

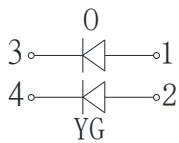
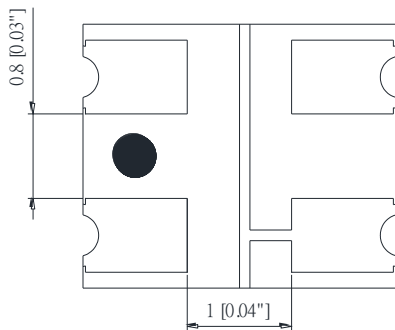
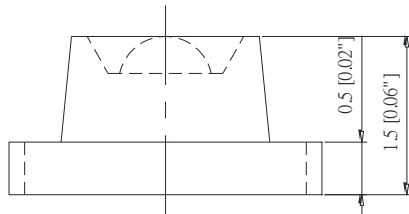
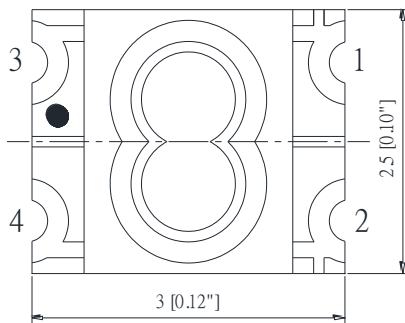
SURFACE MOUNT LED LAMPS

S127 Series SMD Chip LED Lamps

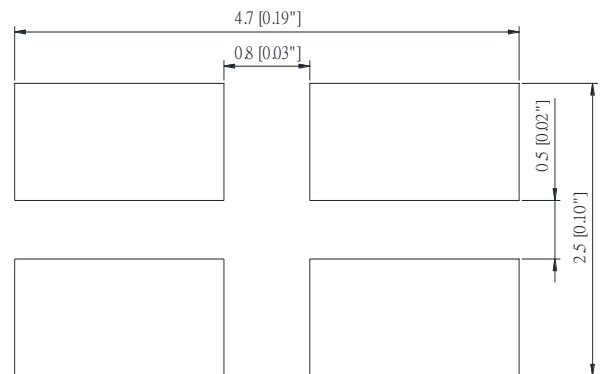
Part NO.: N0D31S37

Code NO.:

Package outlines



RECOMMEND PAD LAYOUT



ITEM	MATERIALS	
Resin (mold)	Epoxy	
Lens color	Water transparent	
Dice	Red	AlGaAs/GaAs
	Green	GaP/GaP

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.1\text{mm}$ (0.004inch) unless otherwise noted.

Rev :	Date	Drawn by :	Checked by :	Approved by :
A	2016/07/12	唐云	李用基	黃靜文

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Absolute maximum ratings

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

Parameter	Symbol	Value		Unit
		R	G	
Power dissipation	Pd	75	75	mW
Forward current	If	30		mA
Reverse voltage	Vr	5		V
Operating temperature range	Top	-40 ~+80		$^{\circ}\text{C}$
Storage temperature range	Tstg	-40 ~+85		$^{\circ}\text{C}$
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125		mA

Electro-optical characteristics

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

Parameter	Test Condition	Symbol	Value			Unit	
			Min	Typ	Max		
Wavelength at peak emission	If=20mA	λ_{peak}	R	--	652	--	nm
			G	--	565	--	
Spectral half bandwidth	If=20mA	$\Delta\lambda$	R	--	22	--	nm
			G	--	30	--	
Dominant wavelength	If=20mA	λ_{dom}	R	630	640	650	nm
			G	565	570	576	
Forward voltage	If=20mA	Vf	R	1.7	1.8	2.5	V
			G	1.7	2.2	2.5	
Luminous intensity	If=20mA	Iv	R	32	55	100	mcd
			G	25	45	80	
Viewing angle at 50% Iv	If=10mA	$2\theta_{1/2}$	--	40	--	Deg	
Reverse current	Vr=5V	Ir	--	--	10	μA	

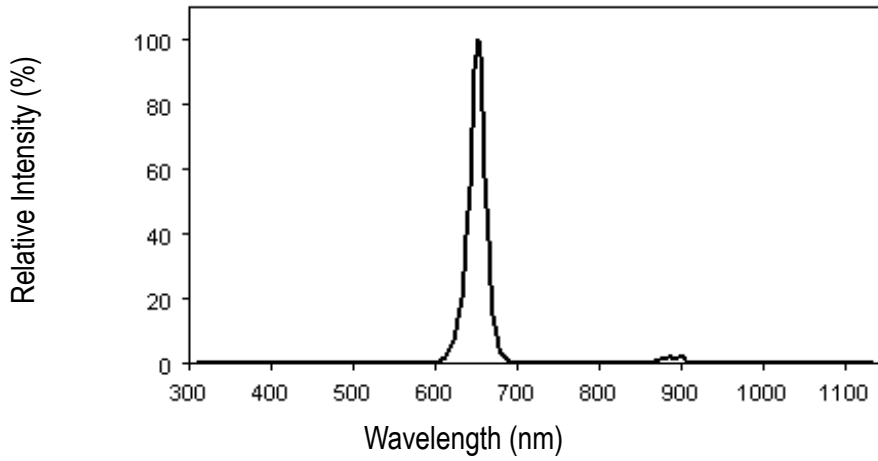
SURFACE MOUNT LED LAMPS

Part NO.: N0D31S37

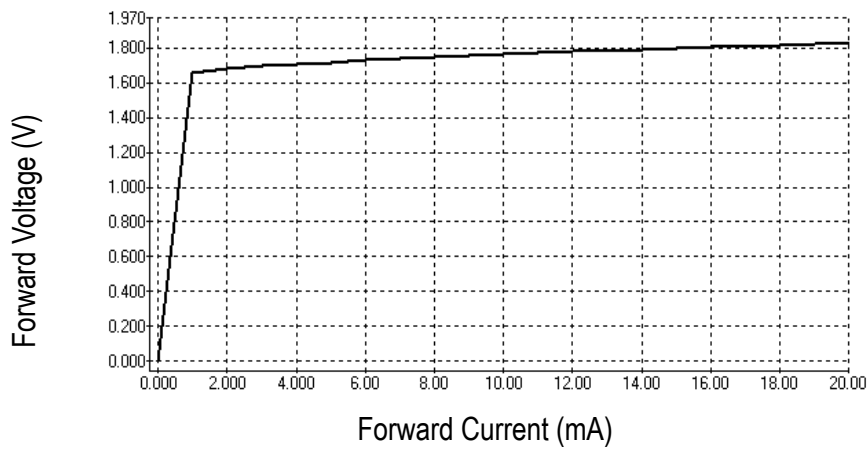
Code NO.:

OPTICAL CHARACTERISTIC CURVES (Red)

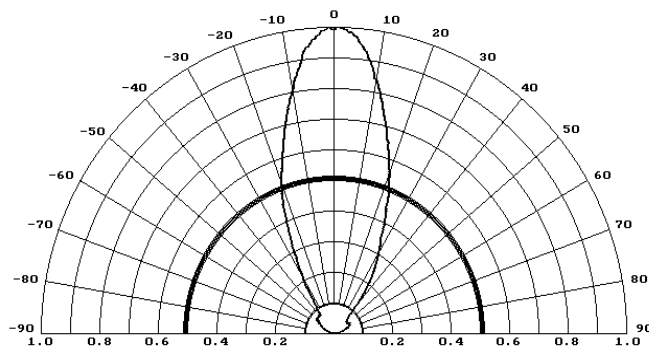
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics



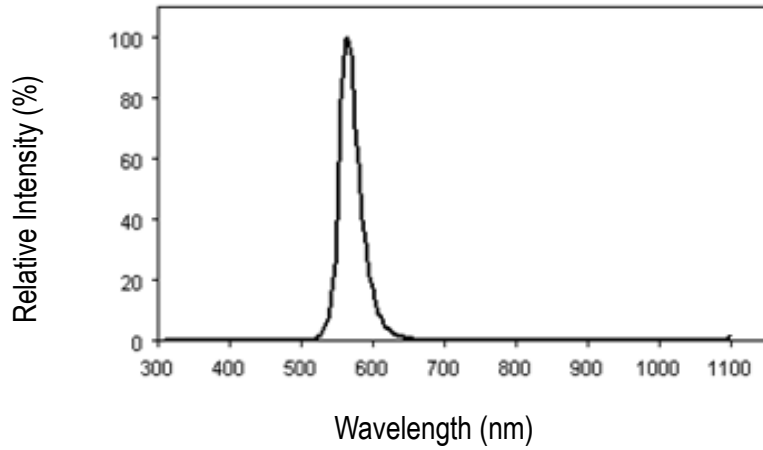
SURFACE MOUNT LED LAMPS

Part NO.: N0D31S37

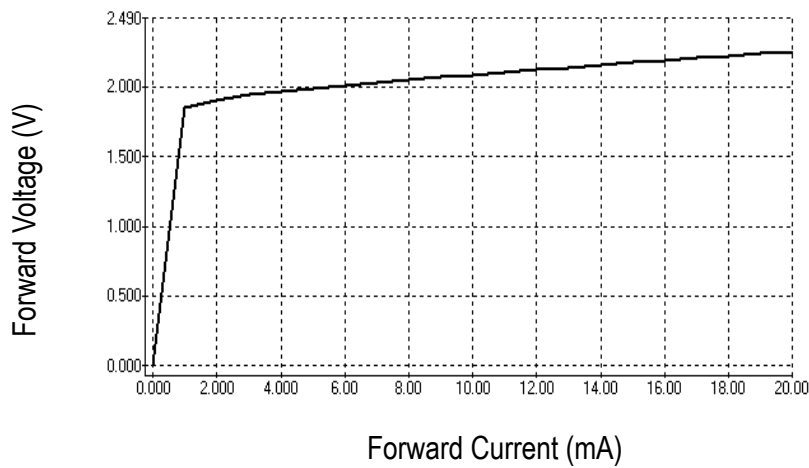
Code NO.:

OPTICAL CHARACTERISTIC CURVES (Green)

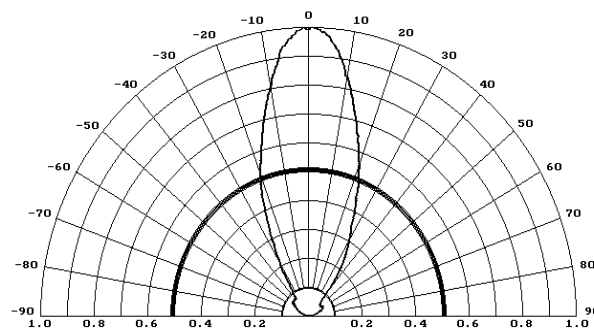
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



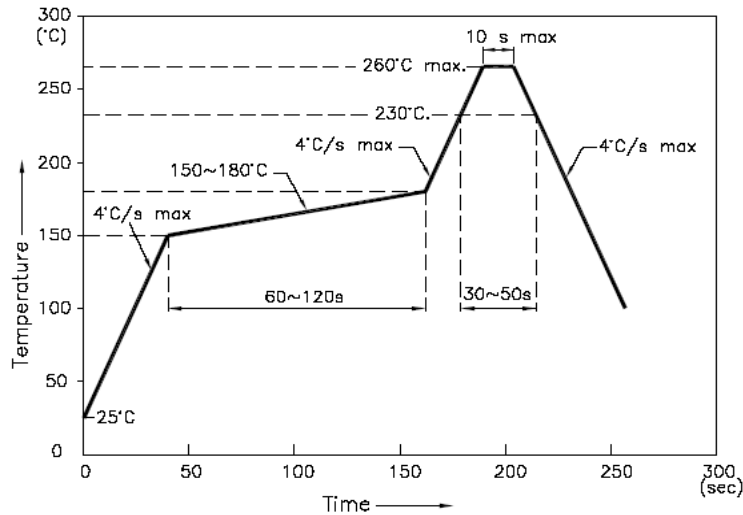
Directive Characteristics



SURFACE MOUNT LED LAMPS

Reflow Profile

■ Reflow Temp/Time



NOTES:

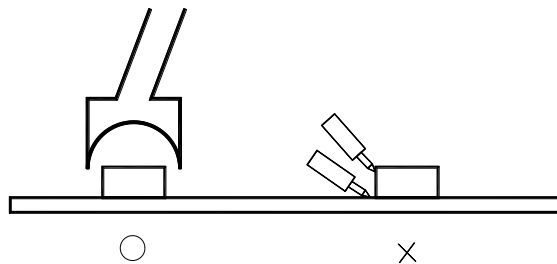
1. We recommend the reflow temperature $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$. the maximum soldering temperature should be limited to 260°C .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■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.

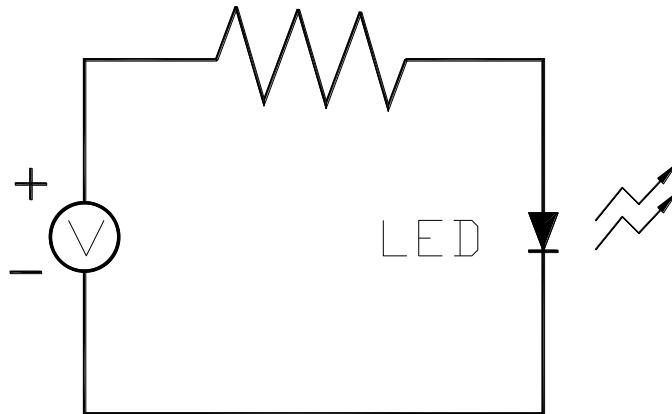


- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

SURFACE MOUNT LED LAMPS

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:

a. $60\pm 5^{\circ}\text{C}$ x (24~48hrs) and < 5%RH, taped reel type ;

b. $110\pm 5^{\circ}\text{C}$ x (8~16hr), bulk type ;

3.2. The products should be used within a week and to be stored at $\leq 20\%$ R.H. with zip-lock sealed:

a. Baking is required before soldering when the pack is unsealed after 24hrs ;

b. Baking condition as 2.1 baking condition.

SURFACE MOUNT LED LAMPS

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