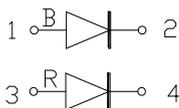
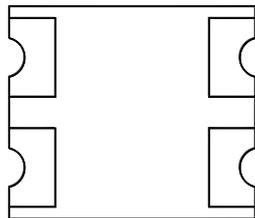
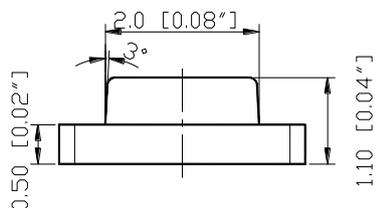
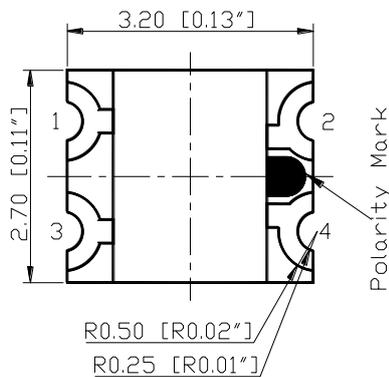


# SURFACE MOUNT LED LAMPS

## S155 Series SMD Chip LED Lamps

Part Number : N0D17S94

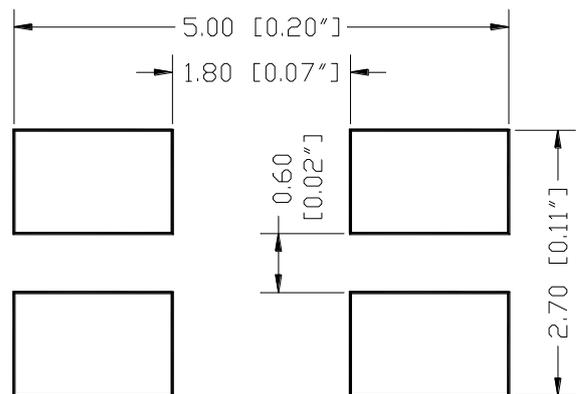
### Package outlines





**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
SENSITIVE DEVICES

### RECOMMEND PAD LAYOUT



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

#### 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	2013/09/12	唐明芮	許媚鳳	黃靜文

# SURFACE MOUNT LED LAMPS

Part Number : N0D17S94

## Absolute maximum ratings (T<sub>A</sub>=25°C)

Parameter	Symbol	Value		Unit
		R	B	
Power dissipation	Pd	75	111	mW
Forward current	I <sub>f</sub>	30		mA
Reverse voltage	V <sub>r</sub>	5		V
Operating temperature range	T <sub>op</sub>	-40 ~+80		°C
Storage temperature range	T <sub>stg</sub>	-40 ~+85		°C
Peak pulsing current (1/8 duty f=1kHz)	I <sub>fp</sub>	125		mA

## Electro-optical characteristics (T<sub>A</sub>=25°C)

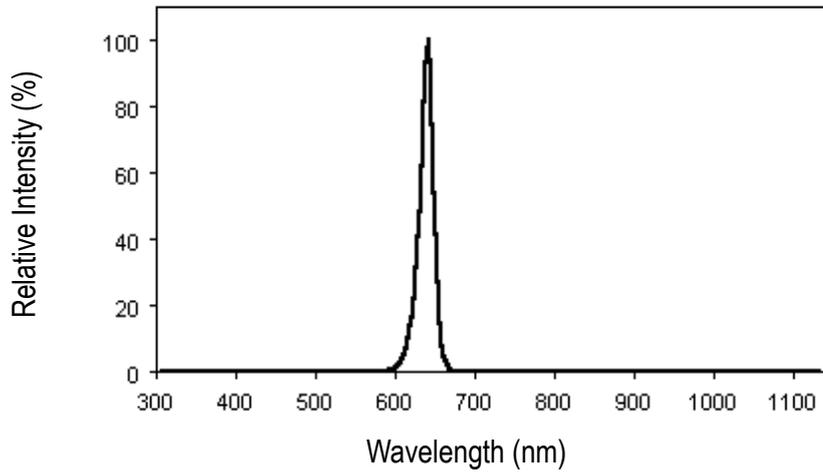
Parameter	Test Condition	Symbol	Value			Unit	
			Min	Typ	Max		
Wavelength at peak emission	I <sub>f</sub> =20mA	λ <sub>peak</sub>	R	--	640	--	nm
			B	--	465	--	
Spectral half bandwidth	I <sub>f</sub> =20mA	Δλ	R	--	18	--	nm
			B	--	28	--	
Dominant wavelength	I <sub>f</sub> =20mA	λ <sub>dom</sub>	R	625	630	635	nm
			B	465	470	475	
Forward voltage	I <sub>f</sub> =20mA	V <sub>f</sub>	R	1.7	2.0	2.5	V
			B	2.8	3.3	3.7	
Luminous intensity	I <sub>f</sub> =20mA	I <sub>v</sub>	R	50	110	160	mcd
			B	50	95	160	
Viewing angle at 50% I <sub>v</sub>	I <sub>f</sub> =10mA	2θ <sub>1/2</sub>	--	140	--	Deg	
Reverse current	V <sub>r</sub> =5V	I <sub>r</sub>	--	--	10	μA	

# SURFACE MOUNT LED LAMPS

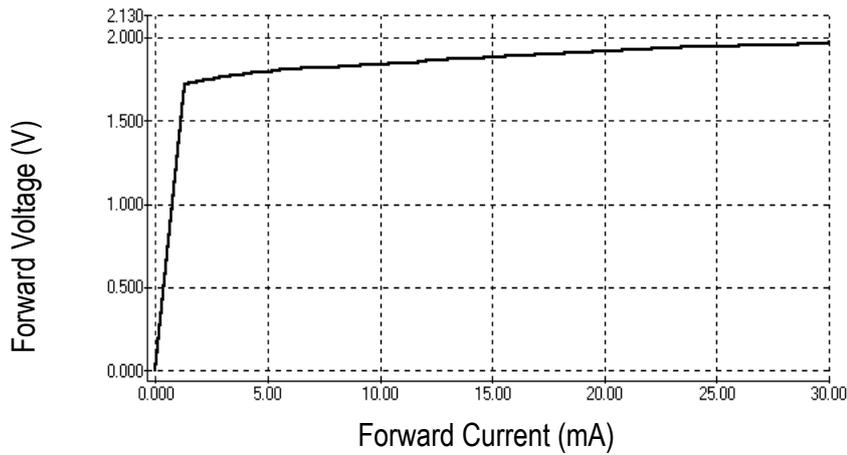
Part Number : N0D17S94

## OPTICAL CHARACTERISTIC CURVES (Red)

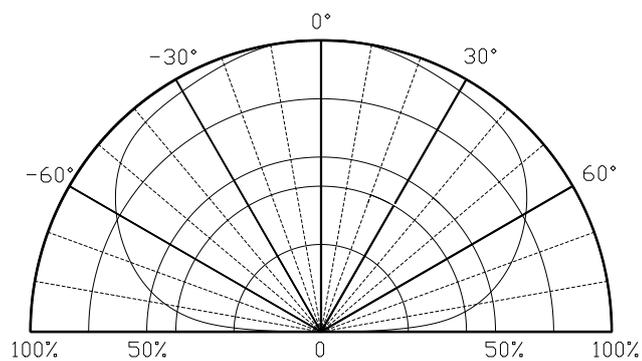
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics

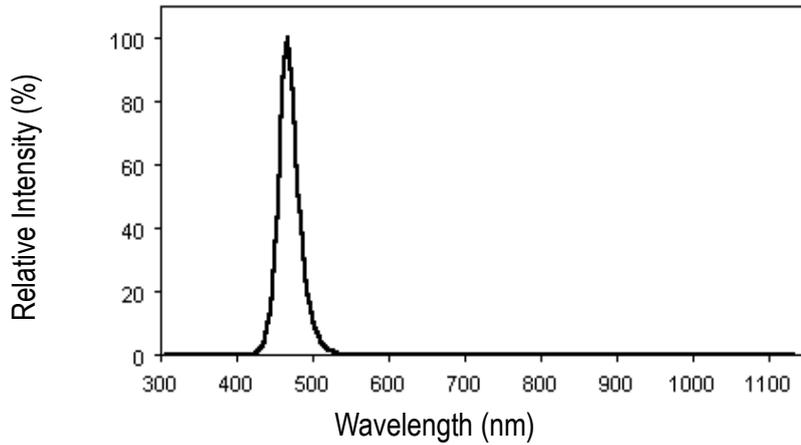


# SURFACE MOUNT LED LAMPS

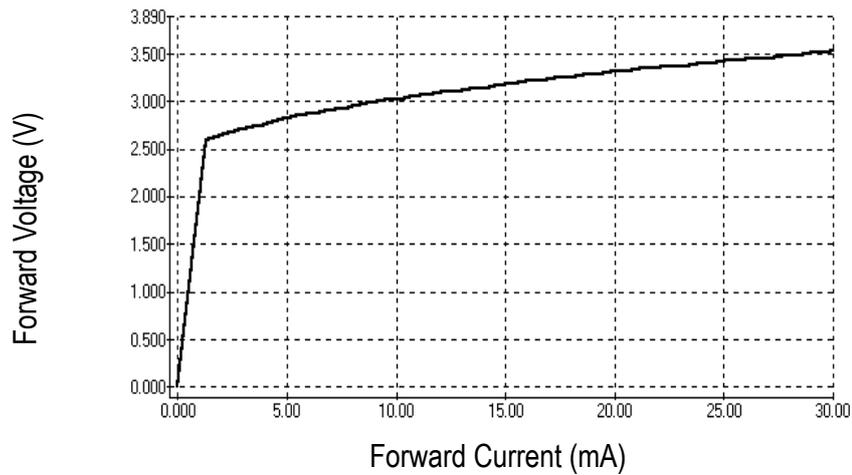
Part Number : N0D17S94

## OPTICAL CHARACTERISTIC CURVES (Blue)

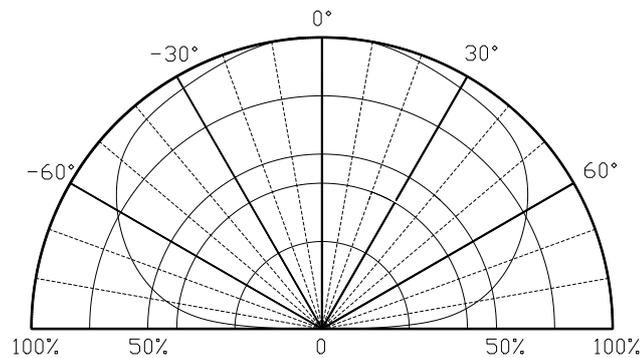
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



