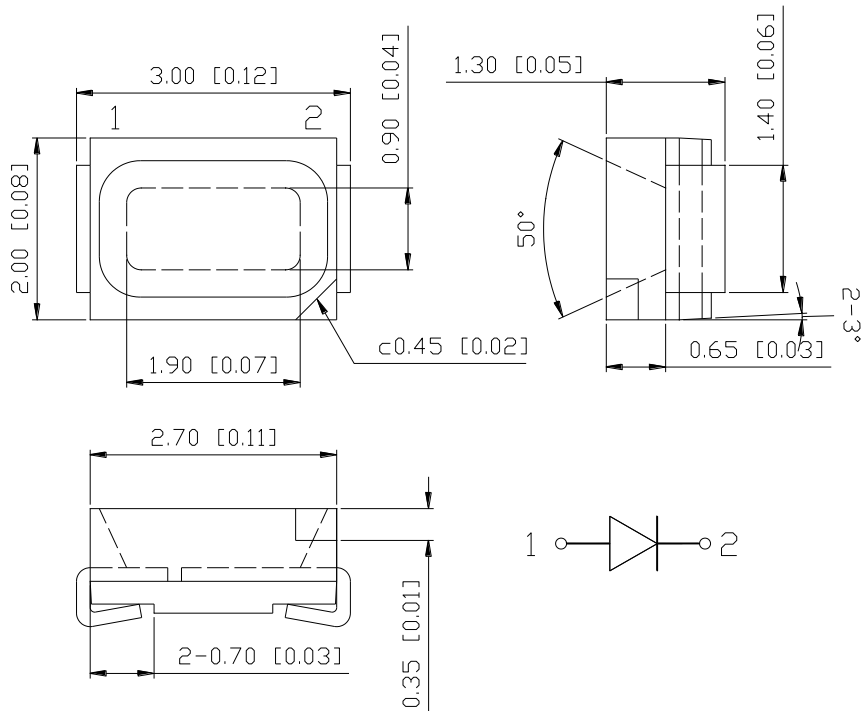


INFRARED EMITTING DIODE

Part Number: N0F32S13

Package outlines



ITEM	MATERIALS
Resin	Silicon
Lens color	Water transparent
Dice	GaAlAs

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.2\text{mm}$ (0.008inch) unless otherwise noted.

Rev :	Date	Drawn by :	Checked by :	Approved by :
A	2012/08/23	李梅英	許媚鳳	黃靜文

INFRARED EMITTING DIODE

Part Number: N0F32S13

Absolute maximum ratings

($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Value	Unit
Forward current	I_f	50	mA
Peak forward current Pulse width 100 μs , duty cycle =1%	I_{fp}	1	A
Reverse voltage	V_r	5	V
Power dissipation	P_d	90	mW
Operating temperature range	T_{op}	-40 ~+80	$^{\circ}\text{C}$
Storage temperature range	T_{stg}	-40 ~+85	$^{\circ}\text{C}$

Electro-optical characteristics

($T_A=25^{\circ}\text{C}$)

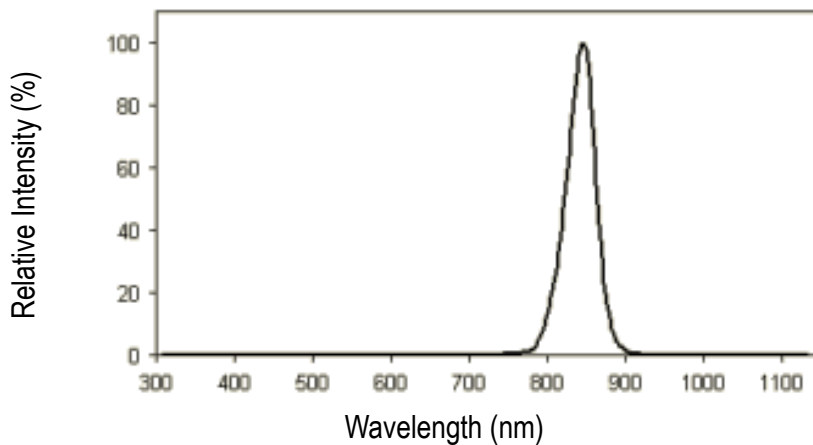
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Radiant intensity	$I_f=20\text{mA}$	I_e	0.6	1.1	2.1	mW/sr
Forward voltage	$I_f=20\text{mA}$	V_f	1.0	1.4	1.8	V
Peak wavelength	$I_f=20\text{mA}$	λ_p	840	850	860	nm
Spectral bandwidth	$I_f=20\text{mA}$	$\Delta\lambda$	--	42	--	nm
Reverse current	$V_r=5\text{V}$	I_r	--	--	10	μA
View angle	$I_f=10\text{mA}$	2θ 1/2	--	120	--	Deg

INFRARED EMITTING DIODE

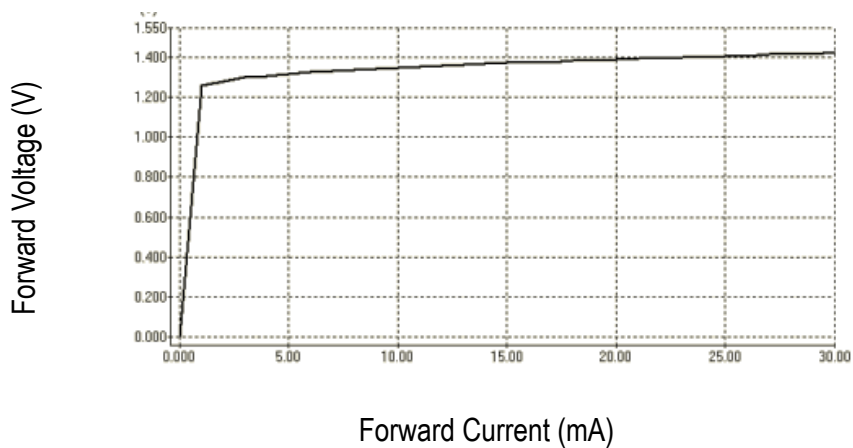
Part Number: N0F32S13

OPTICAL CHARACTERISTIC CURVES

Relative Intensity vs. Wavelength

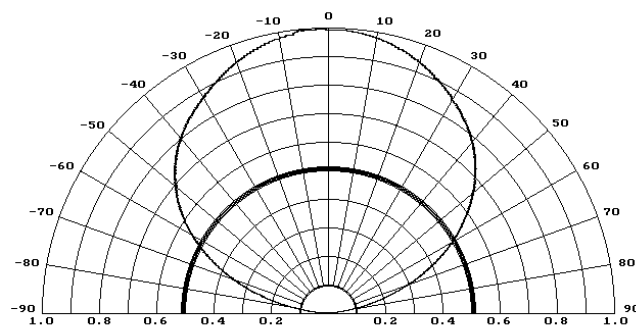


Forward Current vs. Forward Voltage



Forward Current (mA)

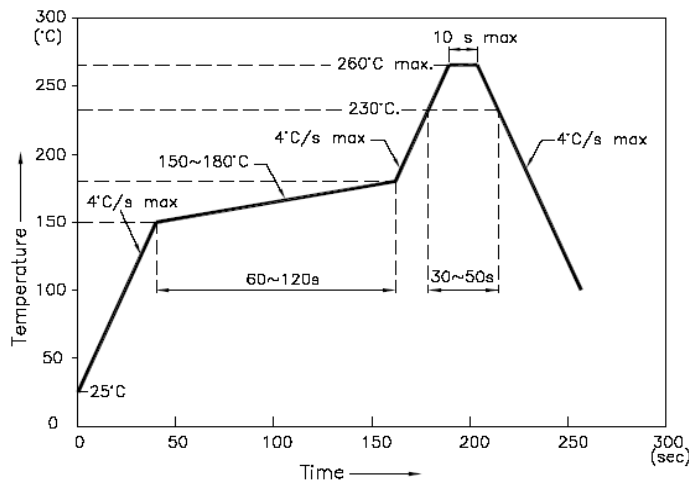
Directive Characteristics



INFRARED EMITTING DIODE

Reflow Profile

■ Reflow Temp/Time



NOTES:

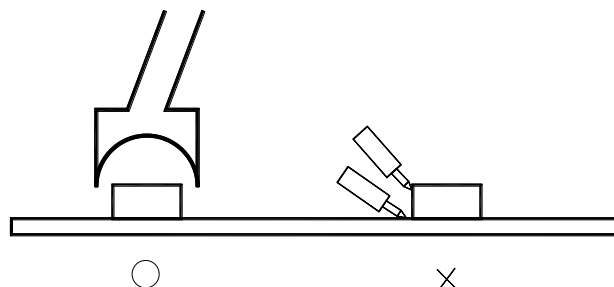
1. We recommend the reflow temperature $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$. the maximum soldering temperature should be limited to 260°C .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■ Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

■ Rework

1. Customer must finish rework within 5 sec under 260°C .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

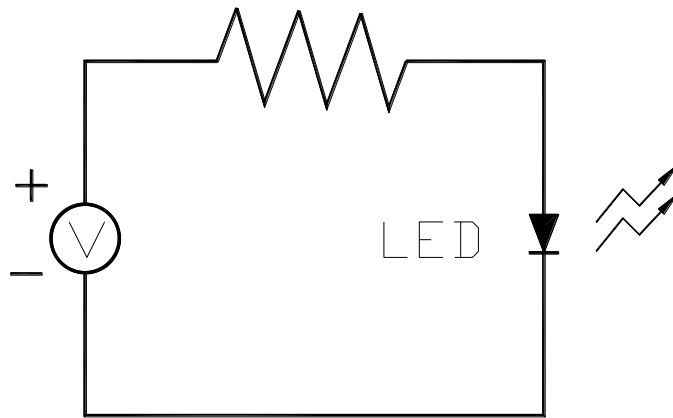


- ### ■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

INFRARED EMITTING DIODE

Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Shelf life in sealed bag: 12 month at 5°C~30°C and < 60% R.H;

3. After the package is Opened:

3.1. It is recommended to baking before the first use:

Baking condition:

- 60±3°C (36~48hrs) and < 5%RH, taped reel type ;
- 110±3°C (8~16hr), bulk type ;

3.2 The products should be used within a week:

- It is recommended to baking before soldering when the pack is unsealed after 72hrs ;
- Baking condition as 3.1 baking condition.

INFRARED EMITTING DIODE

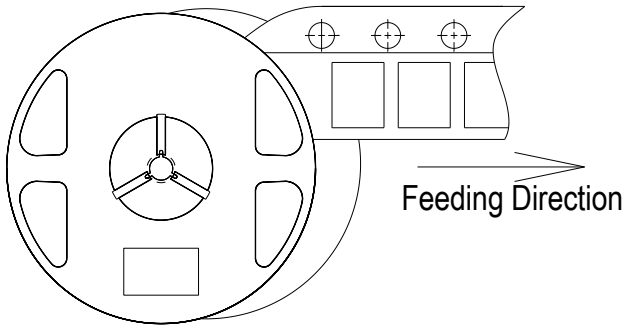
Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20°C 30min ↑ ↓ 80°C 30min	100 cycle	0/22
	Thermal Shock	-20°C 15min ↑ ↓ 80°C 15min	100 cycle	0/22
	High Humidity Heat Cycle	30°C ↔ 65°C 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T _a =80°C	1000 hrs	0/22
	Humidity Heat Storage	T _a =60°C RH=90%	1000 hrs	0/22
	Low Temperature Storage	T _a =-30°C	1000 hrs	0/22
Operation Sequence	Life Test	T _a =25°C I _F =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I _F =10mA	500 hrs	0/22
	Low Temperature Life Test	T _a =-20°C I _F =20mA	1000 hrs	0/22

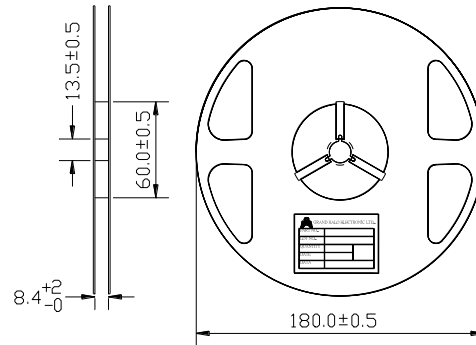
This specification is preliminary

3020 Single-Color High Performance SMD Top LEDs Packaging Specifications

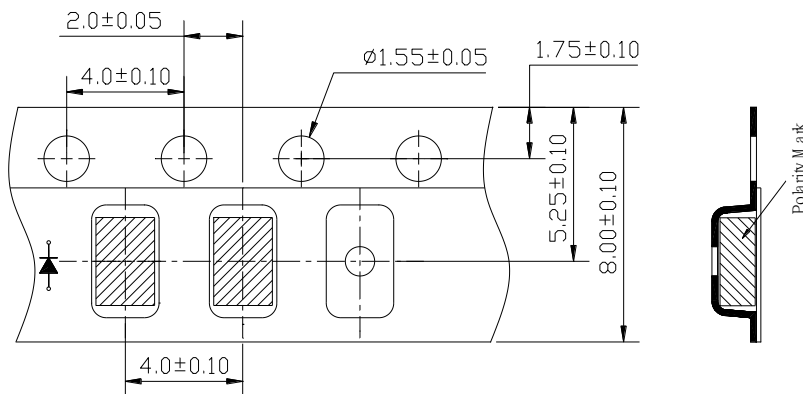
● Feeding Direction



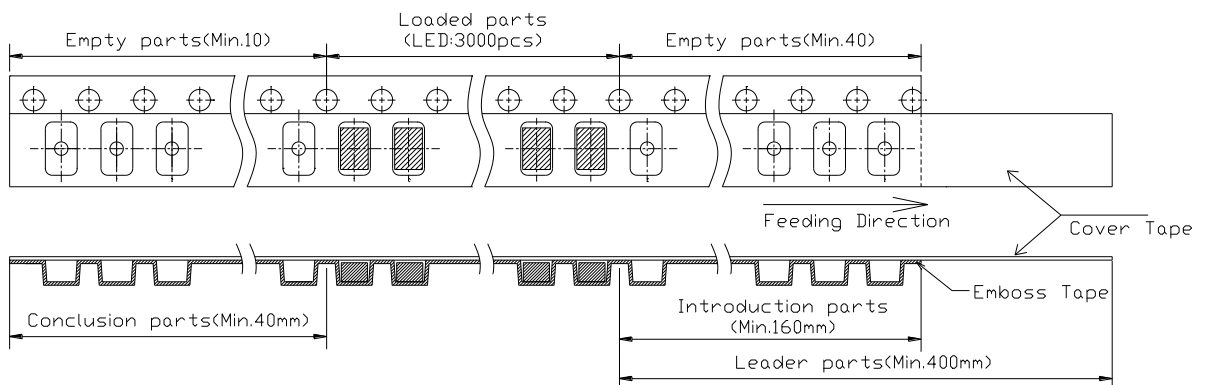
● Dimensions of Reel (Unit: mm)



● Dimensions of Tape (Unit: mm)



● Arrangement of Tape

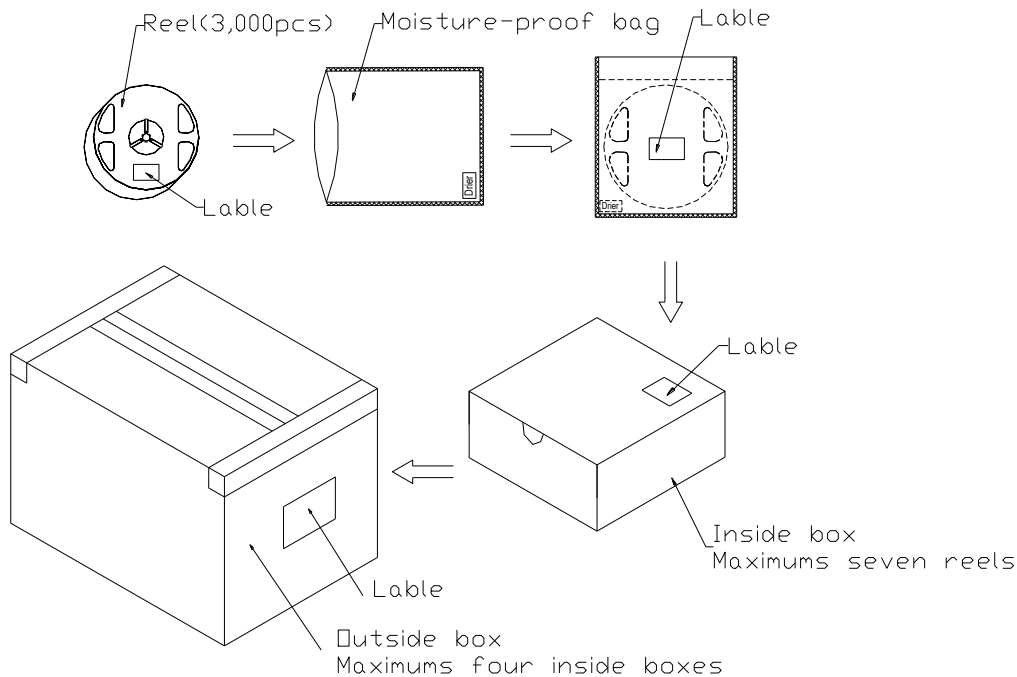


NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole;
4. 3,000pcs/Reel

3020 Single-Color High Performance SMD Top LEDs Packaging Specifications

- Packaging specifications



NOTES:

Reeled products (numbers of products are 3,000 pcs) packed in a seal off moisture-proof bag along with desiccant and Humidity card one by one, Seven moisture-proof bag of maximums (total maximum number of products are 21,000 pcs) packed in an inside box (size: about 238mm x about 194mm x about 102 mm) and four inside boxes of maximums are put in the outside box (size: about 410mm x about 254mm x about 229mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.

INFRARED EMITTING DIODE

Part Number: N0F32S13

Forward Voltage Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
<input type="checkbox"/>	1.00	1.80	V

Radiant Intensity Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
B	0.60	1.10	mW/sr
C	1.10	1.60	
D	1.60	2.10	

Peak wavelength Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
<input type="checkbox"/>	840	860	nm

Group Name on Label (Example DATA: B 20)

DATA: <input type="checkbox"/> B <input type="checkbox"/> 20	Vf(V)	Ie (mW/Sr)	λ_p (nm)	Test Condition
<input type="checkbox"/> →B→ <input type="checkbox"/> →20	1.00~1.80	0.60~1.10	840~860	IF=20mA

※ NOTE:

1. The tolerance of Radiant incidence (Ie)is $\pm 15\%$.
2. The tolerance of Peak wavelength is $\pm 1\text{nm}$.
3. This specification is preliminary.