

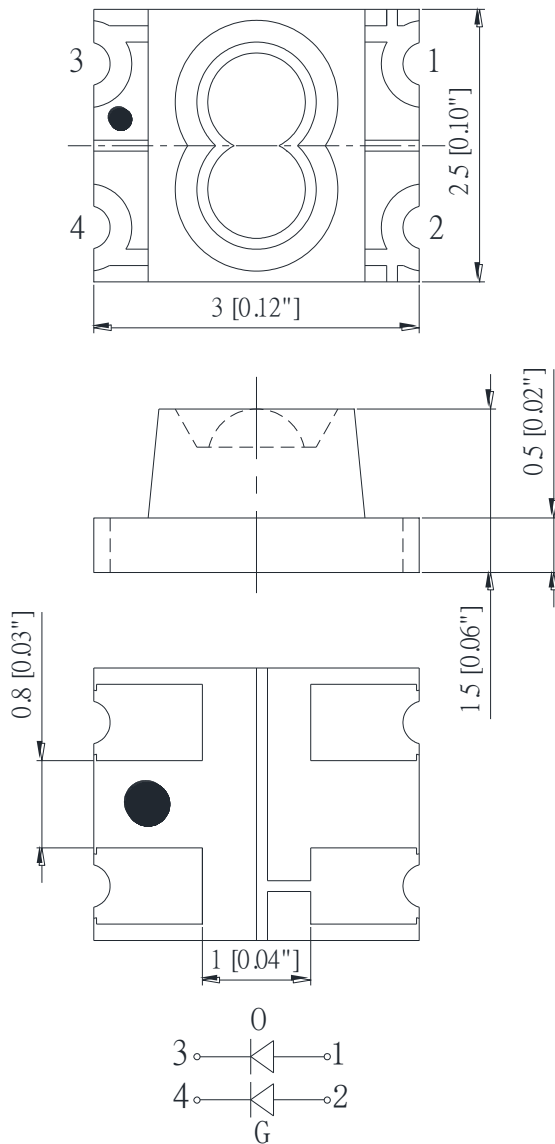
SURFACE MOUNT LED LAMPS

Chip LED Lamps

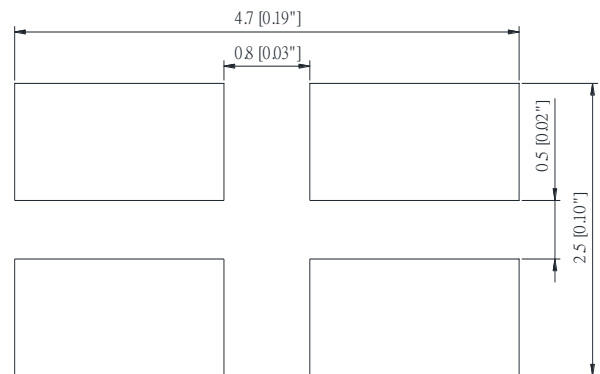
Part NO.:

Code NO.: N0D40S61

Package outlines



RECOMMEND PAD LAYOUT





ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

ITEM	MATERIALS	
Resin (mold)	Epoxy	
Lens color	Water transparent	
Dice	Orange	AlGaInP/GaAs
	Green	InGaN

NOTES:

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

Rev :	Date	Drawn by :	Checked by :	Approved by :
A	2017/06/14			

SURFACE MOUNT LED LAMPS

Part NO.:

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Absolute maximum ratings

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

Parameter	Symbol	Value		Unit
		O	G	
Power dissipation	Pd	75	111	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}	--	632	--	nm
			--	515	--	
Spectral half bandwidth	If=20mA	$\Delta\lambda$	--	19	--	nm
			--	33	--	
Dominant wavelength	If=20mA	λ_{dom}	615	623	630	nm
			515	522	525	
Forward voltage	If=20mA	Vf	1.7	2.1	2.5	V
			2.8	3.1	3.7	
Luminous intensity	If=20mA	Iv	500	970	1600	mcd
			2000	3870	6800	
Viewing angle at 50% Iv	If=10mA	$2\theta_{1/2}$	--	40	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

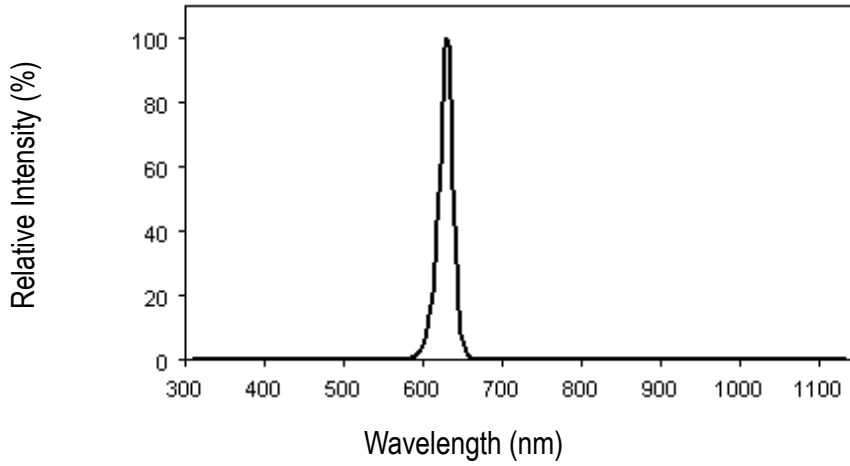
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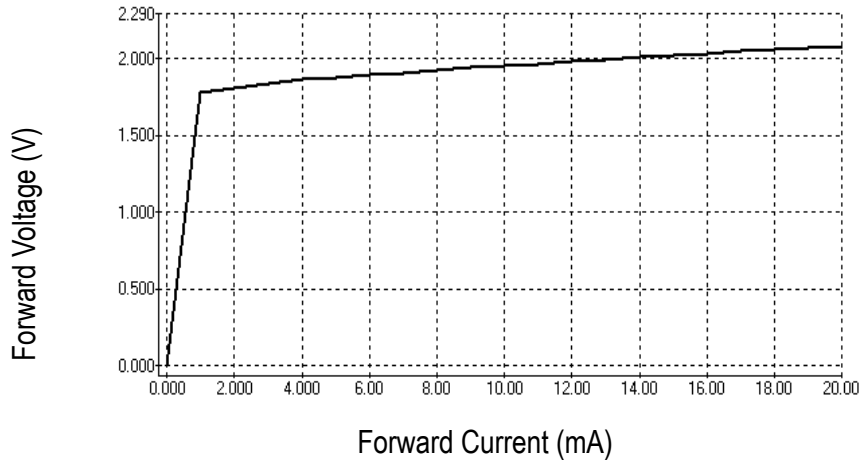
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OPTICAL CHARACTERISTIC CURVES (Orange)

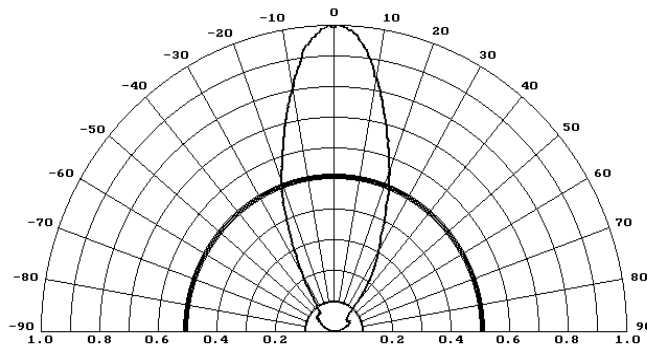
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics



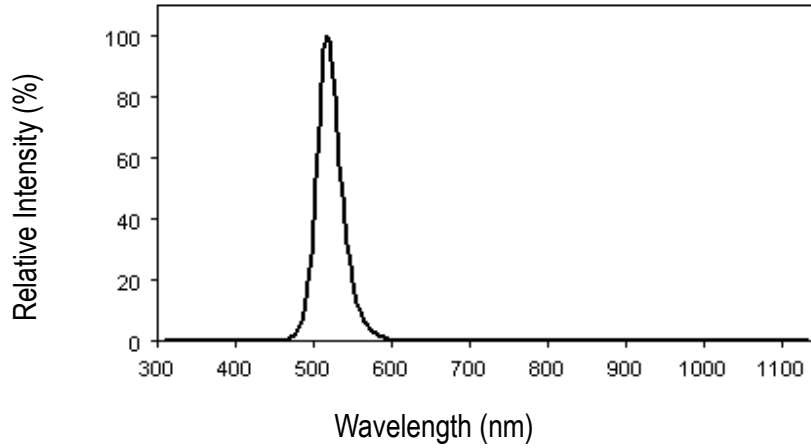
SURFACE MOUNT LED LAMPS

Part NO.:

