

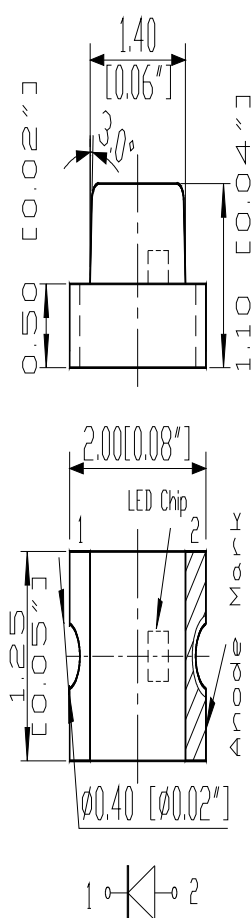
# SURFACE MOUNT LED LAMPS

## 表面黏著型發光二極體指示燈

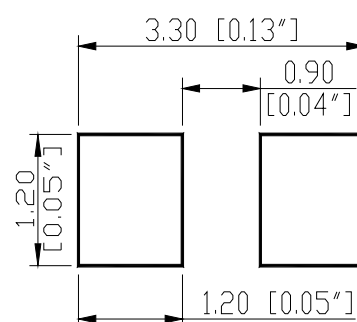
### S170 Series SMD Chip LED Lamps

Part Number: 170UR

### Package outlines



### RECOMMEND PAD LAYOUT



ITEM	MATERIALS
Resin (mold)	Epoxy
Bonding wire	↓ 25 $\mu$ m Au
Lens color	Water transparent
Printed circuit board	BT (White)
Dice	AlGaInP
Emitted color	Red

#### NOTES:

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

# SURFACE MOUNT LED LAMPS

## 表面黏著型發光二極體指示燈

**Part Number: 170UR**

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

Parameter	Symbol	Value	Unit
Forward current	I <sub>f</sub>	30	mA
Reverse voltage	V <sub>r</sub>	5	V
Power dissipation	P <sub>d</sub>	69	mW
Operating temperature range	T <sub>op</sub>	-20 ~+80	°C
Storage temperature range	T <sub>stg</sub>	-20 ~+80	°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>		635		nm
Spectral half bandwidth	I <sub>f</sub> =20mA	Δλ	--	25	--	nm
Dominant wavelength	I <sub>f</sub> =20mA	λ <sub>dom</sub>		632		nm
Forward voltage	I <sub>f</sub> =20mA	V <sub>f</sub>	1.8	2.2	2.6	V
Luminous intensity * 1	I <sub>f</sub> =20mA	I <sub>v</sub>	15	45	--	mcd
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

\* 1 Note: Luminous intensity tolerances are ±10%.

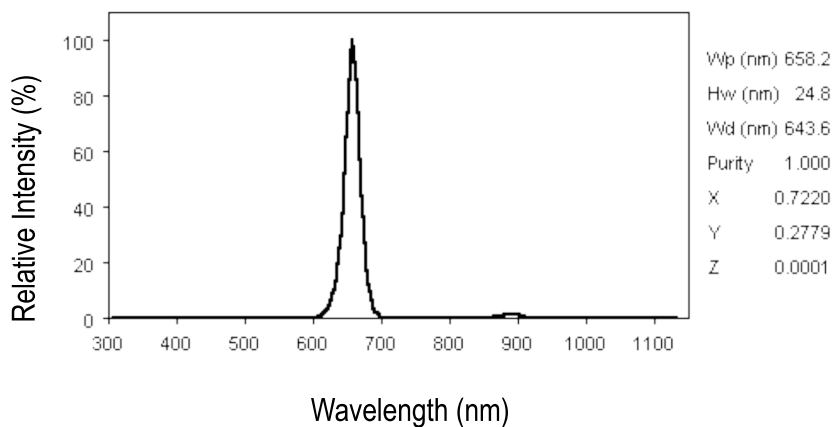
# SURFACE MOUNT LED LAMPS

## 表面黏著型發光二極體指示燈

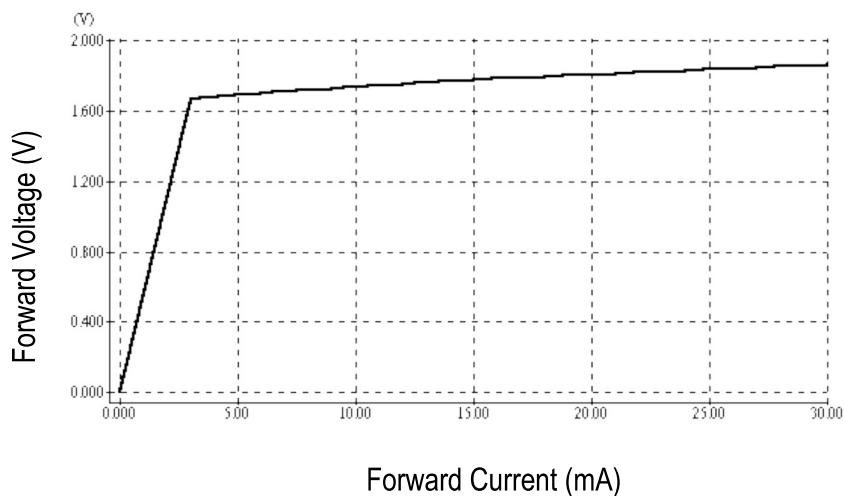
Part Number: 170UR

### OPTICAL CHARACTERISTIC CURVES

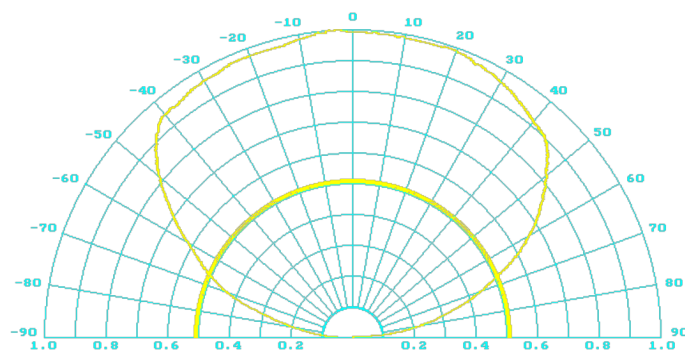
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics

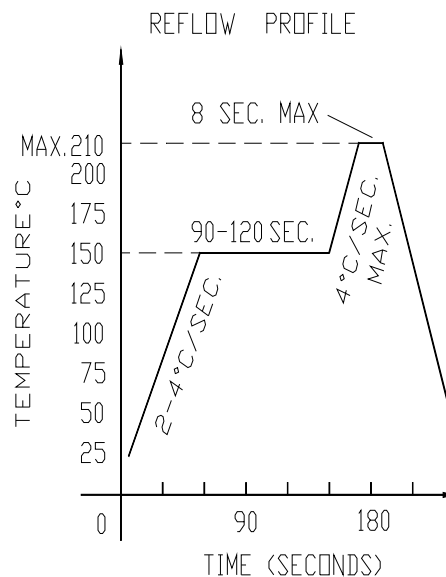


# SURFACE MOUNT LED LAMPS

## 表面黏著型發光二極體指示燈

### Reflow Profile

#### ■ Reflow Temp/Time

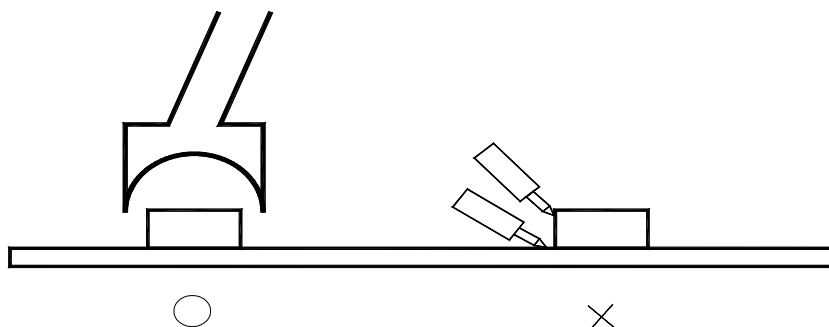


#### ■ Soldering iron

Basic spec is  $\leq 5\text{sec}$  when  $260^\circ\text{C}$ . If temperature is higher, time should be shorter ( $+10^\circ\text{C} \rightarrow -1\text{sec}$ ). Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. Surface temperature of the device should be under  $230^\circ\text{C}$ .

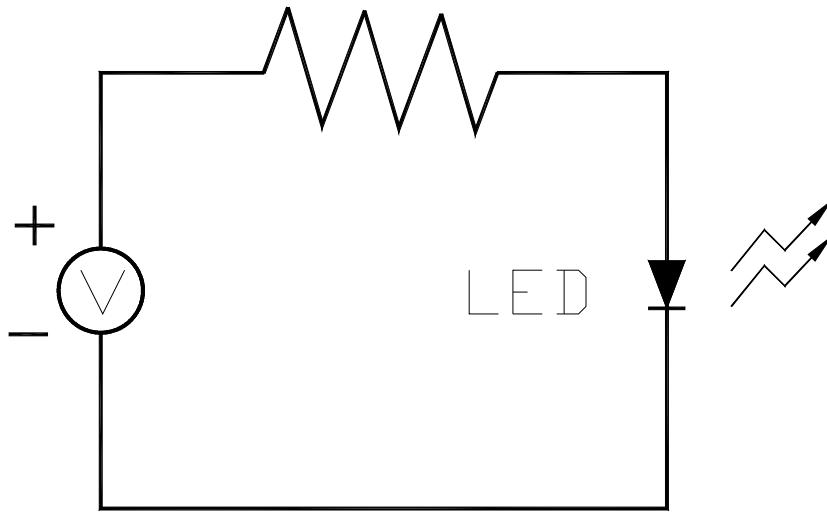
#### ■ Rework

1. Customer must finish rework within 5 sec under  $260^\circ\text{C}$ .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.





## TEST CIRCUIT



### ■Precautions For use

Over-current-proof

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

## SURFACE MOUNT LED LAMPS

## Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
------	-----------	-----------------	------	-------------------

Sequential Environmental	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
Se@peration	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> =20mA	500 hrs	0/22
	Low Temperature Life Test	T <sub>a</sub> =-20°C I <sub>F</sub> =20mA	1000 hrs	0/22

\* Refer to reliability test standard specification for in this line.