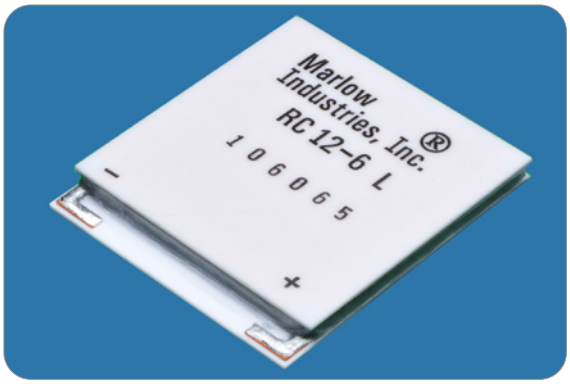
marlow industries, inc. ®
Subsidiary of II-VI INCORPORATED

TECHNICAL DATA SHEET



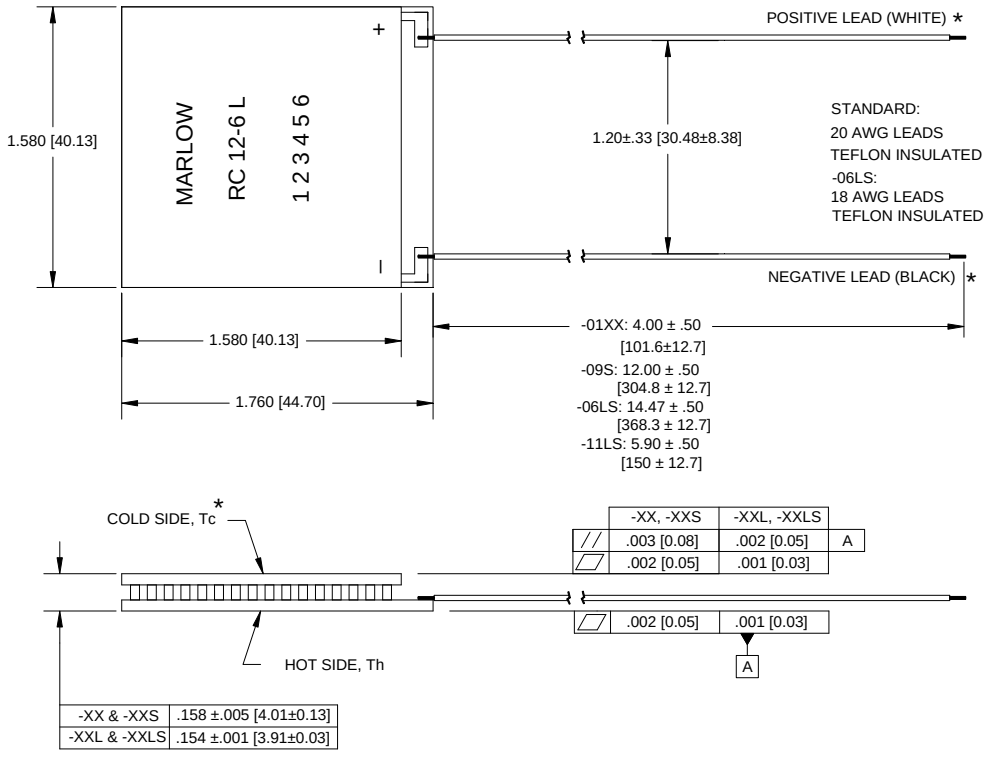
RC12-6

Single-Stage Thermoelectric Module
RoHS, REACH Compliant

TYPICAL PERFORMANCE VALUES

Hot Side Temperature (°C)	27°C	50°C
Δ Tmax (°C-dry N_2):	66	74
Qmax (watts):	54	60
Imax (amps):	5.6	5.6
Vmax (vdc):	14.7	16.4
AC Resistance (ohms):	2.2	---
Device ZT	0.76	---

MECHANICAL CHARACTERISTICS



Ceramic Material: Alumina (AC)

Dimensions in [ ] are millimeters

***NOTE: Cold side and positive and negative leads are valid only for thermoelectric cooling. For power generation, refer to page 3.**

