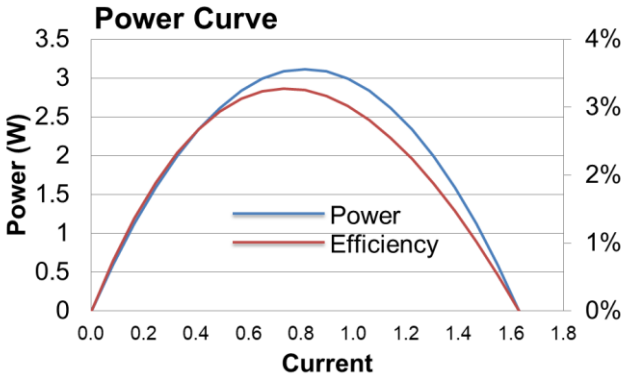


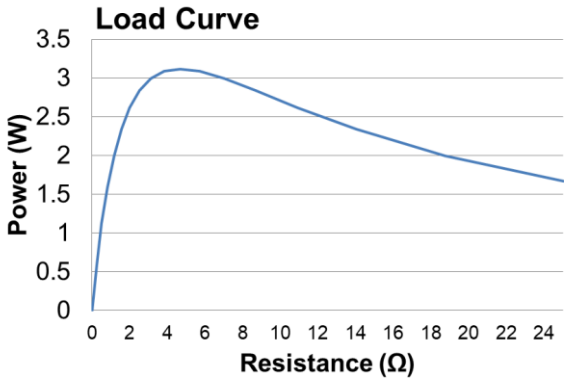


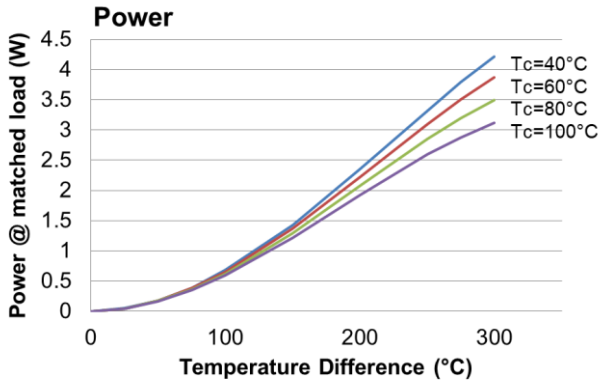


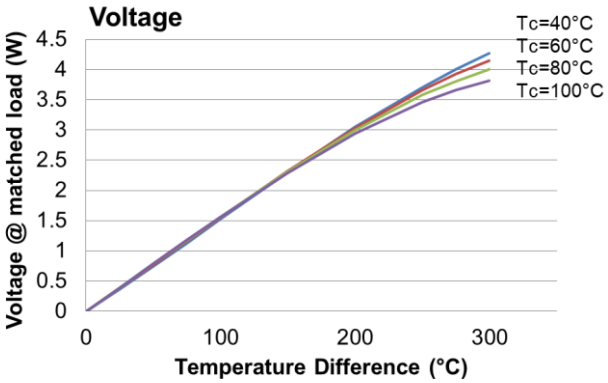
2 watt module
Data Sheet

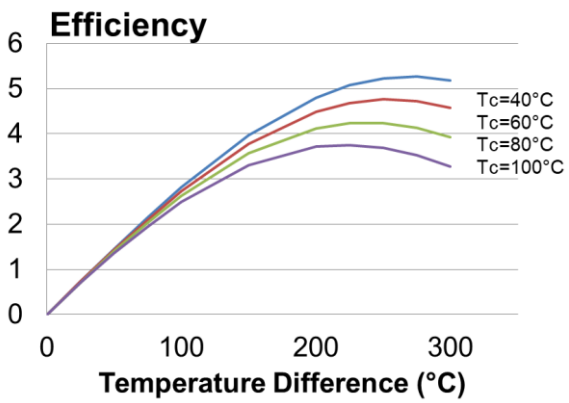
Thermal and Electrical Characteristics					
Parameter	**Conditions**	**min**	**typ**	**max**	**units**
Power	Th=250°C, Tc=50°C @matched load	2.1	2.25	2.4	Watts
Open Circuit Voltage	Th=250°C, Tc=50°C	5.7	6.0	6.3	Volts
Matched load Voltage	Th=250°C, Tc=50°C	2.85	3.0	6.15	Volts
Internal Resistance	Th=250°C, Tc=50°C	3.8	4.0	4.2	Ω
	T = 25°C	2.4	2.5	2.6	Ω
Current	Th=250°C, Tc=50°C @matched load	0.71	0.75	0.79	Amps
	Th=250°C, Tc=50°C @short circuit	1.4	1.5	1.6	Amps
Heat Flux	Th=250°C, Tc=50°C @matched load	47	50	53	Watts
	Th=250°C, Tc=50°C open circuit	35	38	41	Watts
Heat Flux Density	Th=250°C, Tc=50°C @matched load	6	7	8	W/cm^2
Mass		14	14.5	15	grams











Stated temperatures are assumed to be on the module surface and not the heat exchangers. Module surfaces are conductive and require the use of an insulator when used against metal heat exchangers. Ceramic wafers with thermal grease provide optimum performance.

Recommended mounting pressure is 100 to 200 psi uniformly distributed over the module surface.

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