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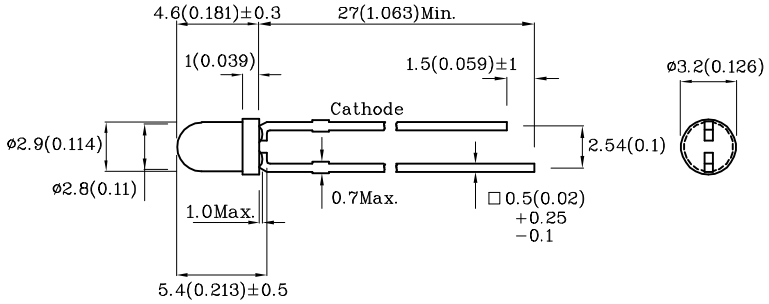
**Part Number: XTNI11W**

T-1 (3mm) Infrared Emitting Diode

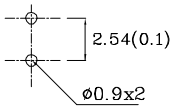
## Features

- Radial / Through hole package
- Reliable & robust
- Low power consumption
- Available on tape and reel
- RoHS Compliant

## Package Schematics




Recommended PCB Layout




Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.

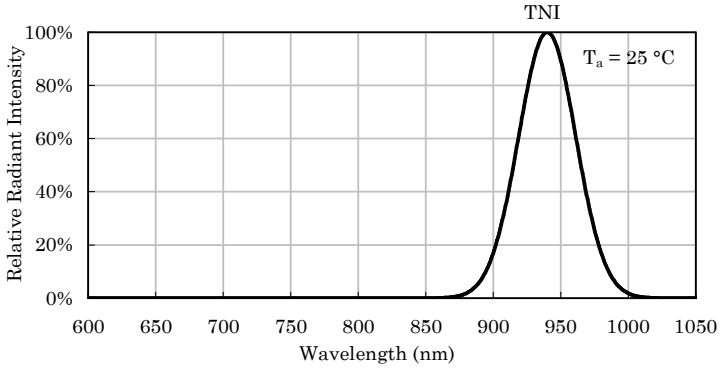
| **Absolute Maximum Ratings ($T_A$=25°C)** | | **TNI (GaAs)** | **Unit** |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 5 | V |
| Forward Current | $I_F$ | 50 | mA |
| Forward Current (Peak)<br>1/10 Duty Cycle<br>0.1ms Pulse Width | iFS | 1200 | mA |
| Power Dissipation | $P_D$ | 90 | mW |
| Operating Temperature | $T_A$ | -40 ~ +85 | °C |
| Storage Temperature | Tstg | -40 ~ +85 | |
| Lead Solder Temperature<br>[2mm Below Package Base] | 260°C For 3 Seconds | | |
| Lead Solder Temperature<br>[5mm Below Package Base] | 260°C For 5 Seconds | | |

A Relative Humidity between 40% and 60% is recommended in ESD-protected work areas to reduce static build up during assembly process (Reference JEDEC/JESD625-A and JEDEC/J-STD-033)

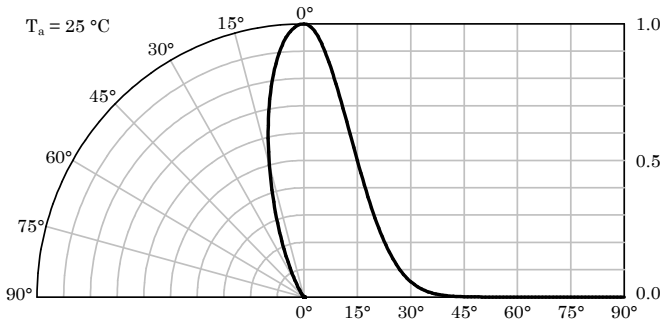
| **Operating Characteristics ($T_A$=25°C)** | | **TNI (GaAs)** | **Unit** |
|---|---|---|---|
| Forward Voltage (Typ.)<br>($I_F$=20mA) | $V_F$ | 1.2 | V |
| Forward Voltage (Max.)<br>($I_F$=20mA) | $V_F$ | 1.6 | V |
| Reverse Current (Max.)<br>($V_R$=5V) | $I_R$ | 10 | μA |
| Wavelength of Peak<br>Emission CIE127-2007*(Typ.)<br>($I_F$=20mA) | λP | 940* | nm |
| Spectral Line Full Width<br>At Half-Maximum (Typ.)<br>($I_F$=20mA) | △λ | 50 | nm |
| Capacitance (Typ.)<br>($V_F$=0V, f=1MHz) | C | 90 | pF |

| Part Number | Emitting Material | Lens-color | Radiant Intensity (Po=mW/sr) CIE127-2007* @20mA | | Radiant Intensity (Po=mW/sr) CIE127-2007* @50mA | | Wavelength CIE127-2007* nm λP | Viewing Angle 2θ 1/2 |
|---|---|---|---|---|---|---|---|---|
| | | | min. | typ. | min. | typ. | | |
| XTNI11W | GaAs | Water Clear | 5 | 9 | 18 | 31 | 940* | 30° |
| | | | 3* | 7* | 12* | 24* | | |

*Radiant Intensity value and wavelength are in accordance with CIE127-2007 standards.

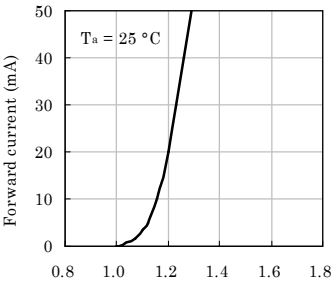



Relative Intensity Vs. CIE Wavelength

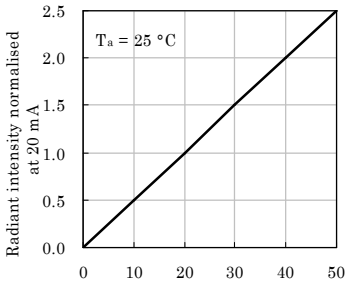



Spatial Distribution

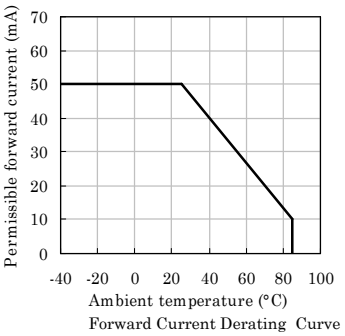
## ❖ TNI



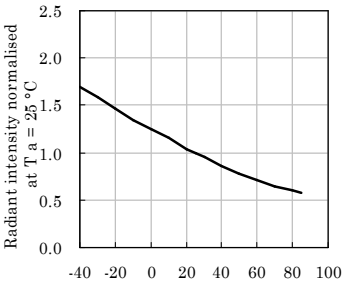

Forward Current vs.
Forward Voltage




Radiant Intensity vs.
Forward Current

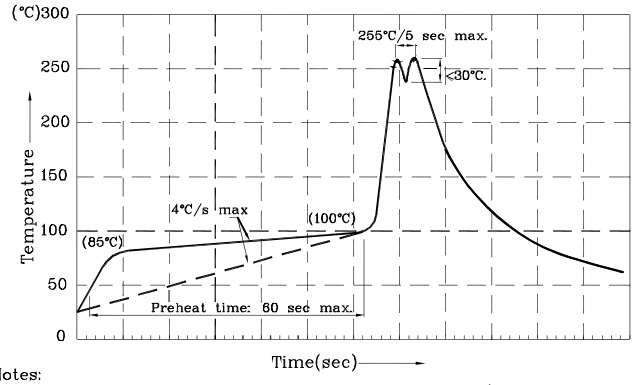



Forward Current Derating Curve




Radiant Intensity vs.
Ambient Temperature

Wave Soldering Profile For Thru-Hole Products (Pb-Free Components)




Notes:
1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress to the epoxy resin while the temperature is above 85°C.
4. Fixtures should not incur stress on the component when mounting and during soldering process.
5. SAC 305 solder alloy is recommended.
6. No more than one wave soldering pass.

Remarks:

If special sorting is required (e.g. binning based on forward voltage or radiant intensity / luminous flux),

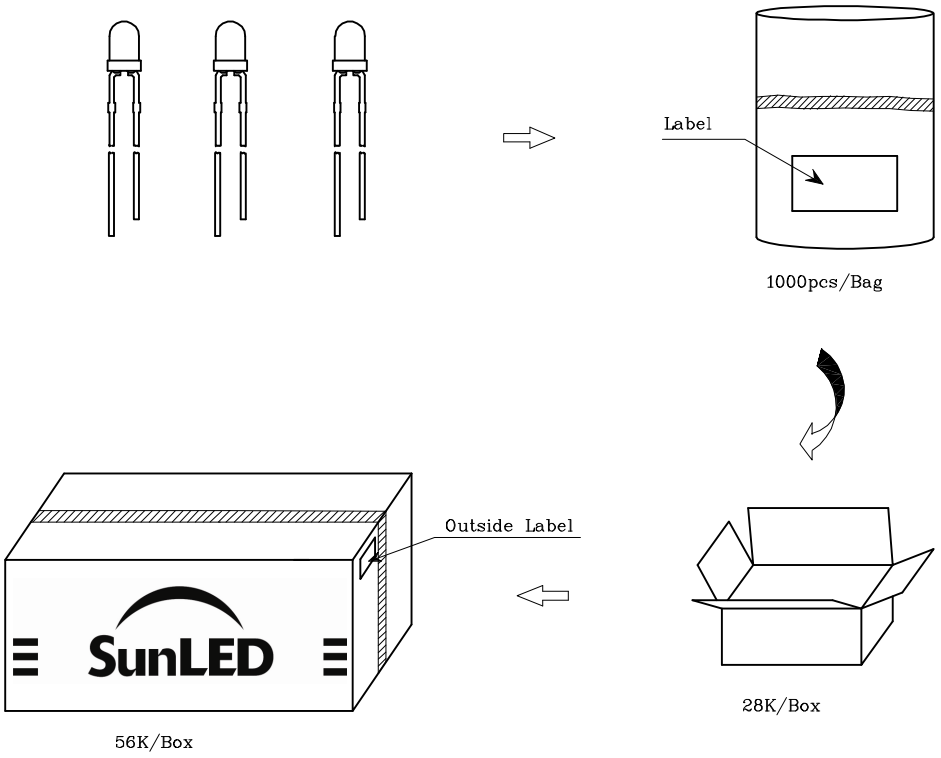
the typical accuracy of the sorting process is as follows:

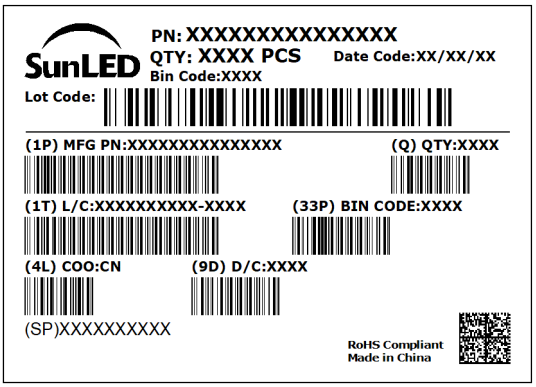
1. Radiant Intensity / Luminous Flux: +/-15%

2. Forward Voltage: +/-0.1V

Note: Accuracy may depend on the sorting parameters

## PACKING & LABEL SPECIFICATIONS

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