ORDERING OPTIONS

Model Number	Description
RC12-6-01	Base Model w/ leads
RC12-6-01L	Lapped Model
RC12-6-01S	Sealed Model
RC12-6-09S	Sealed, Long Lead Wire
RC12-6-01LS	Lapped and Sealed Model
RC12-6-06LS	Lapped, Sealed, Leads Sealed, Long Lead Wire
RC12-6-11LS	Lapped, Sealed, Leads Sealed

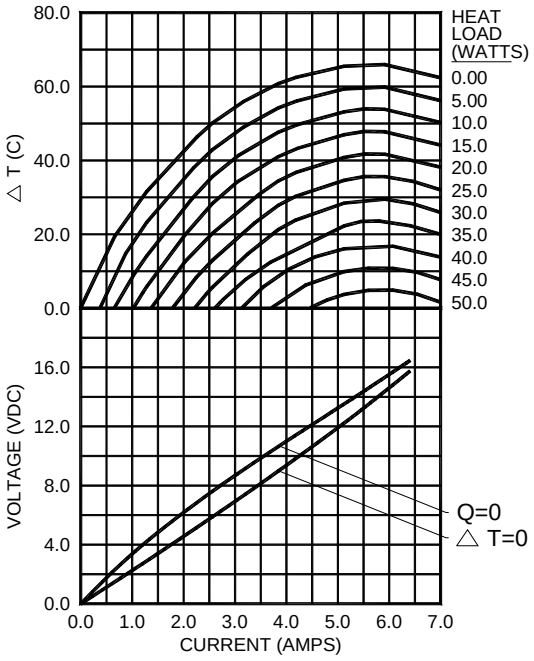
PRODUCT FEATURES

Solid-state reliability.
Built with high temperature solder with the ability to withstand higher assembly processing temperatures for short periods of time (<160°C).
Superior nickel diffusion barriers on elements.
High strength for rugged environment.
Porched configuration for enhanced leadwire strength.
Lapped option available for multiple module applications.

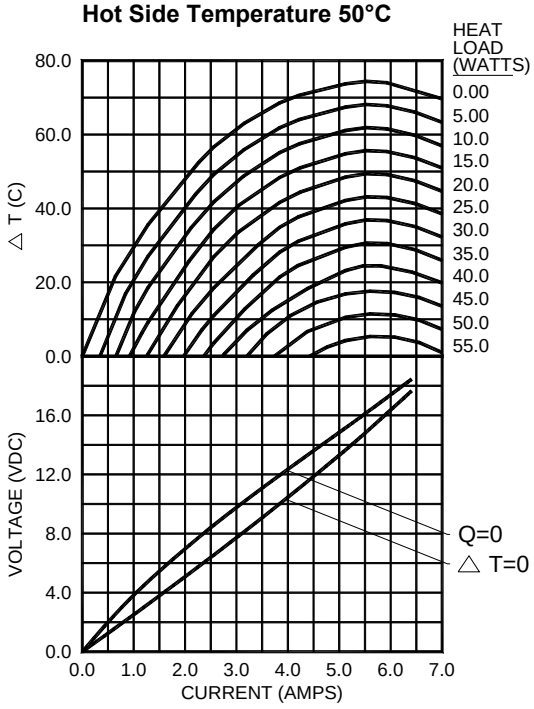
COOLING PERFORMANCE CURVES

ENVIRONMENT: ONE ATMOSPHERE DRY NITROGEN (TYPICAL CURVES)

Hot Side Temperature 27°C



Hot Side Temperature 50°C



For performance information in a vacuum or with hot side temperatures other than 27°C or 50°C, consult one of our Applications Engineers.

Installation
Recommended mounting methods: Clamped under uniform pressure with thermal grease or suitable flexible thermal interface. For additional information, please refer to our TEC Installation Guide.

Operation Cautions
For maximum reliability, storage and operation below 85°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.

CONTACT US:

For customer support or general questions please contact a local office below or consult our website for distributor information.