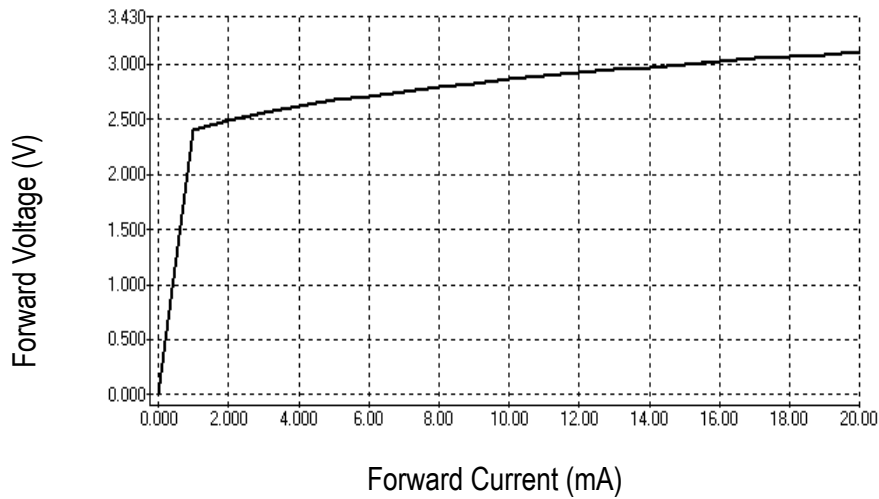
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OPTICAL CHARACTERISTIC CURVES (Green)

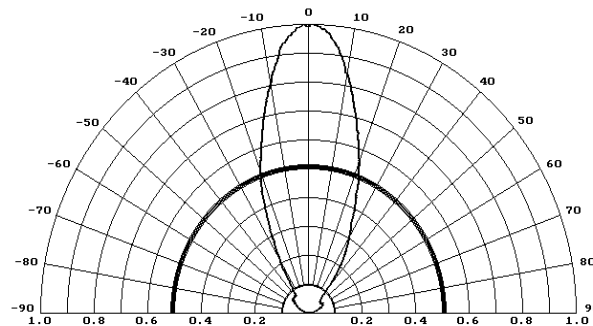
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



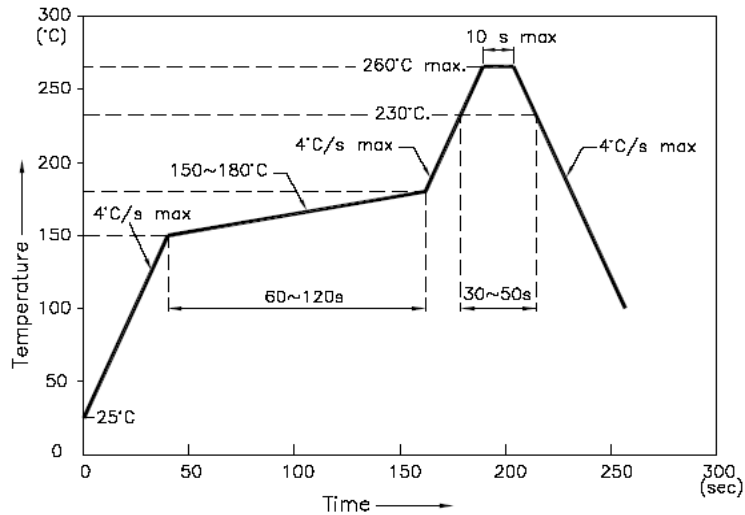
Directive Characteristics



SURFACE MOUNT LED LAMPS

Reflow Profile

■ Reflow Temp/Time



NOTES:

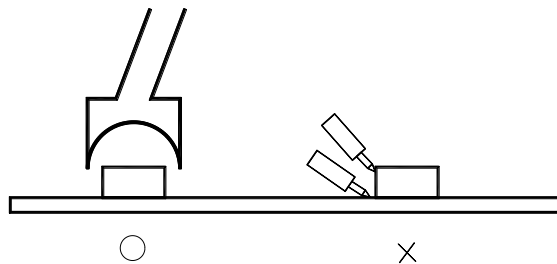
1. We recommend the reflow temperature 245°C ($\pm 5^\circ\text{C}$). the maximum soldering temperature should be limited to 260°C.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°C. If temperature is higher, time should be shorter (+10°C \rightarrow -1sec). 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.

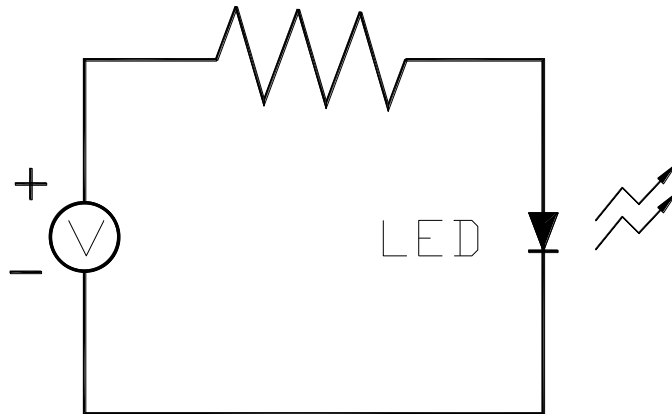


- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

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 3.1 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