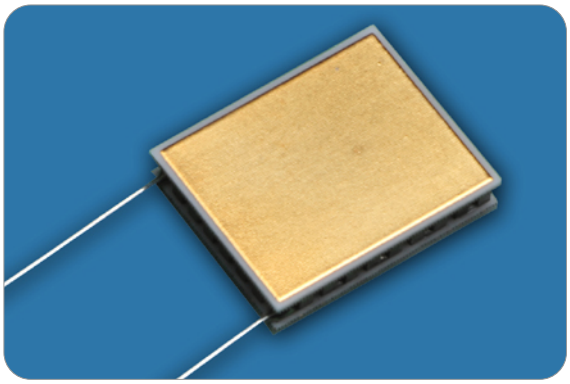
marlow industries, inc. ®
Subsidiary of II-VI INCORPORATED

TECHNICAL DATA SHEET



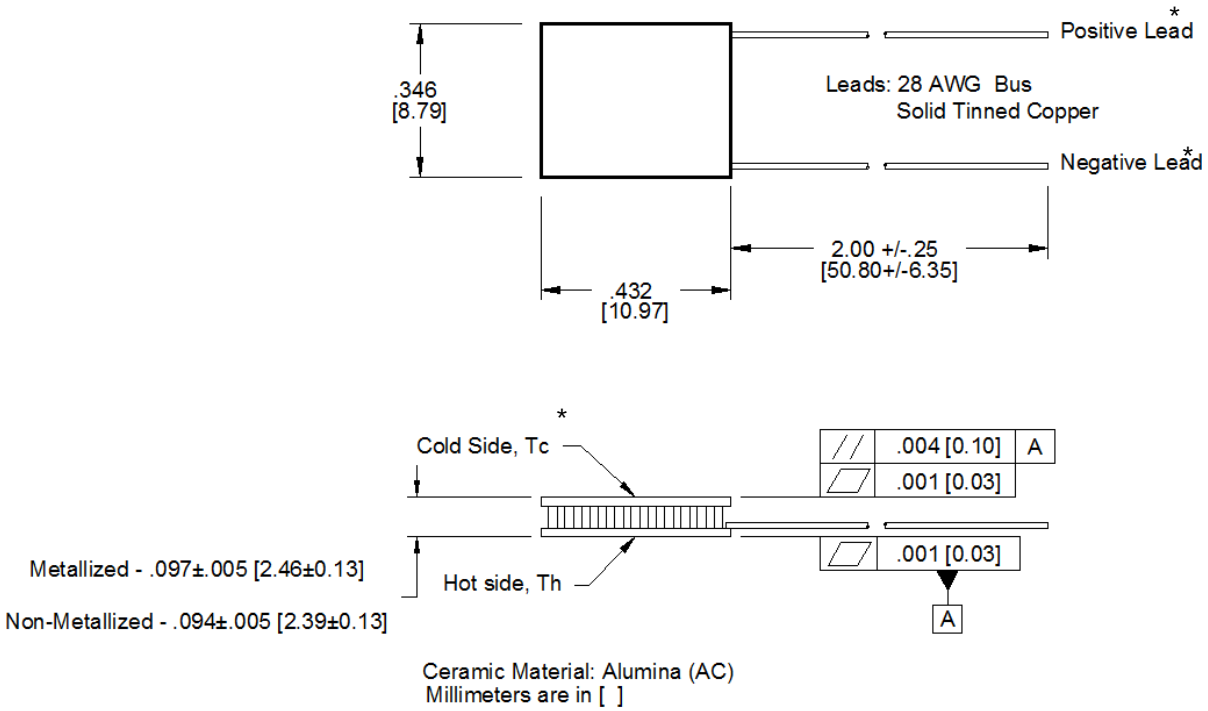
NL1015T

Single-Stage Thermoelectric Module
RoHS EU Compliant

TYPICAL PERFORMANCE VALUES

Hot Side Temperature (°C)	27°C	50°C
Δ Tmax (°C-dry N_2):	61	69
Qmax (watts):	2.6	3.0
Imax (amps):	1.0	1.0
Vmax (vdc):	4.6	5.3
AC Resistance (ohms):	4.07	--
Device ZT	0.77	--

MECHANICAL CHARACTERISTICS



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

ORDERING OPTIONS

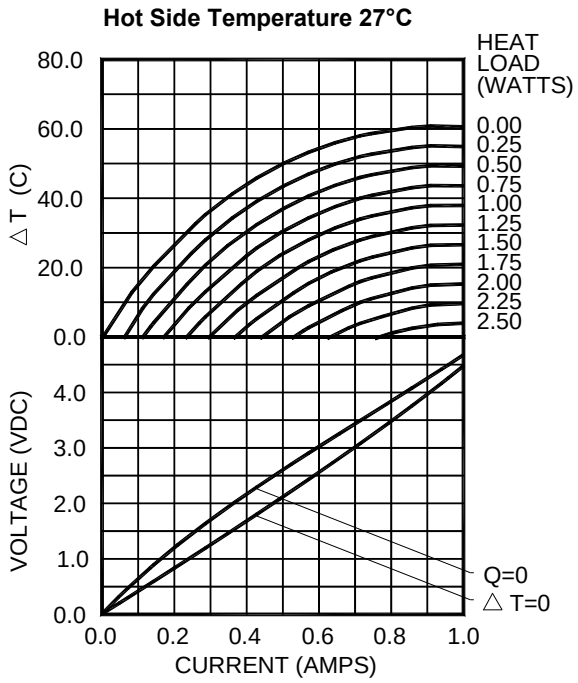
Model Number	Description
NL1015T-01AC	both surfaces are metallized
NL1015T-02AC	hot side exterior is metallized
NL1015T-03AC	no metallization