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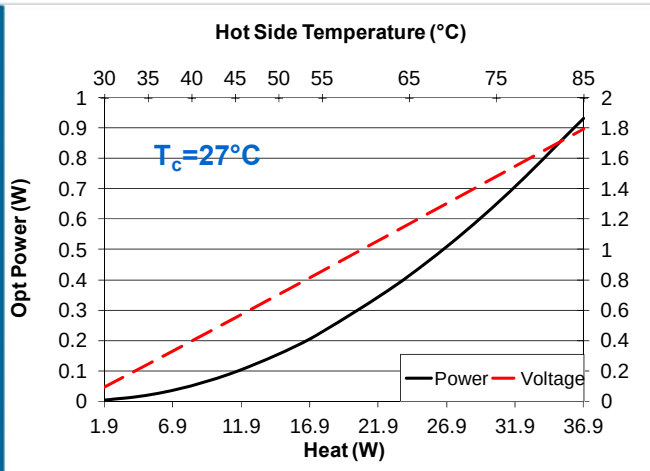
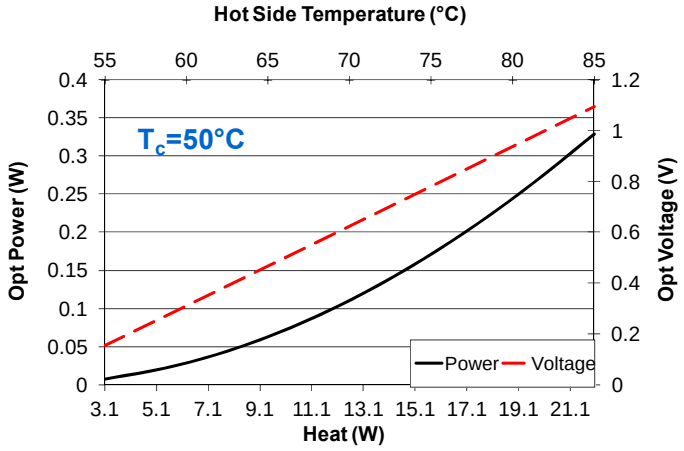
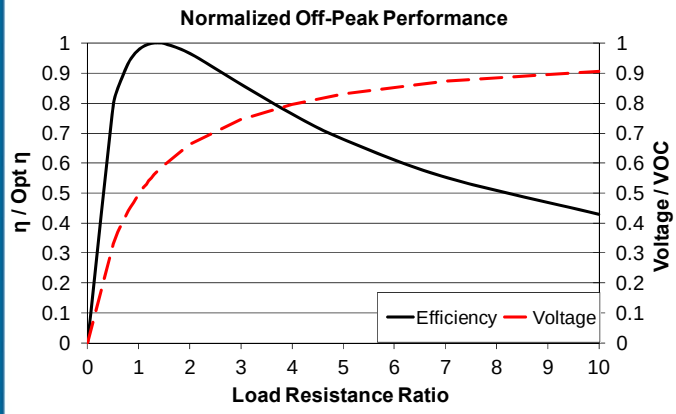
POWER GENERATION PERFORMANCE CURVES







Hot Side Temperature (°C)	85	55	35
Cold Side Temperature (°C)	27	27	27
Optimum Efficiency, η (%)	2.52	1.27	0.37
Optimum Power (W)	0.931	0.227	0.019
Optimum Voltage (V)	1.795	0.856	0.242
Load Resistance for Opt η (Ω)	3.46	3.23	3.07
Open Circuit Voltage, VOC (V)	3.15	1.50	0.43
Short Circuit Current (A)	1.20	0.62	0.18
Thermal Resistance (°C/W)	1.57	1.57	1.57

Power Generation performance information is given in a nitrogen environment and cold side temperatures of 27°C and 50°C. Module temperature does not include thermal resistance of heat sinks. For performance information in vacuum, other cold side temperatures, or specific heat sinks, consult one of our applications engineers.

TYPICAL POWER GENERATION CONFIGURATION

EXAMPLE: