



Technical Data Sheet for RC12-4

Single-Stage Thermoelectric Module



NOMINAL PERFORMANCE IN NITROGEN

Hot Side Temperature (°C)	27	50
ΔT_{max} (°C):	66	74
Q _{max} (watts):	36	39
I _{max} (amps):	3.7	3.7
V _{max} (vdc):	14.7	16.4
AC Resistance (ohms):	3.2	--
Device ZT	0.74	--

PRODUCT FEATURES

- RoHS EU Compliant
- Rated operating temperature of 130°C.
- Ceramic Material: Aluminum Oxide
- Porched configuration for enhanced leadwire strength.
- Superior nickel diffusion barriers on elements.
- High strength for rugged environment.
- RTV sealing option available.
- Lapped option available for multiple module applications.

ORDERING OPTIONS

Model Number	Description
RC12-4-01	Base Model w/ leads
RC12-4-01L	Lapped Model
RC12-4-01S	Sealed Model
RC12-4-01LS	Lapped and Sealed Model

OPERATION CAUTIONS

For maximum reliability, storage and operation below 130°C in a non-condensing environment is recommended. To minimize thermal stress when operating in cooling mode, use linear/proportional temperature control or a similar method rather than an ON/OFF method.

INSTALLATION

Recommended mounting method: Clamp with uniform pressure to a flat surface with thermal interface material. For additional information, please refer to our TEM Installation Guide.

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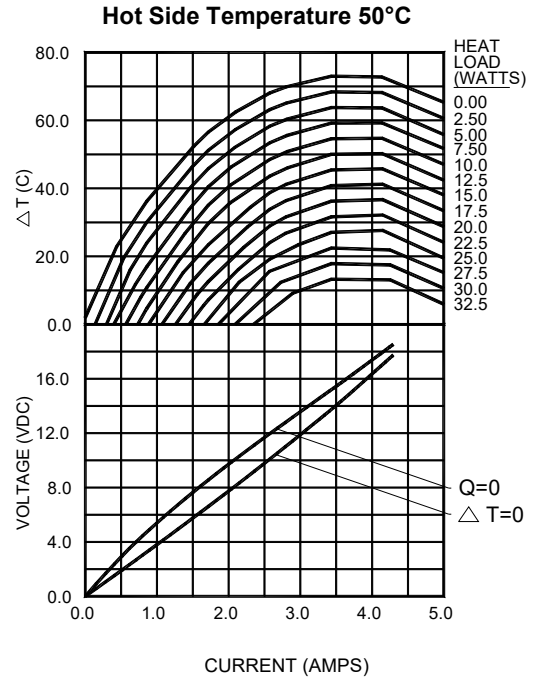
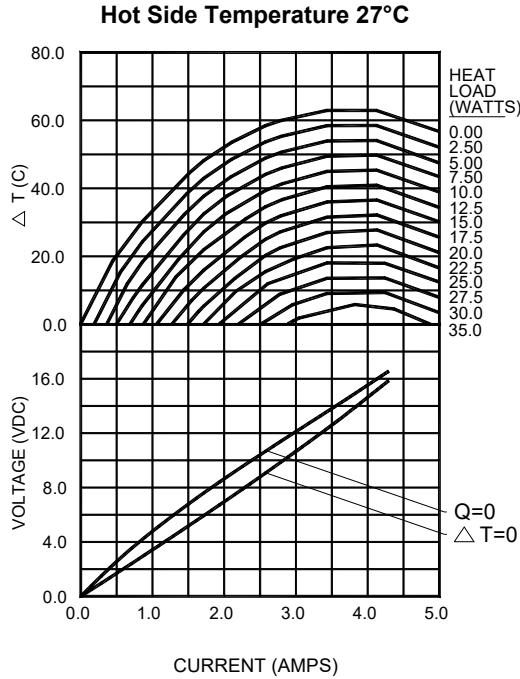
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THERMOELECTRIC COOLING PERFORMANCE CURVES