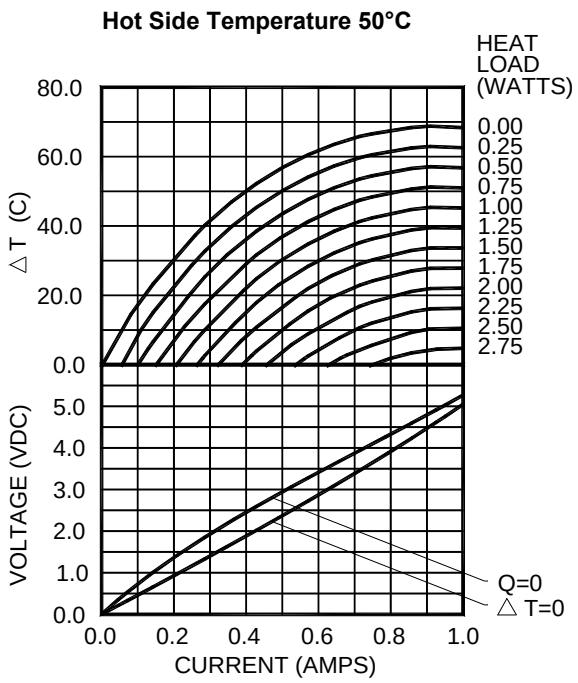
AVAILABLE MODIFICATIONS

Pretinned metallized ceramic surface(s) with 117°C solder.
Thermistor mounted on edge of cold side ceramic. (Calibration available.)
Elevated temperature burn-in with test data provided.

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, 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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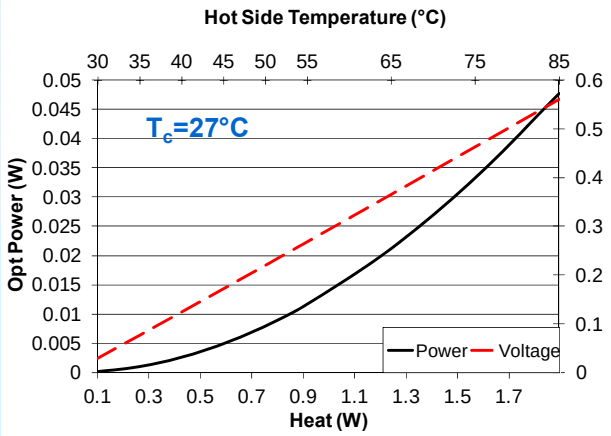
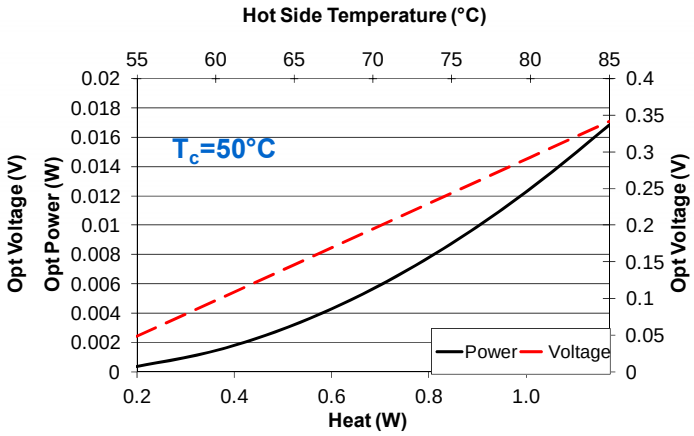
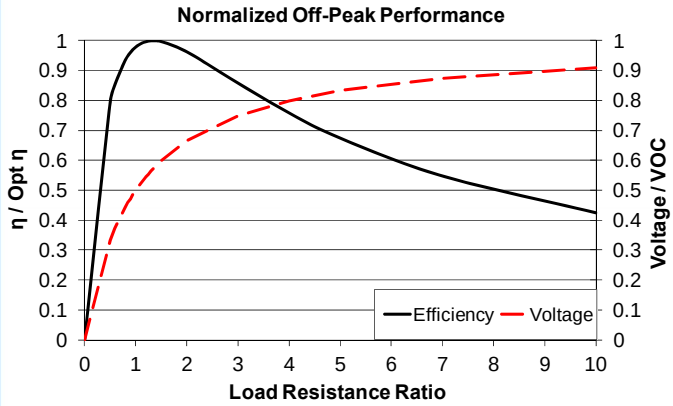
POWER GENERATION PERFORMANCE CURVES







Hot Side Temperature (°C)	85	55	35
Cold Side Temperature (°C)	27	27	27
Optimum Efficiency, η (%)	2.52	1.28	0.37
Optimum Power (W)	0.048	0.012	0.001
Optimum Voltage (V)	0.561	0.268	0.076
Load Resistance for Opt η (Ω)	6.59	6.15	5.85
Open Circuit Voltage, VOC (V)	0.98	0.47	0.13
Short Circuit Current (A)	0.20	0.10	0.03
Thermal Resistance (°C/W)	30.64	30.68	30.63

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: