

# SINGLE-STAGE THERMOELECTRIC GENERATOR TG12-4

## Single-Stage Thermoelectric Module



## FEATURES

- RoHS EU Compliant
- Rated operating temperature of 200°C
- Ceramic Material: Aluminum Oxide
- Porch configuration for high strength leadwire connection
- Superior nickel diffusion barriers on elements
- High strength for rugged environment
- RTV sealing option available
- Lapped option available for multiple module applications

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## Nominal Performance in Nitrogen

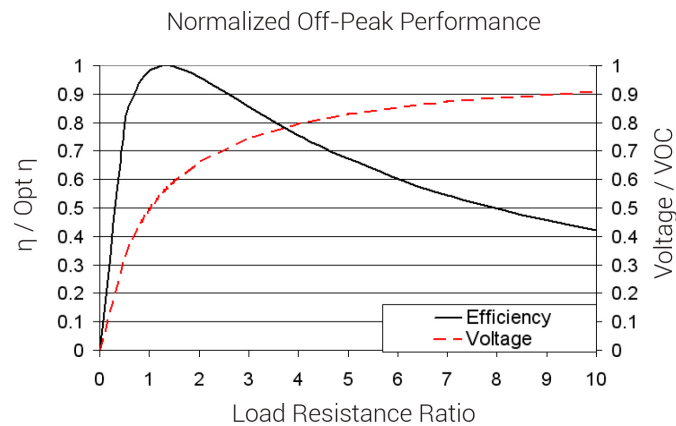
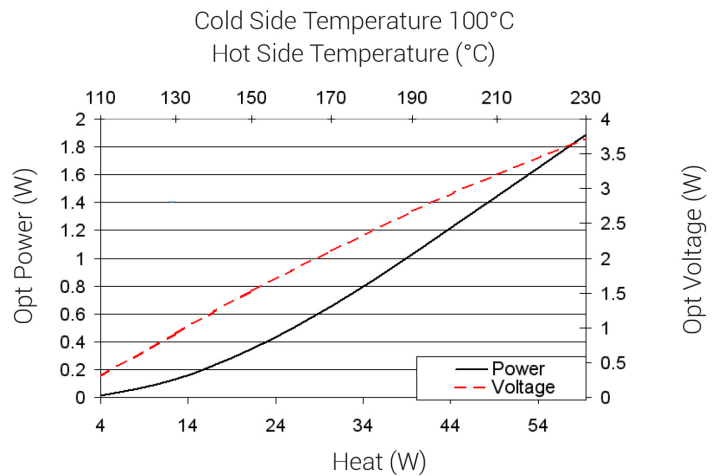
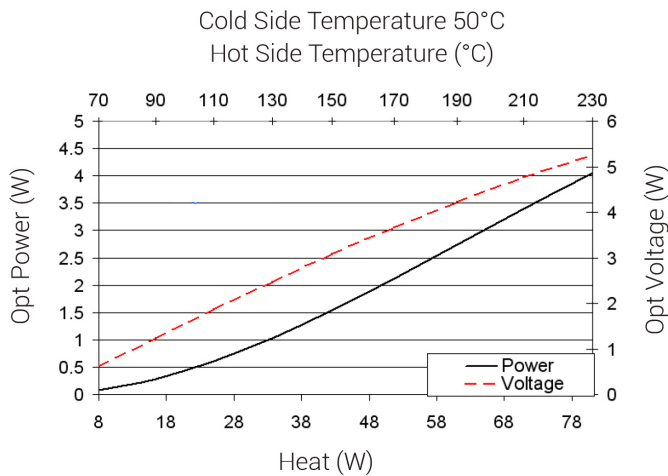
Cold Side Temperature (°C)	27±2
AC Resistance (ohms)	2.76 – 3.41
Device ZT	0.71

## Ordering Options

Model Number	Description
TG12-4-01	Leadwires
TG12-4-01L	Leadwires, Lapped
TG12-4-01S	Leadwires, Sealed
TG12-4-01DG	Leadwires, Diced, Graphite Pads
TG12-4-01LS	Leadwires, Lapped, Sealed
TG12-4-01LSG	Leadwires, Lapped, Sealed, Graphite Pads

## Power Generation Performance Curves

Environment: One atmosphere dry nitrogen



Hot Side Temperature (°C)	230	170	110
Cold Side Temperature (°C)	50	50	50
Optimum Efficiency, $\eta$ (%)	4.97	4.08	2.39
Optimum Power (W)	4.05	2.12	0.61
Optimum Voltage (V)	5.26	3.66	1.86
Load Resistance for Opt $\eta$ ( $\Omega$ )	6.83	6.32	5.72
Open Circuit Voltage, VOC (V)	9.45	6.50	3.28
Closed Circuit Current (A)	1.71	1.32	0.75
Thermal Resistance (°C/W)	2.21	2.31	2.37

## Operation Cautions

For maximum reliability, continuous operation below 200°C (cold side and hot side) is recommended. Intermittent operation up to 230°C on the hot side of the TG is permissible.

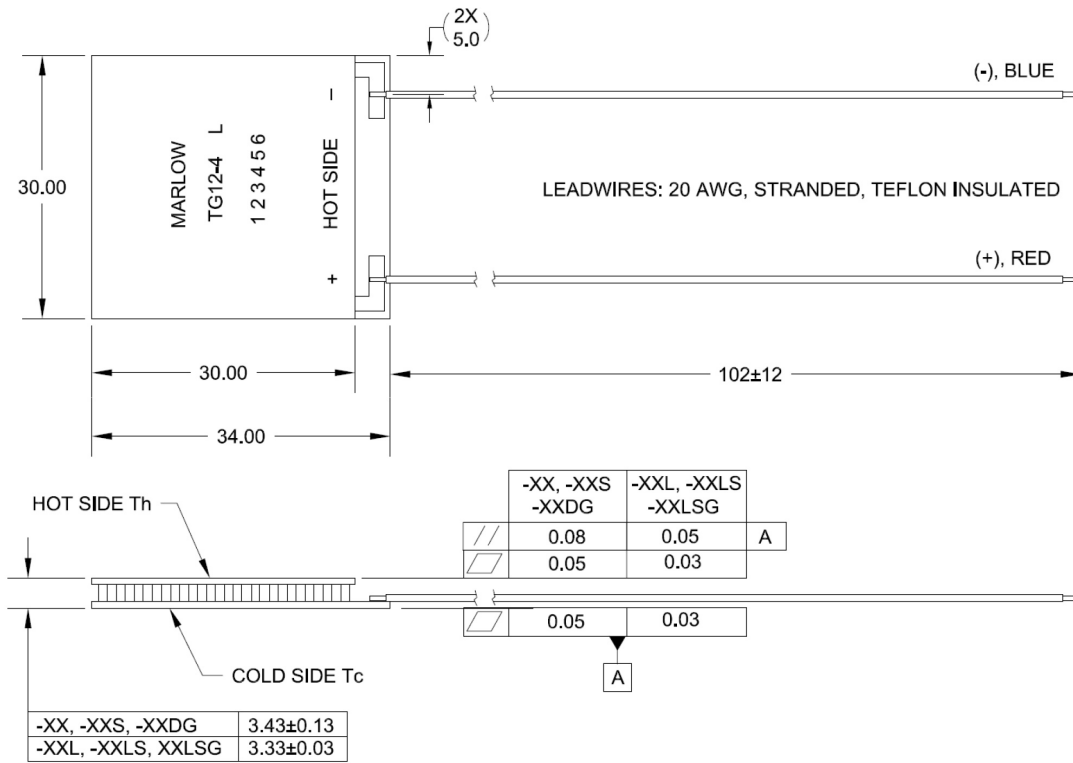
## Installation

Recommended mounting methods: Clamp with uniform pressure to a flat surface with thermal interface material. Recommend 1.4 MPa (200 psi) with thermal grease or flexible graphite pads. For additional information, please contact an applications engineer.

For performance information with cold side temperatures other than 50°C or 100°C, please contact us.

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## Mechanical Characteristics



Note:

Dash -XXDG and -XXLSG: Height, parallelism, and flatness dimensions are measured before adding graphite pads.  
All units are in millimeters unless otherwise stated.