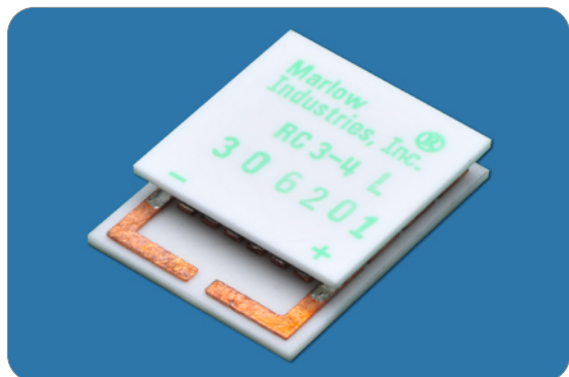




marlow industries, inc.®  
Subsidiary of II-VI INCORPORATED

# TECHNICAL DATA SHEET



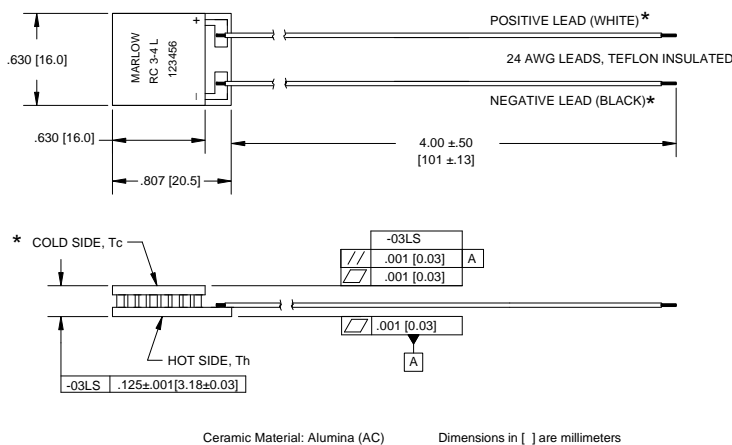
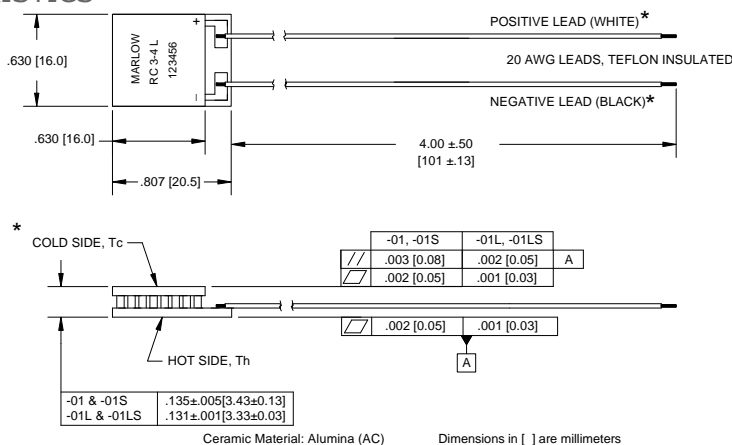
## RC3-4

Single-Stage Thermoelectric Module  
RoHS EU Compliant

### TYPICAL PERFORMANCE VALUES

Hot Side Temperature (°C)	27°C	50°C
Δ Tmax (°C-dry N <sub>2</sub> ):	65	73
Qmax (watts):	9	10
Imax (amps):	3.7	3.7
Vmax (vdc):	3.6	4.1
AC Resistance (ohms):	0.8	--
Device ZT	0.74	--

### MECHANICAL CHARACTERISTICS



### -03LS

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

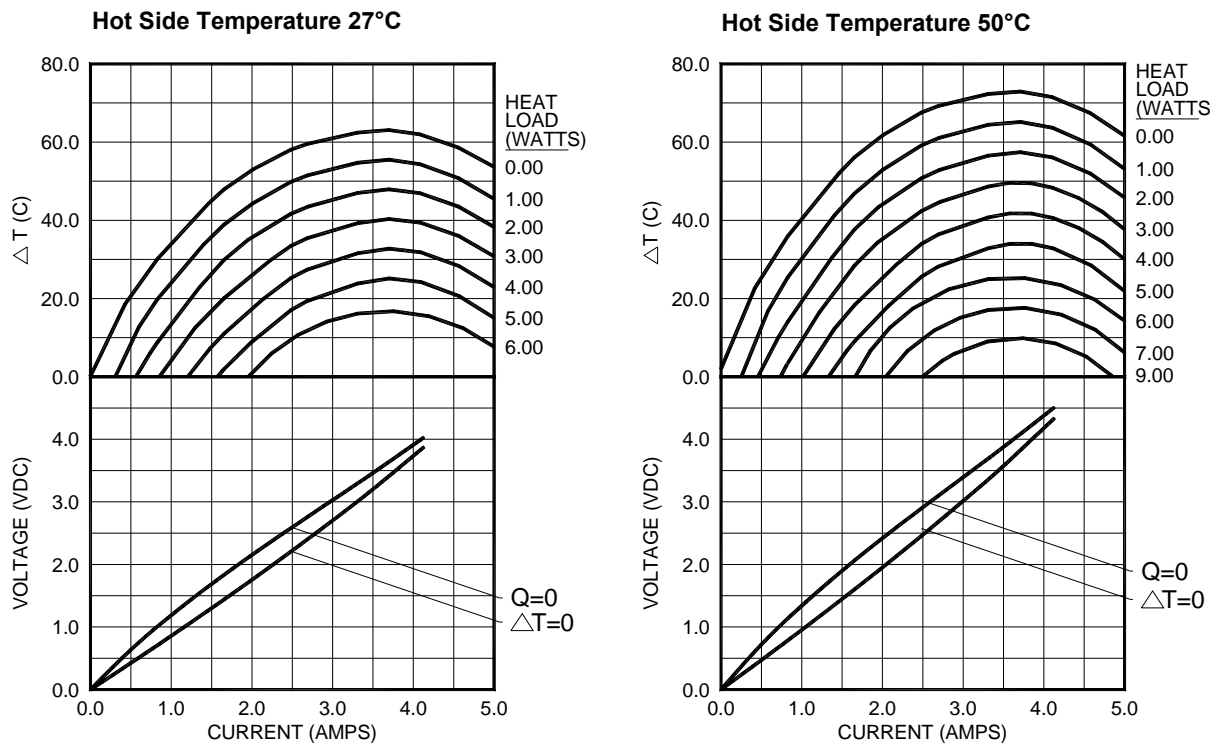
### ORDERING OPTIONS

Model Number	Description
RC3-4-01	Base Model w/ leads
RC3-4-01L	Lapped Model
RC3-4-01S	Sealed Model
RC3-4-01LS	Lapped and Sealed Model
RC3-4-03LS	Lapped and Sealed Model

### AVAILABLE MODIFICATIONS

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.  
RTV/Epoxy sealing available (Optional).  
Lapped option available for multiple module applications.

ENVIRONMENT: ONE ATMOSPHERE DRY NITROGEN



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: Bonding with thermal epoxy or soldering with metallized ceramics. 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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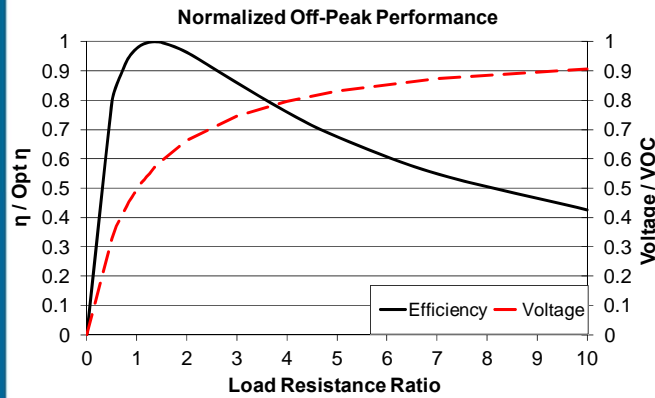
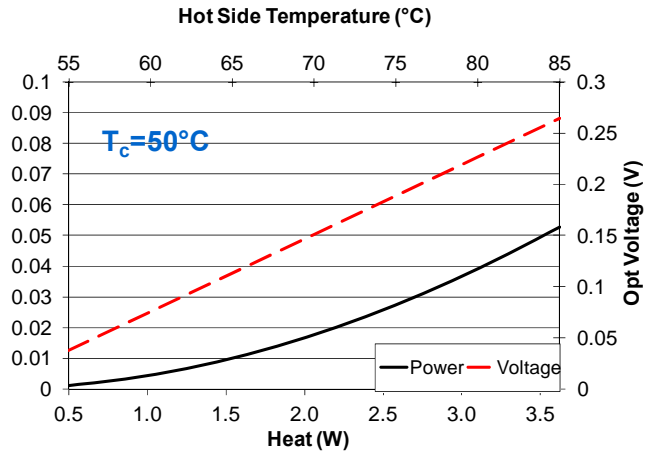
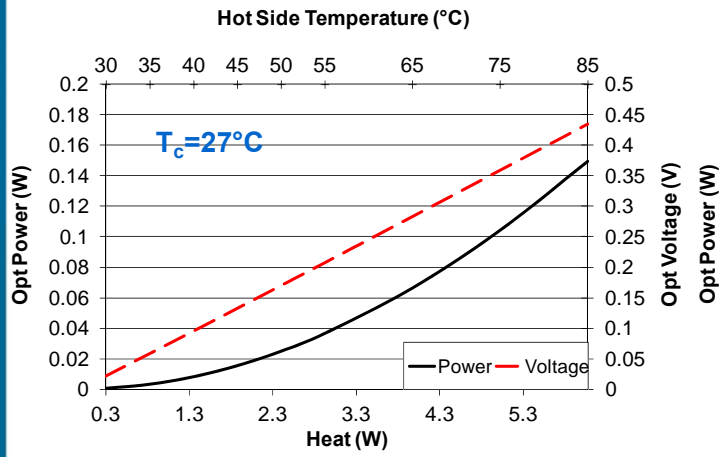
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POWER GENERATION PERFORMANCE CURVES



Hot Side Temperature (°C)	85	55	35
Cold Side Temperature (°C)	27	27	27
Optimum Efficiency, $\eta$ (%)	2.45	1.24	0.36
Optimum Power (W)	0.149	0.036	0.003
Optimum Voltage (V)	0.435	0.208	0.059
Load Resistance for Opt $\eta$ ( $\Omega$ )	1.27	1.18	1.13
Open Circuit Voltage, $V_{OC}$ (V)	0.77	0.37	0.10
Short Circuit Current (A)	0.79	0.41	0.12
Thermal Resistance (°C/W)	9.53	9.54	9.52

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:

