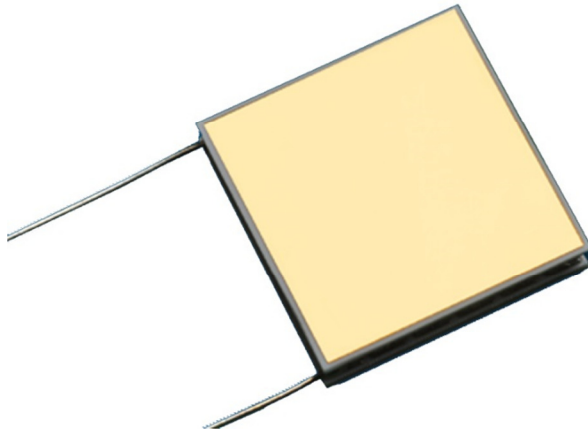




# Technical Data Sheet for NL1023T

## Single-Stage Thermoelectric Module



### NOMINAL PERFORMANCE IN NITROGEN

Hot Side Temperature (°C)	27	50
$\Delta T_{max}$ (°C):	64	73
Q <sub>max</sub> (watts):	9.2	10.5
I <sub>max</sub> (amps):	1.8	1.8
V <sub>max</sub> (vdc):	8.0	9.0
AC Resistance (ohms):	3.86	--
Device ZT	0.77	--

### PRODUCT FEATURES

- RoHS EU Compliant
- Rated operating temperature of 85°C.
- Maximum process temperature is 220°C
- Ceramic material: Aluminum Oxide.
- Pre-tinned metallized ceramic surface(s) with 138°C solder, option available.

### ORDERING OPTIONS

Model Number	Description
NL1023T-01AC	TEM, Top and Base Metallized Exterior
NL1023T-02AC	TEM, Base Metallized Exterior
NL1023T-03AC	TEM, No Metallized Exterior
NL1023T-04AC	TEM, Top and Base Pre-Tinned with 138 °C Solder

### OPERATION

For maximum reliability, storage and operation below 85°C in a non-condensing environment is recommended. To minimize thermal stress, use linear/proportional temperature control or a similar method rather than an ON/OFF method.

### INSTALLATION

Recommended mounting methods: Bonding with thermal epoxy or soldering with metallized ceramics. For additional information, please refer to our TEM Installation Guide.

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II-VI Japan Inc.  
81 43 297 2693 (tel)  
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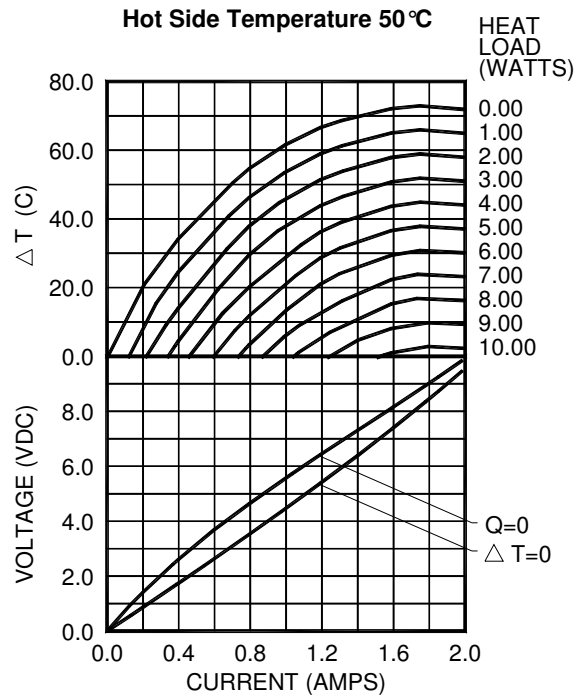
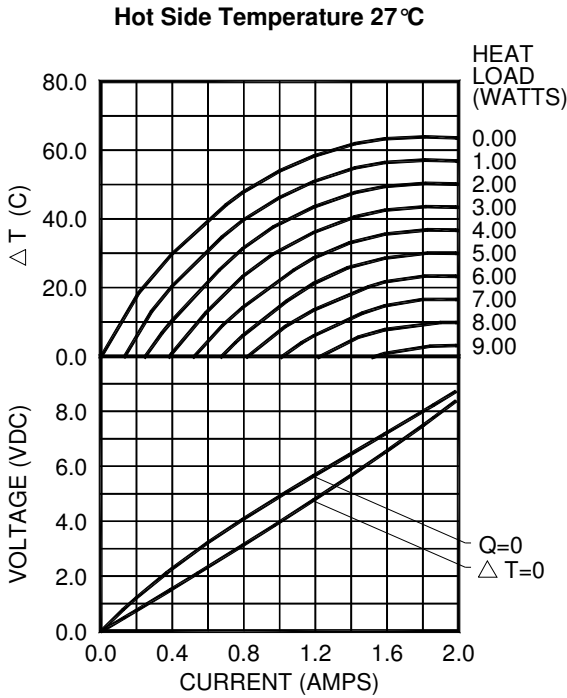
II-VI Singapore Pte., Ltd.  
(65) 6481 8215 (tel)  
info@ii-vi.com.sg

Marlow Industries China, II-VI  
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86-10-643 98226  
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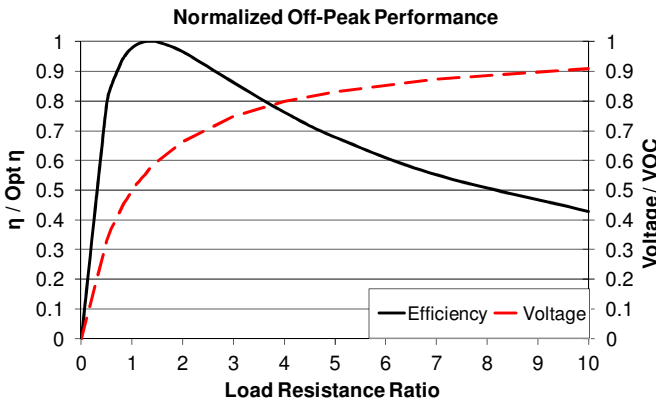
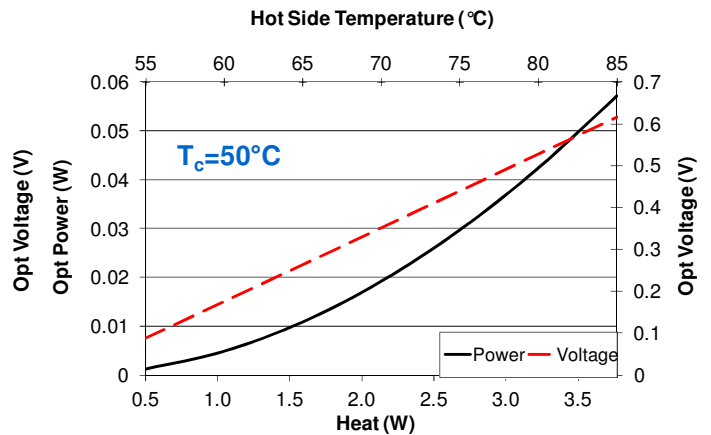
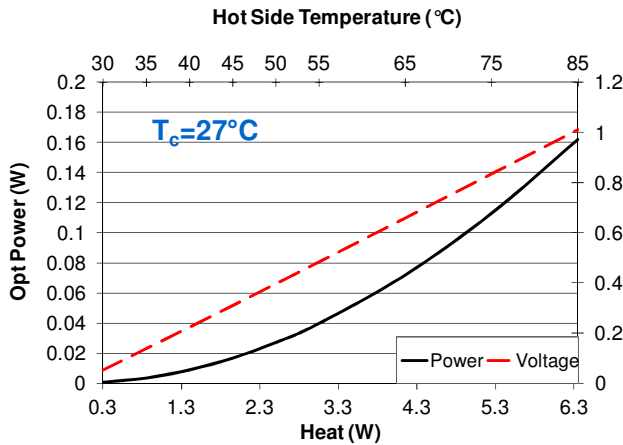


ENVIRONMENT: ONE ATMOSPHERE DRY NITROGEN

TYPICAL PERFORMANCE CURVES

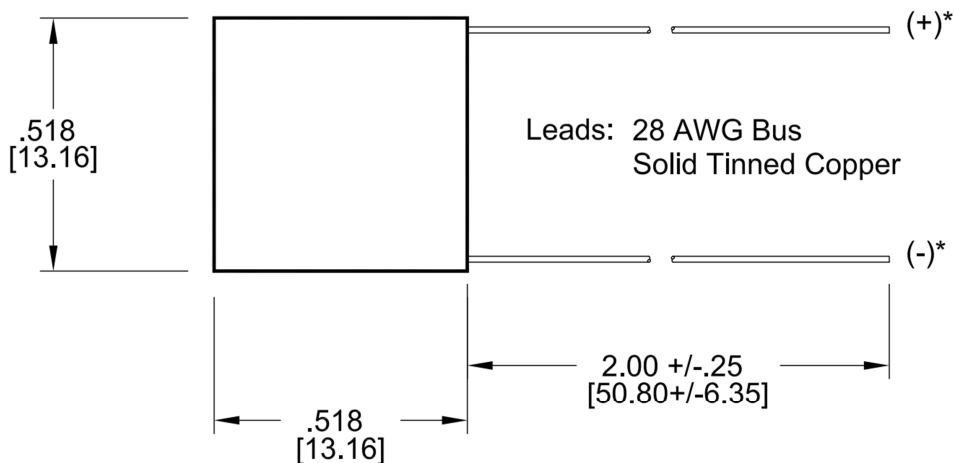


POWER GENERATION PERFORMANCE CURVES

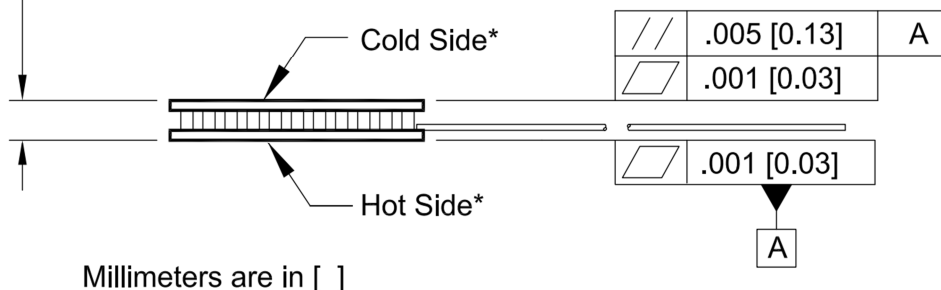


Hot Side Temperature (°C)	85	55	35
Cold Side Temperature (°C)	27	27	27
Optimum Efficiency, $\eta$ (%)	2.53	1.28	0.37
Optimum Power (W)	0.162	0.039	0.003
Optimum Voltage (V)	1.011	0.482	0.136
Load Resistance for Opt $\eta$ ( $\Omega$ )	6.32	5.91	5.62
Open Circuit Voltage, VOC (V)	1.77	0.85	0.24
Short Circuit Current (A)	0.37	0.19	0.06
Thermal Resistance (°C/W)	9.09	9.09	9.06

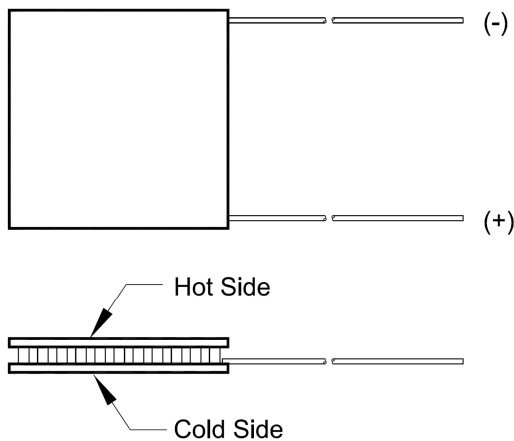
For performance information in a vacuum or with hot side temperatures other than 27°C or 50°C, contact one of our Applications Engineers at 877-627-5691.



-01AC, -04AC	.087±.005[2.21±0.13]
-02AC	.086±.005[2.18±0.13]
-03AC	.085±.005[2.16±0.13]



**\*NOTE: Cold side, hot side, positive leads, and negative leads 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](http://www.marlow.com). Marlow reserves the right to make product changes without notice.