

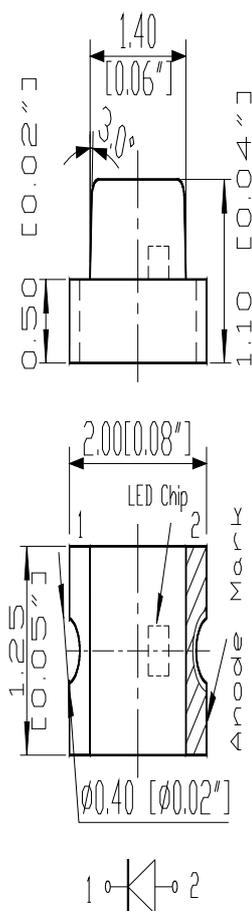
SURFACE MOUNT LED LAMPS

表面黏著型發光二極體指示燈

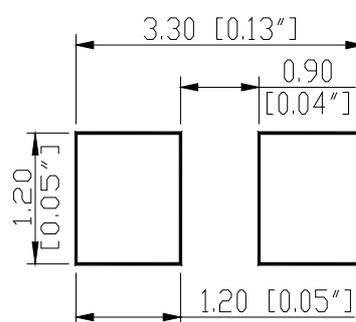
S170 Series SMD Chip LED Lamps

Part Number: 170UR

Package outlines



RECOMMEND PAD LAYOUT



ITEM	MATERIALS
Resin (mold)	Epoxy
Bonding wire	↓ 25 μm 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 ±0.1mm (0.004inch) unless otherwise noted.

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Part Number: 170UR

Absolute maximum ratings (T_A=25°C)

Parameter	Symbol	Value	Unit
Forward current	I _f	30	mA
Reverse voltage	V _r	5	V
Power dissipation	P _d	69	mW
Operating temperature range	T _{op}	-20 ~+80	°C
Storage temperature range	T _{stg}	-20 ~+80	°C
Peak pulsing current (1/8 duty f=1kHz)	I _{fp}	125	mA

Electro-optical characteristics (T_A=25°C)

Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	I _f =20mA	λ _{peak}		635		nm
Spectral half bandwidth	I _f =20mA	Δλ	--	25	--	nm
Dominant wavelength	I _f =20mA	λ _{dom}		632		nm
Forward voltage	I _f =20mA	V _f	1.8	2.2	2.6	V
Luminous intensity * 1	I _f =20mA	I _v	15	45	--	mcd
Viewing angle at 50% I _v	I _f =10mA	2θ _{1/2}	--	140	--	Deg
Reverse current	V _r =5V	I _r	--	--	10	μA

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

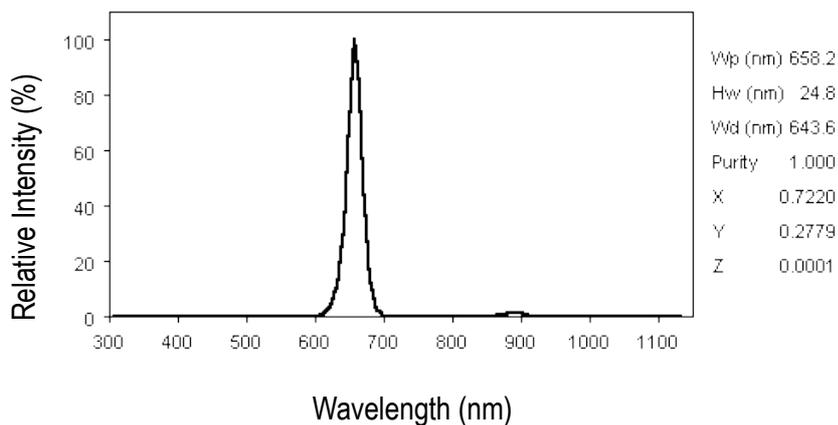
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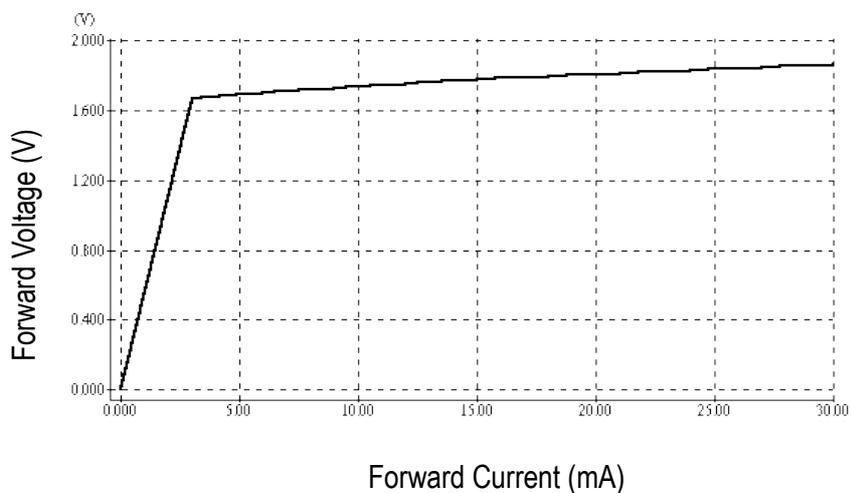
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OPTICAL CHARACTERISTIC CURVES