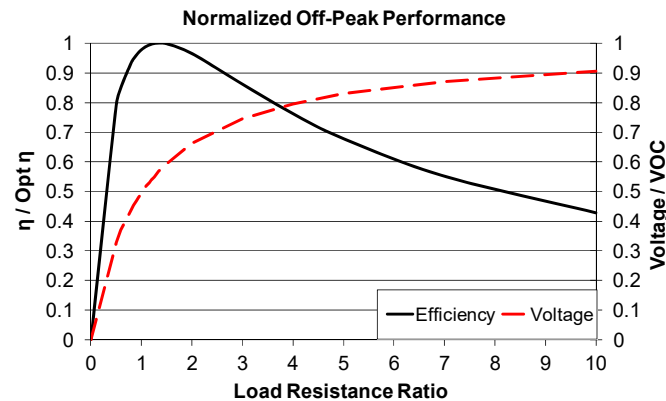
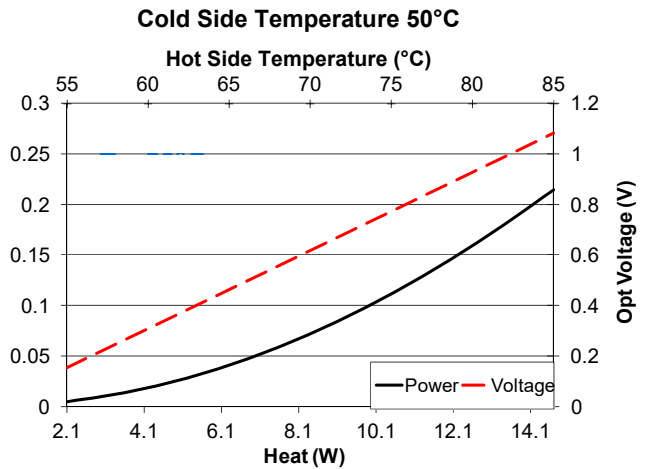
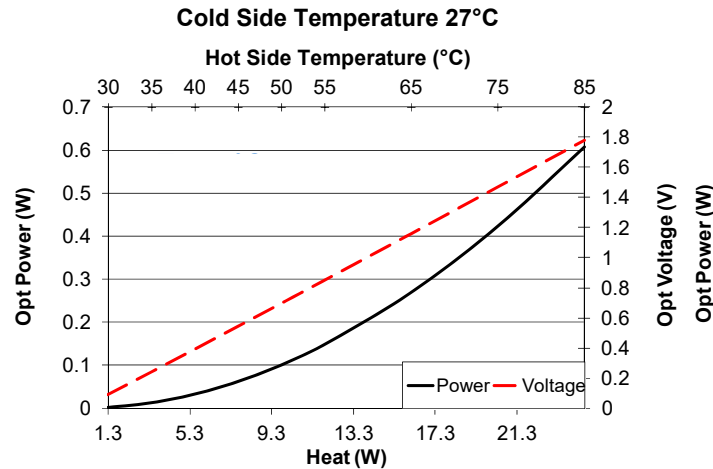
ENVIRONMENT: ONE ATMOSPHERE DRY NITROGEN



For performance information in a vacuum or with hot side temperatures other than 27°C or 50°C, contact one of our Applications Engineers at 877-627-5691.

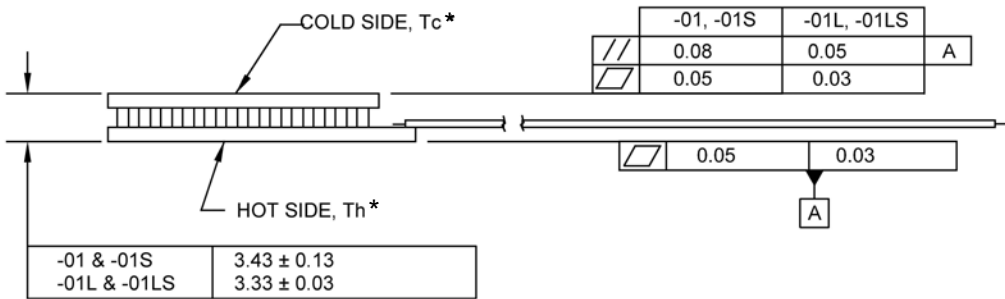
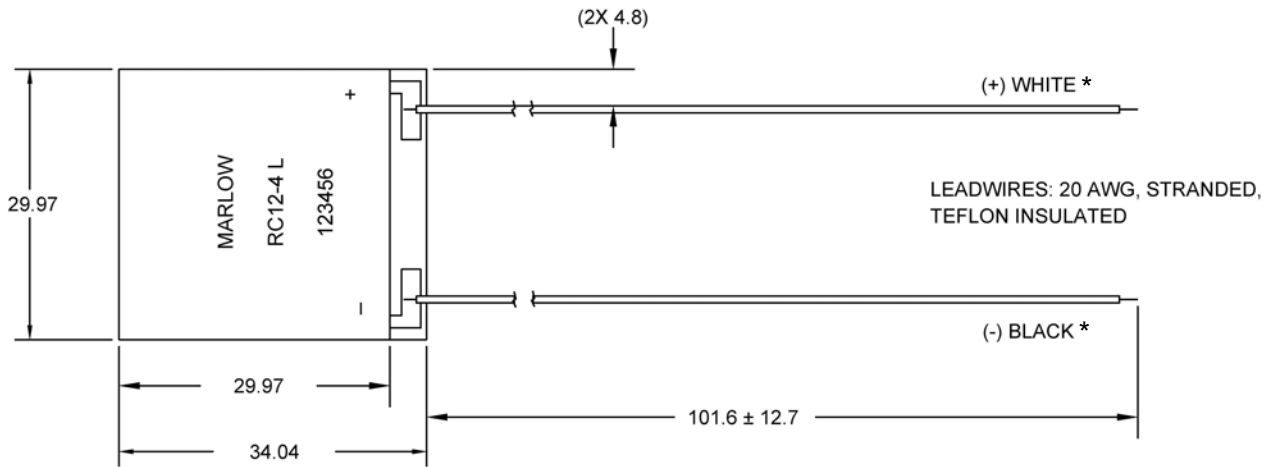
POWER GENERATION PERFORMANCE CURVES

ENVIRONMENT: ONE ATMOSPHERE DRY NITROGEN



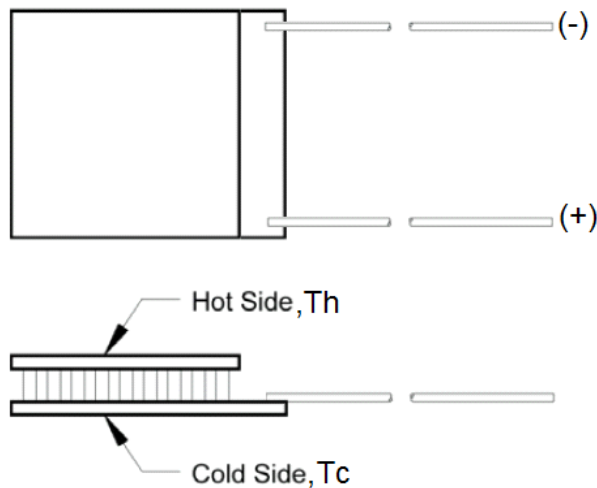
Hot Side Temperature (°C)	85	55	35
Cold Side Temperature (°C)	27	27	27
Optimum Efficiency, η (%)	2.47	1.25	0.36
Optimum Power (W)	0.608	0.148	0.012
Optimum Voltage (V)	1.778	0.848	0.239
Load Resistance for Opt η (Ω)	5.21	4.86	4.63
Open Circuit Voltage, VOC (V)	3.13	1.50	0.42
Short Circuit Current (A)	0.79	0.40	0.12
Thermal Resistance (°C/W)	2.36	2.36	2.35

For performance information with hot side temperatures other than 27°C or 50°C, contact one of our Applications Engineers at 877-627-5691.



All units are in millimeters unless otherwise stated.

***NOTE:** Cold side, hot side, positive lead, and negative lead are valid only for thermoelectric cooling. For power generation, refer to figure below:



For customer support or general questions please contact a local office or visit our website at www.marlow.com. Marlow reserves the right to make product changes without notice.