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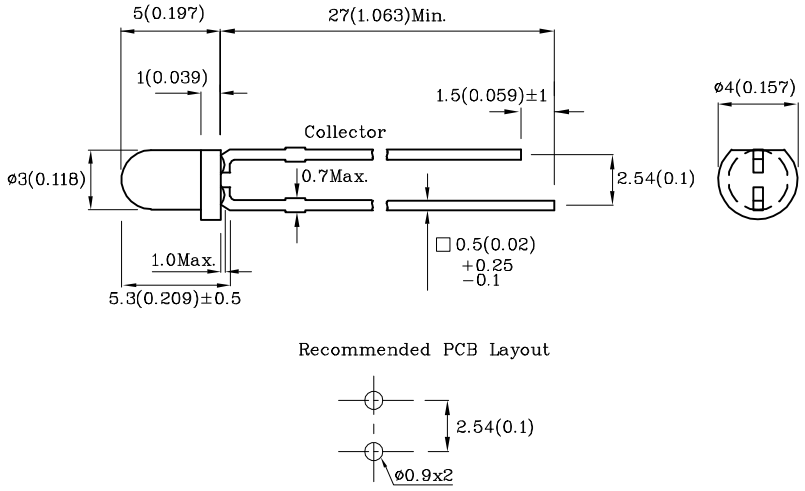
**Part Number: XRNI30W-1**

Phototransistor

## Features

- Radial / Through hole package
- Reliable & robust
- Low power consumption
- RoHS Compliant

## Package Schematics




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.

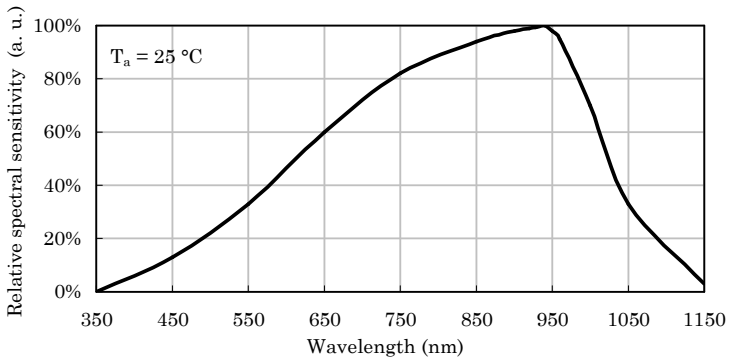
## Electrical / Optical Characteristics at TA=25°C

| Symbol | Parameter | Min. | Typ. | Max. | Unit | Test Condiction |
|---|---|---|---|---|---|---|
| $V_{BR\ CEO}$ | Collector-to-Emitter Breakdown Voltage | 30 | - | - | V | $I_C$ = 100μA<br>$E_e$ = 0mW/cm² |
| $V_{BR\ ECO}$ | Emitter-to-Collector Breakdown Voltage | 5 | - | - | V | $I_E$ = 100μA<br>$E_e$ = 0mW/cm² |
| $V_{CE(SAT)}$ | Collector-to-Emitter Saturation Voltage | - | - | 0.8 | V | $I_C$ = 2mA<br>$E_e$ = 20mW/cm² |
| $I_{CEO}$ | Collector Dark Current | - | - | 100 | nA | $V_{CE}$ = 10V<br>$E_e$ = 0mW/cm² |
| $T_R$ | Rise Time (10% to 90%) | - | 15 | - | μs | $V_{CE}$ = 5V<br>$I_C$ = 1mA<br>$R_L$ = 1KΩ |
| $T_F$ | Fall Time (90% to 10%) | - | 15 | - | μs | |
| $I_{(ON)}$ | On State Collector Current | 0.3 | 0.8 | - | mA | $V_{CE}$ = 5V<br>$E_e$ = 1mW/cm²<br>λ= 940nm |
| $\lambda_{0.1}$ | Range of spectral bandwidth | 420 | - | 1120 | nm | - |
| $\lambda_p$ | Wavelength of peak sensitivity | - | 940 | - | nm | - |
| 2θ1/2 | Angle of half sensitivity | - | 50 | - | deg | - |

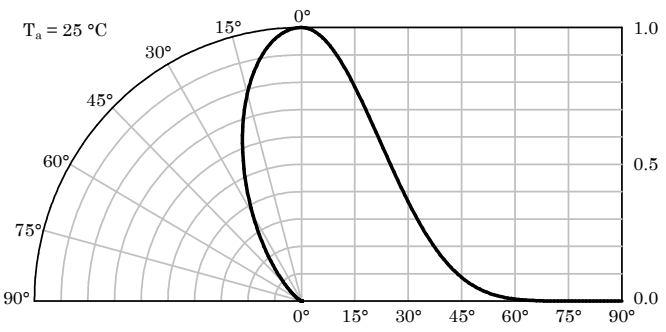
## Absolute Maximum Ratings at TA=25°C

| Parameter | Maximum Ratings |
|---|---|
| Collector-to-Emitter Voltage | 30V |
| Emitter-to-Collector Voltage | 5V |
| Power Dissipation at (or below) 25°C Free Air Temperature | 100mW |
| Operating / Storage Temperature Range | -40 ~ +85°C |
| Lead Solder Temperature (>5mm for 5sec) | 260°C |

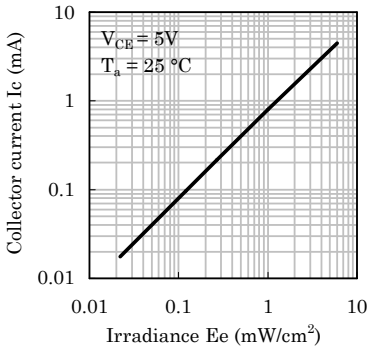
A Relative Humidity between 40% and 60% is recommended in
ESD-protected work areas to reduce static build up during assembly process (Reference JEDEC/JESD625-A and JEDEC/J-STD-033)



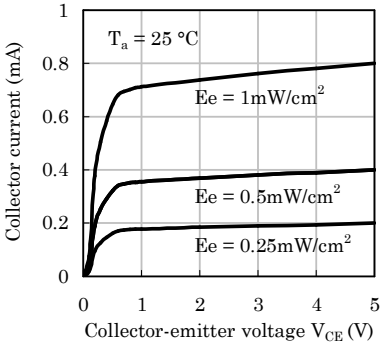

Relative Intensity Vs. CIE Wavelength



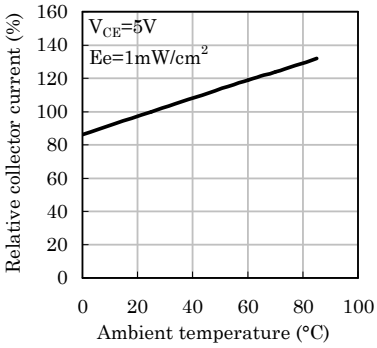

Spatial Distribution



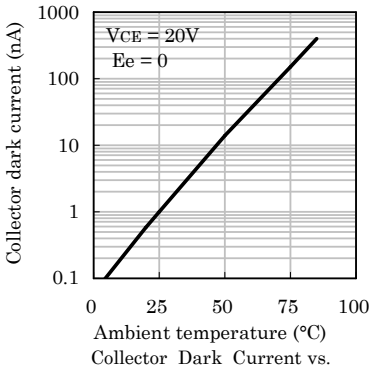

Collector Current vs.
Irradiance



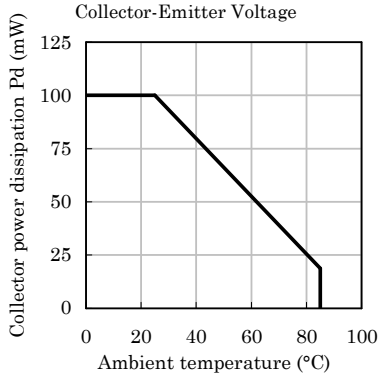

Collector Current vs.
Collector-Emitter Voltage



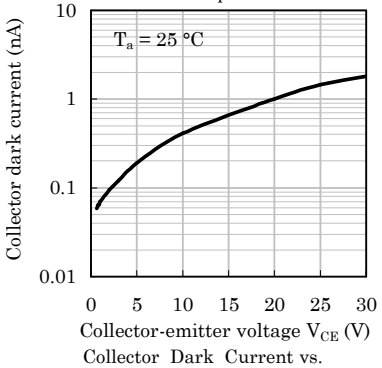

Relative Collector Current vs.
Ambient Temperature




Collector Dark Current vs.
Ambient Temperature

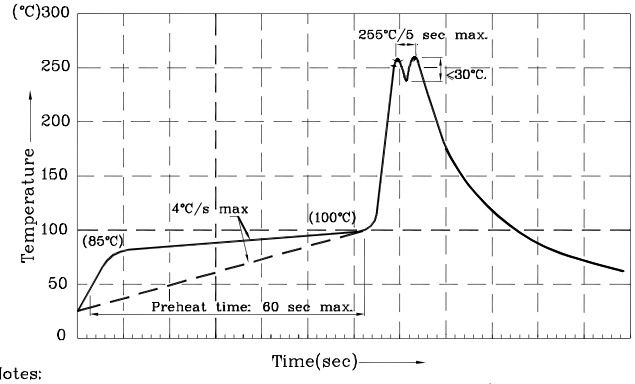



Collector Power Dissipation vs.
Ambient Temperature



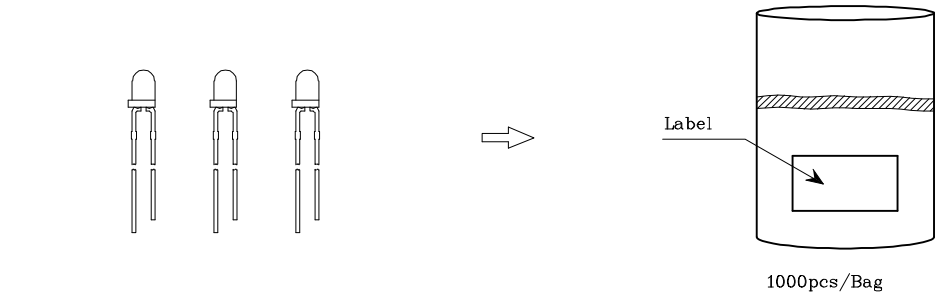

Collector Dark Current vs.
Collector-Emitter Voltage

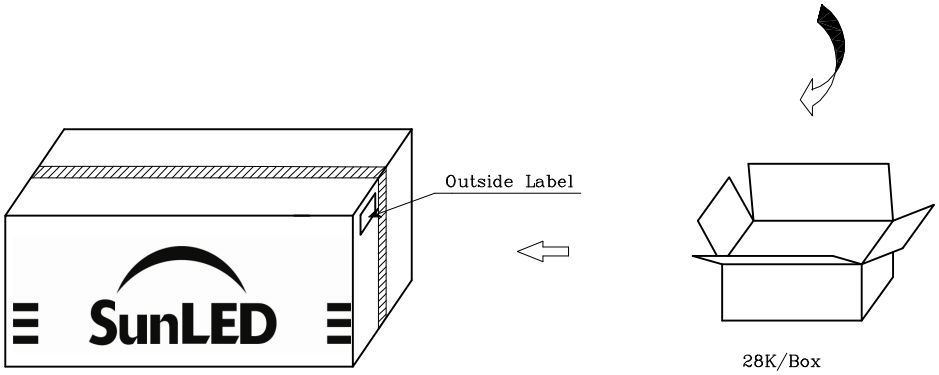
Wave Soldering Profile For Thru-Hole Products (Pb-Free Components)

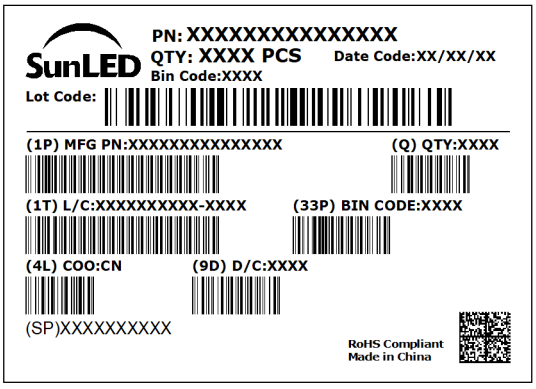



Notes:
1. Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C
2. Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
3. Do not apply stress 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.

## PACKING & LABEL SPECIFICATIONS




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