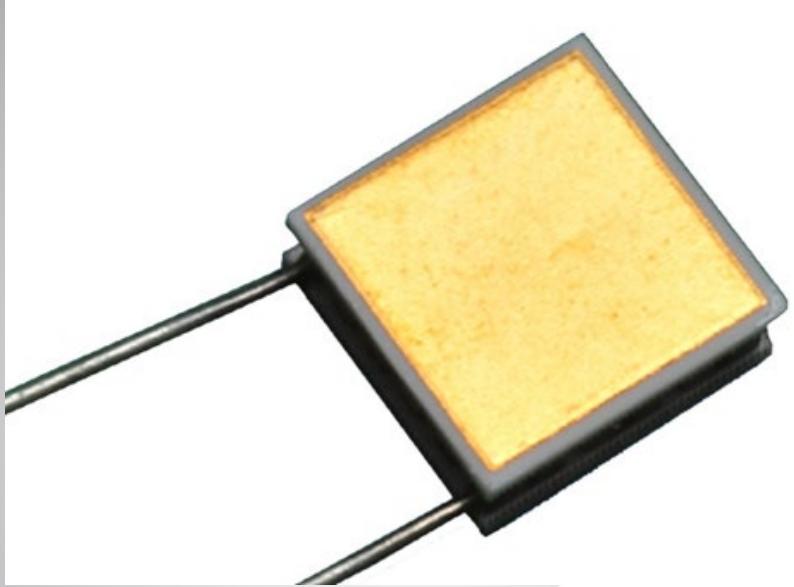




Technical Data Sheet for NL1013T

Single-Stage Thermoelectric Module

PRODUCT FEATURES

- RoHS EU Compliant
- Rated operating temperature of 85°C.
- Maximum processing temperature of 220°C.
- Ceramic Material: Aluminum Oxide
- Metallized Exterior Surfaces are Au flash, suitable for soldering.
- RTV Sealing options available.

NOMINAL PERFORMANCE IN NITROGEN

Hot Side Temperature (°C)	27	50
Δ Tmax (°C):	61	69
Qmax (watts):	4.8	5.4
I _{max} (amps):	1.0	1.0
V _{max} (vdc):	8.5	9.6
AC Resistance (ohms):	7.42	

ORDERING OPTIONS

Model Number	Description
NL1013T-02AC	TEM, Base Metallized Exterior
NL1013T-03AC	TEM, No Metallized Exterior
NL1013T-04AC	TEM, No Metallized Exterior, RTV Sealed, Special Wires

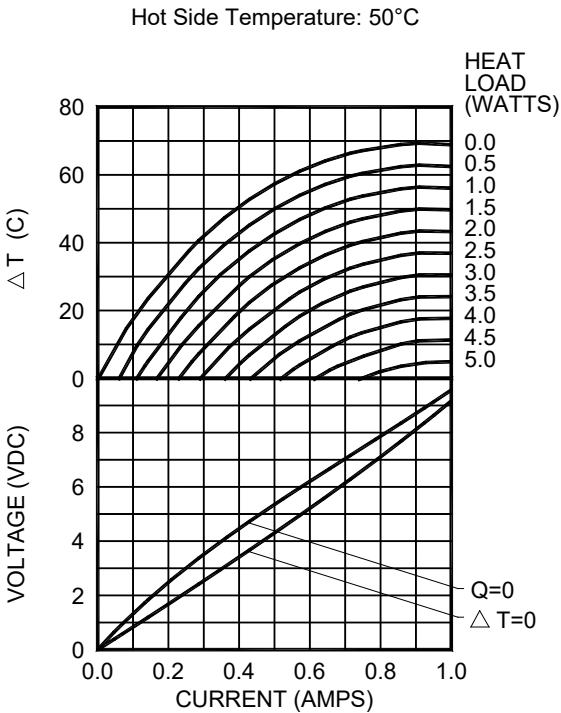
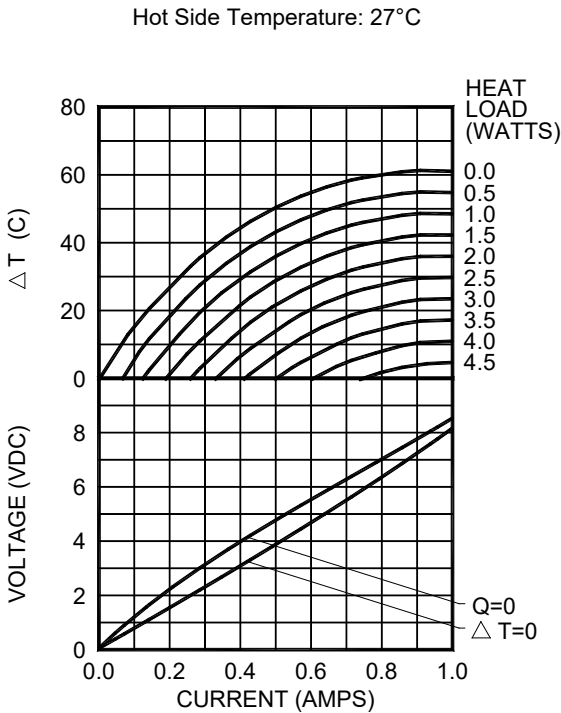
OPERATION CAUTIONS

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

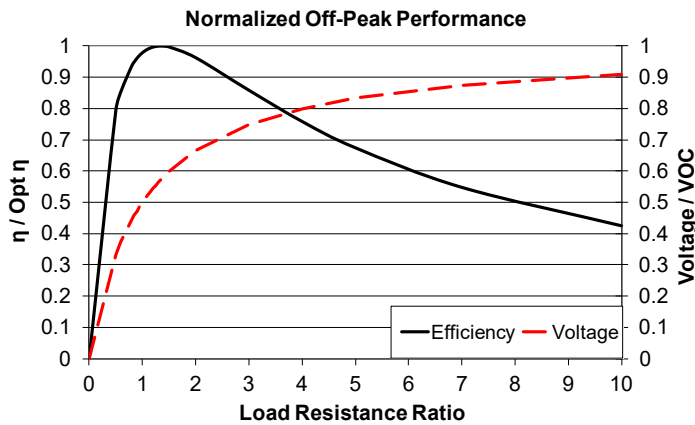
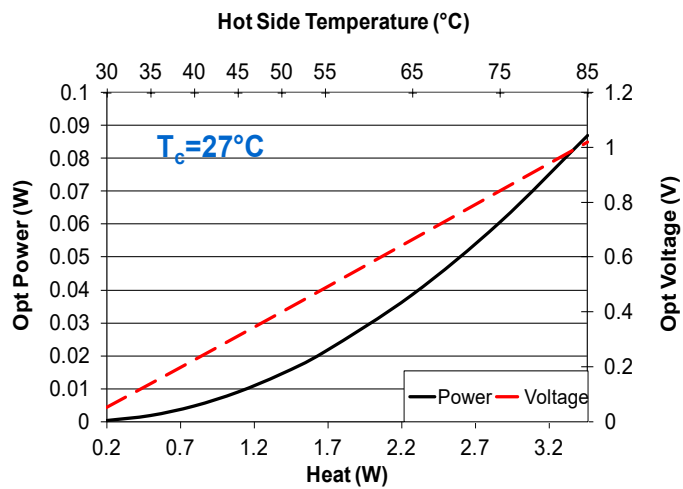
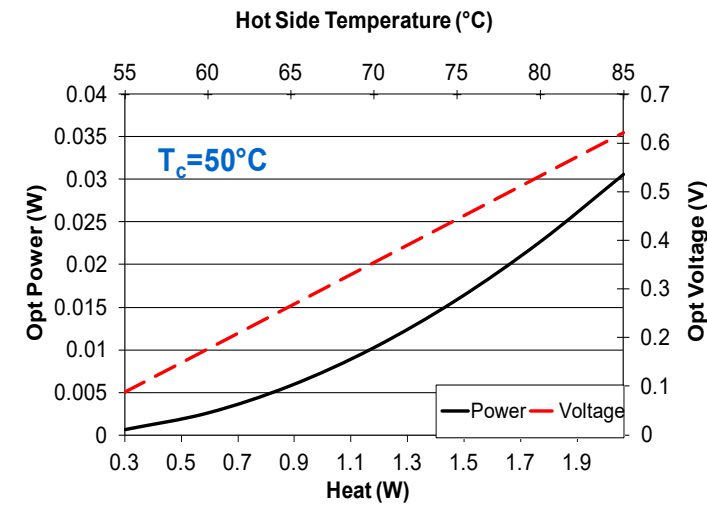
Recommended mounting methods: Bonding with thermal epoxy or soldering with metallized ceramics. For additional information, please refer to our TEM Installation Guide.

TYPICAL PERFORMANCE CURVES
ENVIRONMENT: 10⁻⁵ TORR VACUUM

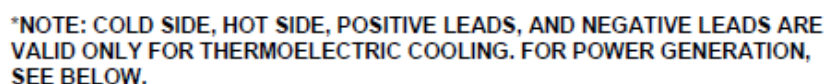


For performance information in a vacuum or with hot side temperatures other than 27°C or 50°C, contact one of our Applications Engineers at 877-627-5691.

POWER GENERATION PERFORMANCE CURVES



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)	0.087	0.021	0.002
Optimum Voltage (V)	1.021	0.487	0.138
Load Resistance for Opt η (Ω)	12.00	11.20	10.65
Open Circuit Voltage, VOC (V)	1.79	0.85	0.24
Short Circuit Current (A)	0.20	0.10	0.03
Thermal Resistance ($^{\circ}\text{C}/\text{W}$)	16.86	16.88	16.85



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

Hot Side, T_h

Cold Side, T_c