Features

- 3.2 x 2.7 SMD LED
- Low power consumption
- General purpose leads
- Bulk, Available on tape and reel
- Fast response time
- High photo sensitivity
- Small junction capacitance

Applications

- High speed photo detector
- Automatic door sensor
- Security system
- Industrial equipment
- Infrared application system

Description

The IN-S32GTNPD is a popular 3.2 x 2.7mm package with versatile design capabilities. It is a PCB type LED which can be used in various applications. Due to its **black** epoxy, the device is matched to visible light and infrared radiation.

Recommended Solder Pattern

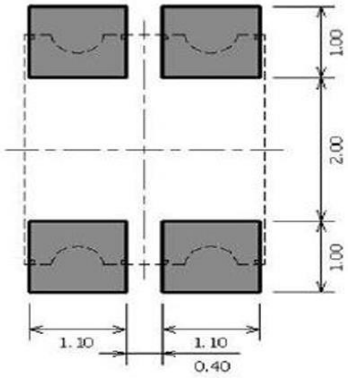
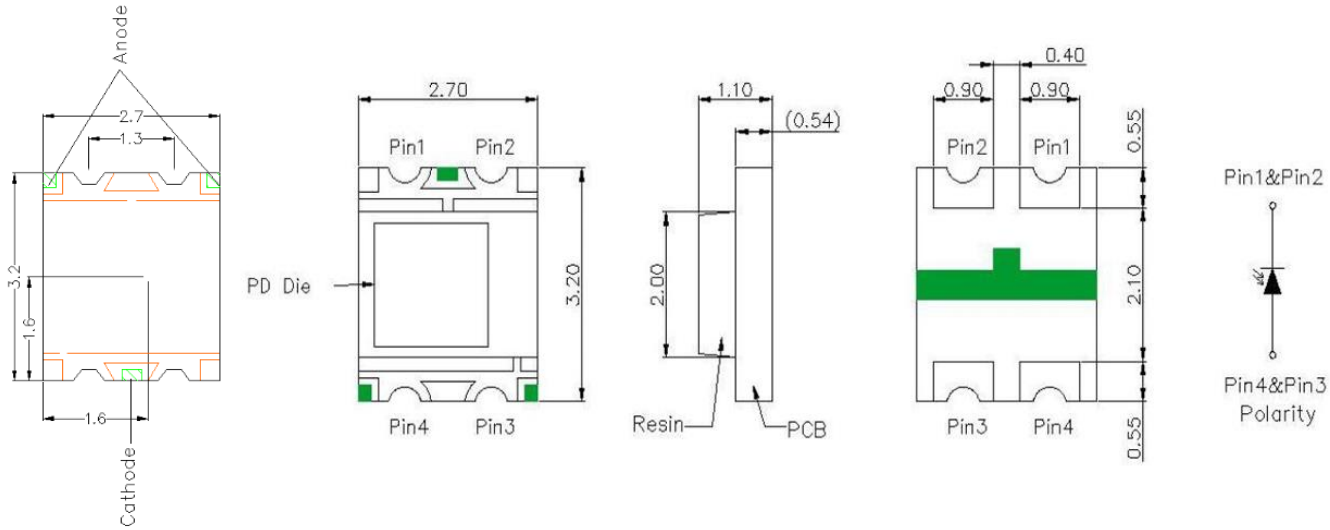


Figure 1. IN-S32GTNPD Solder Pattern

Package Dimensions in mm



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ± 0.25 mm (.010〃) unless otherwise noted.

Figure 1. IN-S32GTNPD Package Dimensions

Absolute Maximum Rating at 25ºC

Symbol	Parameters	Ratings	Units	Notes
V_{BR}	Reverse Breakdown Voltage	35	V	1
T_{opr}	Operating Temperature	-40~+85	℃	
T_{stg}	Storage Temperature	-40~+85	℃	
T_{sol}	Soldering Temperature	260	℃	2
P_D	Total Power Dissipation	150	mW	

Notes

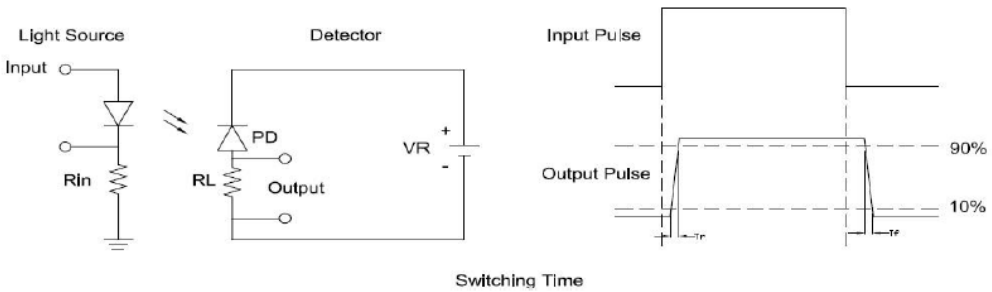
1. Test conditions : I_R=100μA, Ee=0mW/cm2.
2. Soldering time≦5 seconds.

Electro-Optical Characteristics

Symbol	Parameters	Test conditions	Min	Typ	Max	Units
λ_D	Rang of Spectral Bandwidth	---	700	-	1100	nm
λ_P	Wavelength of Peak Sensitivity	---	-	940		nm
V_{BR}	Reverse Breakdown Voltage	Ee=0mW/cm2 IR=100uA	35	-	-	V
V_{OC}	Open-Circuit Voltage	Ee=1mW/cm² λ_P=940nm	-	0.42	-	V
I_{SC}	Short-Circuit Current	Ee=1mW/cm² λ_P=940nm	-	8.5	-	uA
I_D	Dark Current	Ee=0mW/cm² VR=10V	-	-	10	nA
I_L	Reverse Light Current	Ee=1mW/cm² λ_P=940nm, VR=5V	5.7	-	16	uA
t_r	Rise Time	VR=5V, RL=1KΩ	-	10	-	uS
t_f	Fall Time		-	10	-	uS
C_T	Transition Capacitance	Ee=0mW/cm² f=1MHz, VR=5V		4.76		pF

Notes:

Test circuit：



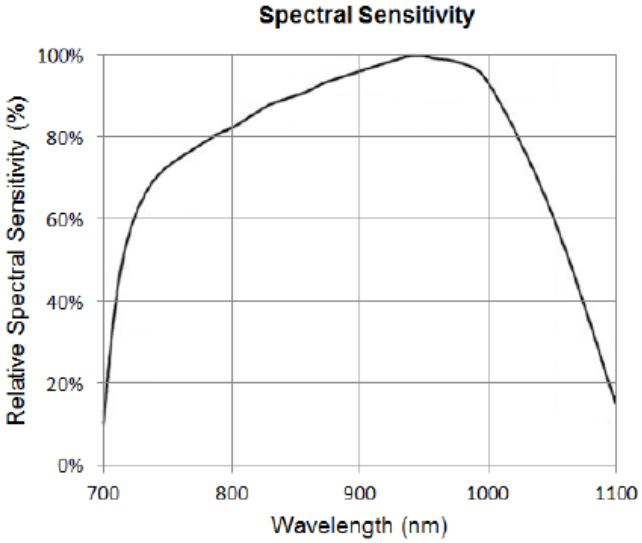
ESD Precaution

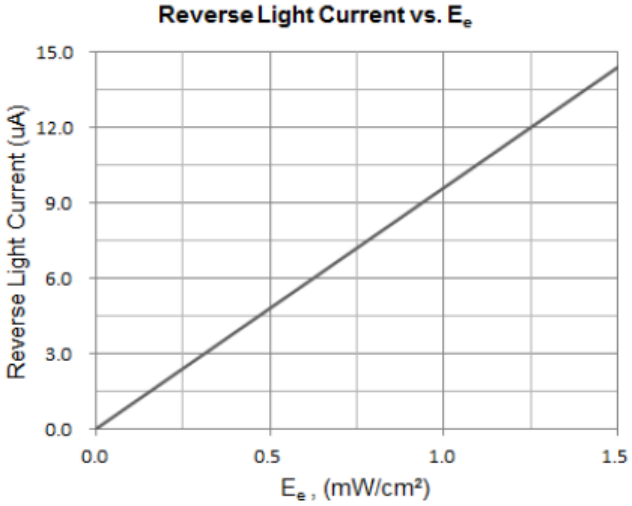
ATTENTION: Electrostatic Discharge (ESD) protection

The symbol above denotes that ESD precaution is needed. ESD protection for GaP and AlGaAs based chips is necessary even though they are relatively safe in the presence of low static-electric discharge. Parts built with AlInGaP, GaN, or/and InGaN based chips are STATIC SENSITIVE devices. ESD precaution must be taken during design and assembly.
If manual work or processing is needed, please ensure the device is adequately protected from ESD during the process.

Please be advised that normal static precautions should be taken in the handling and assembly of this device to prevent damage or degradation which may be induced by electrostatic discharge (ESD).

Typical Characteristic Curves

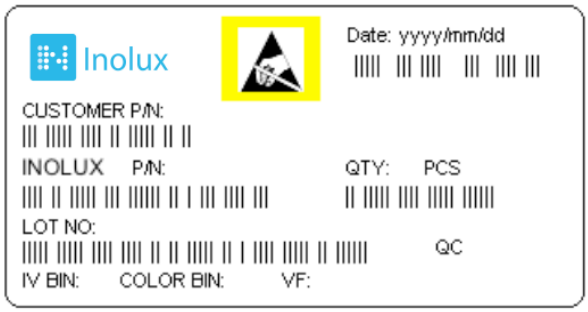




Ordering Information

Product	Symbol	Parameters	Test conditions	Min	Typ	Max	Units	Orderable Part Number
IN-S32GTNPD	I_L	Reverse Light Current	Ee=1mW/cm² λ_P=940nm, V_R=5V	5.7	-	16	uA	IN-S32GTNPD

Label Specifications



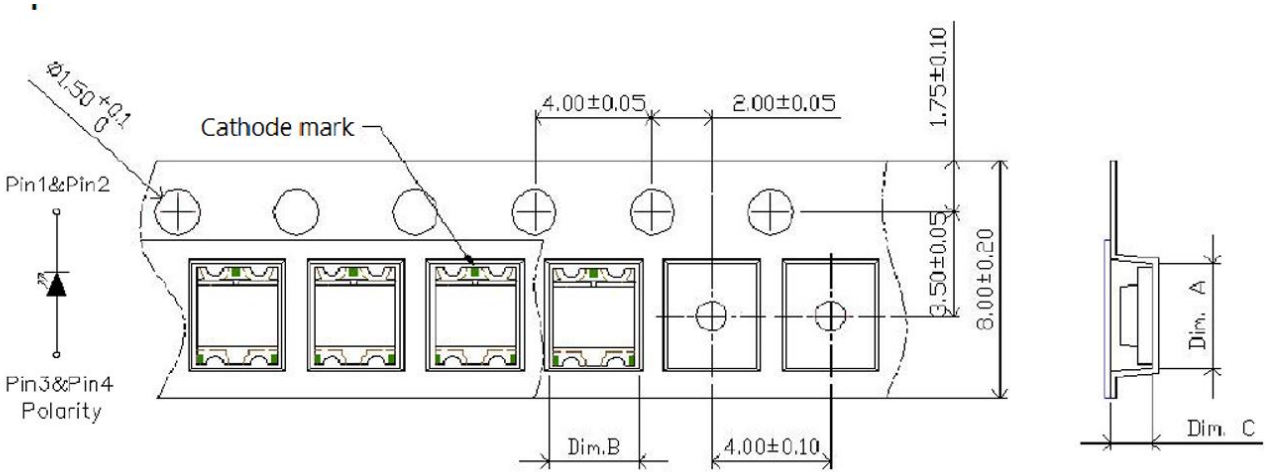
Inolux P/N:

I	N	-	S	3	2	G	T	N	PD	-	-	-	-	-
			Material	Package		Variation	Orientation	Lens	Color		Customized Stamp-off			
Inolux SMD			PCB - S	32G=3.2x2.7 1.1mm			T = Top Mount	N = Black	PD = Photo Diode					

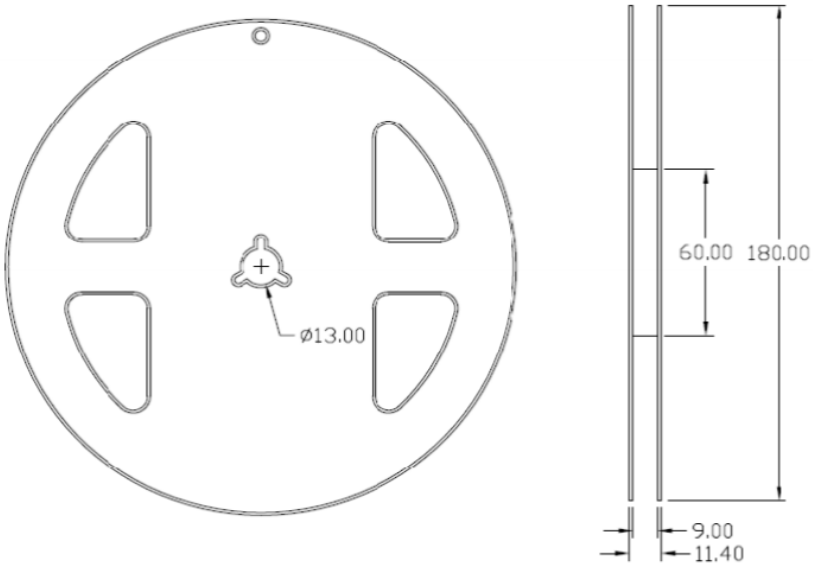
Lot No.:

Z	2	0	1	7	01	24	001
Internal Tracker	Year (2017, 2018, ...)				Month	Date	Serial

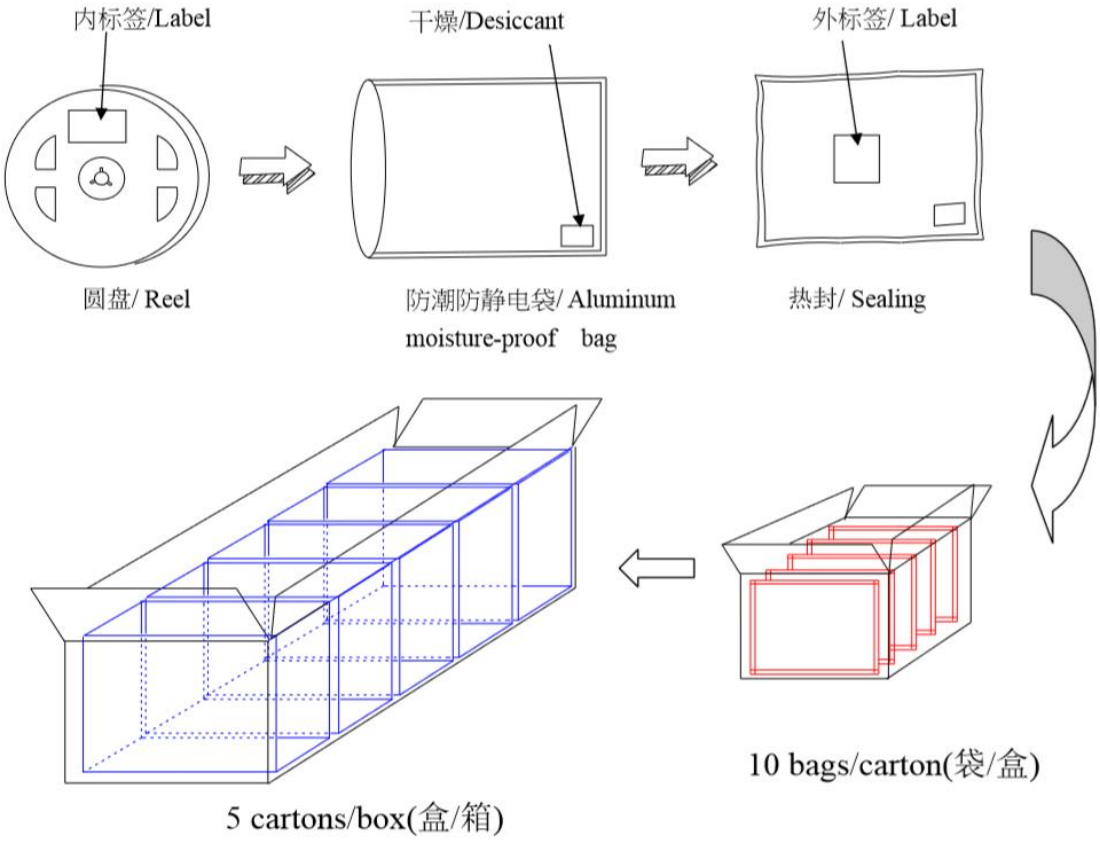
Packaging Information:



Reel Dimension



Packing Dimension



5 boxes per carton are available depending on shipment quantity.

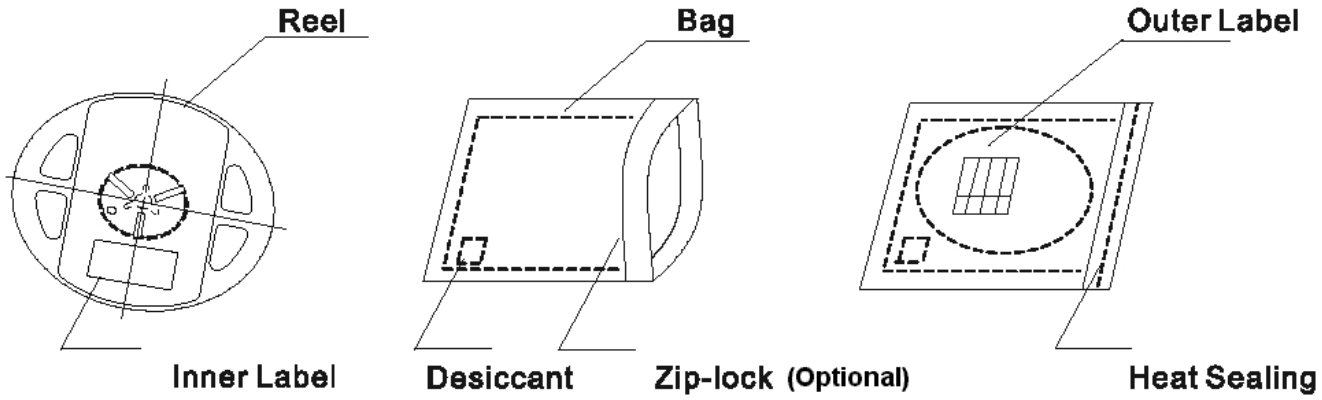
	Specification	Material	Quantity
Carrier tape	Per EIA 481-1A specs	Conductive black tape	3000pcs per reel
Reel	Per EIA 481-1A specs	Conductive black	
Label	IN standard	Paper	
Packing bag	220x240mm	Aluminum laminated bag/ no-zipper	One reel per bag
Carton	IN standard	Paper	Non-specified
Others: Each immediate box consists of 5 reels. The 5 reels may not necessarily have the same lot number or the same bin. Each reel has a label identifying its specification; the immediate box consists of a product label as well.			

Dry Pack

All SMD optical devices are **MOISTURE SENSITIVE**. Avoid exposure to moisture at all times during transportation or storage. Every reel is packaged in a moisture protected anti-static bag. Each bag is properly sealed prior to shipment.

Upon request, a humidity indicator will be included in the moisture protected anti-static bag prior to shipment.

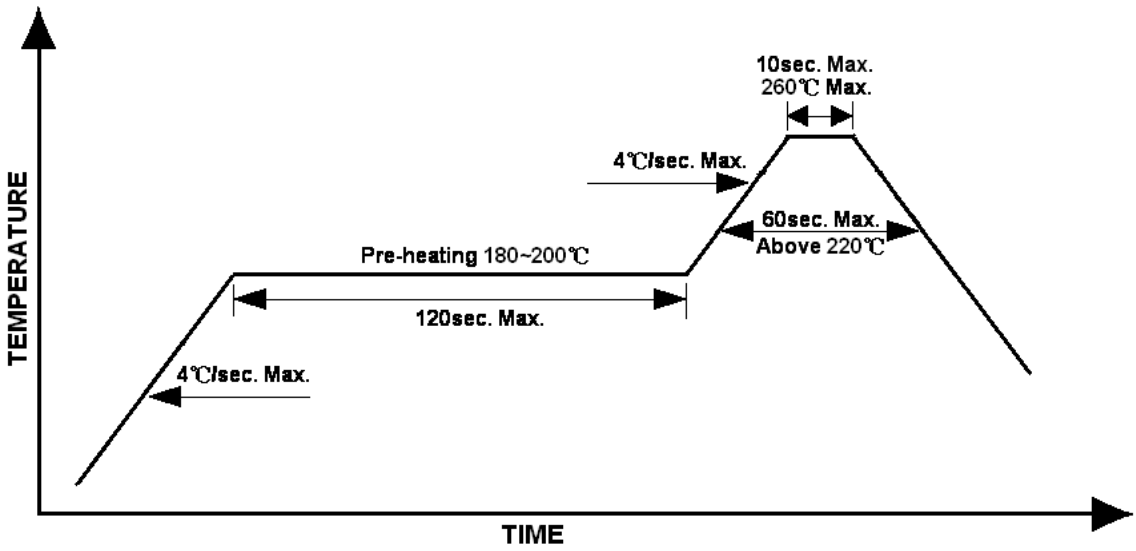
The packaging sequence is as follows:



Reflow Soldering

- Recommended tin glue specifications: melting temperature in the range of 178~192 ^{O}C
- The recommended reflow soldering profile is as follows (temperatures indicated are as measured on the surface of the LED resin):

Lead-free Solder Profile



Precautions

- Avoid exposure to moisture at all times during transportation or storage.
- Anti-Static precaution must be taken when handling GaN, InGaN, and AlInGaP products.
- It is suggested to connect the unit with a current limiting resistor of the proper size. Avoid applying a reverse voltage.
- Avoid operation beyond the limits as specified by the absolute maximum ratings.
- Avoid direct contact with the surface through which the LED emits light.
- If possible, assemble the unit in a clean room or dust-free environment.

Reworking

- Rework should be completed within 5 seconds under 260 ^{O}C.
- The iron tip must not come in contact with the copper foil.
- Twin-head type is preferred.

Cleaning

Following are cleaning procedures after soldering:

- An alcohol-based solvent such as isopropyl alcohol (IPA) is recommended.
- Temperature x Time should be 50^{o}C x 30sec. or <30^{o}C x 3min
- Ultra sonic cleaning: < 15W/ bath; bath volume ≤ 1liter
- Curing: 100 ^{O}C max, <3min

Cautions of Pick and Place

- Avoid stress on the resin at elevated temperature.
- Avoid rubbing or scraping the resin by any object.
- Electro-static may cause damage to the component. Please ensure that the equipment is properly grounded. Use of an ionizer fan is recommended.

Revision History

Changes since last revision	Page	Version No.	Revision Date
Initial Release		1.0	01-31-2019
Updated	1/5	1.1	01-09-2025

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