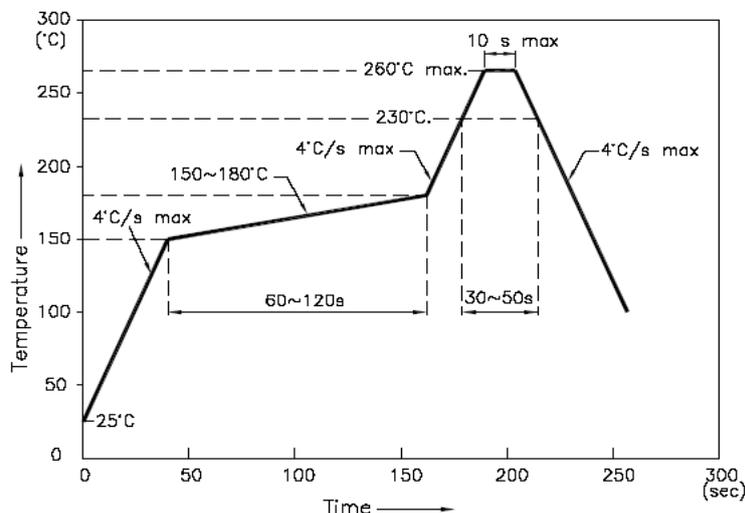
Directive Characteristics



# SURFACE MOUNT LED LAMPS

## Reflow Profile

### ■ Reflow Temp/Time



### NOTES:

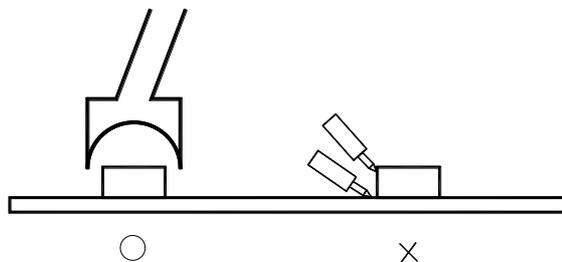
1. We recommend the reflow temperature 245°C ( $\pm 5^\circ\text{C}$ ). the maximum soldering temperature should be limited to 260°C.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

### ■ 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.

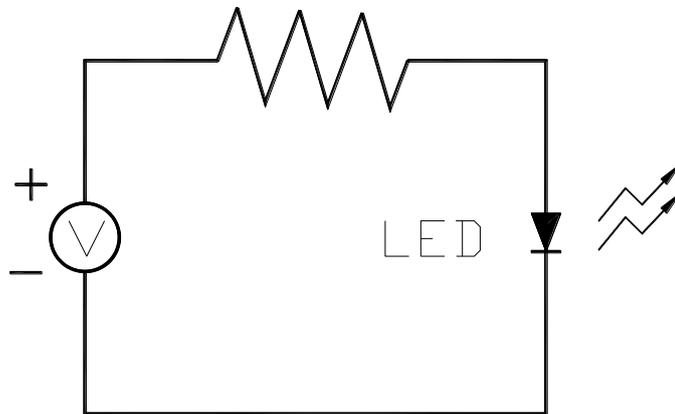


- ### ■ Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow 、 solder etc.

# 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.  $60 \pm 3^\circ\text{C}$  x (36~48hrs) and < 5%RH, taped reel type ;

b.  $110 \pm 3^\circ\text{C}$  x (8~16hr), bulk type ;

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

a. It is recommended to baking before soldering when the pack is unsealed after 72hrs ;

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 <sub>a</sub> =80°C	1000 hrs	0/22
	Humidity Heat Storage	T <sub>a</sub> =60°C RH=90%	1000 hrs	0/22
	Low Temperature Storage	T <sub>a</sub> =-30°C	1000 hrs	0/22
Operation Sequence	Life Test	T <sub>a</sub> =25°C I <sub>F</sub> =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I <sub>F</sub> =10mA	500 hrs	0/22
	Low Temperature Life Test	T <sub>a</sub> =-20°C I <sub>F</sub> =20mA	1000 hrs	0/22





# SURFACE MOUNT LED LAMPS

Part Number: N0D17S94

## Forward Voltage Rank Combination (IF=20mA)

Rank Code		Min.	Max.	Unit
Red	□	1.7	2.5	V
Blue	f	2.8	3.1	
	g	3.1	3.4	
	h	3.4	3.7	

## Luminous Intensity Rank Combination (IF=20mA)

Rank Code		Min.	Max.	Unit
Red	G	50	63	mcd
	H	63	80	
	I	80	100	
	J	100	125	
	K	125	160	
Blue	G	50	63	
	H	63	80	
	I	80	100	
	J	100	125	
	K	125	160	

# SURFACE MOUNT LED LAMPS

Part Number: N0D17S94

## Dominant wavelength Rank Combination (IF=20mA)

Rank Code		Min.	Max.	Unit
Red	u	625	630	nm
	v	630	635	
Blue	G	465	467.5	
	H	467.5	470	
	I	470	472.5	
	J	472.5	475	

## Group Name on Label ( Example DATA: Jv gll 20 )

DATA: <input type="checkbox"/> Jv Red	gll 20 Blue	Vf(V)	Iv (mcd)	$\lambda_d$ (nm)	Test Condition
Red	<input type="checkbox"/> → J → v → 20	1.7~2.5	100~125	630~635	IF=20mA
Blue	g → l → l → 20	3.1~3.4	80~100	470~472.5	

\* NOTE:

1. The tolerance of luminous intensity (Iv) is  $\pm 15\%$ .
2. The tolerance of dominant wavelength is  $\pm 1\text{nm}$ .
3. This specification is preliminary.