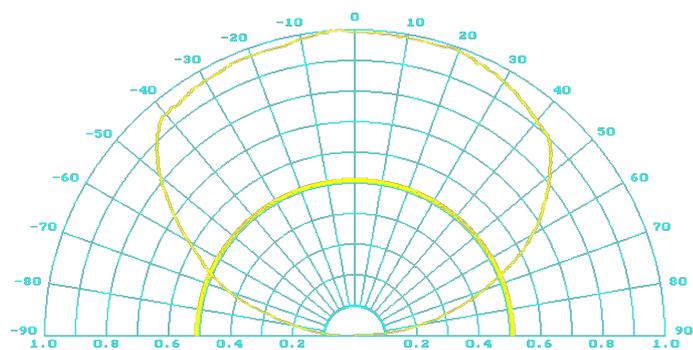
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics

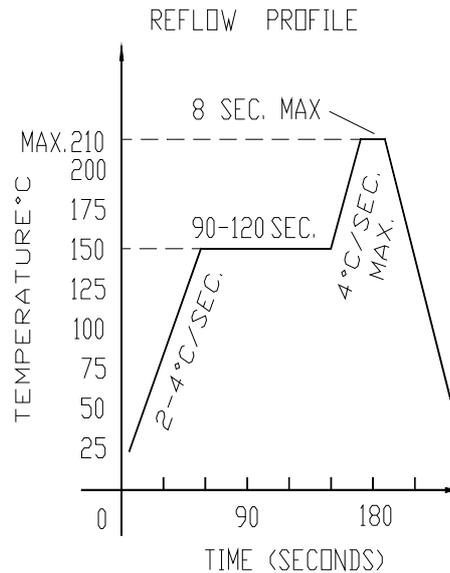


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Reflow Profile

■ Reflow Temp/Time

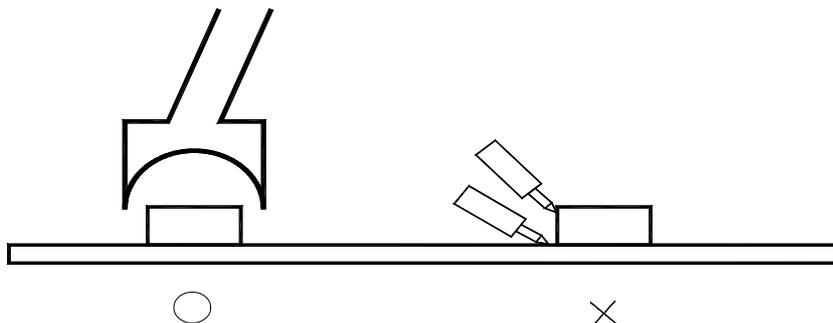


■ Soldering iron

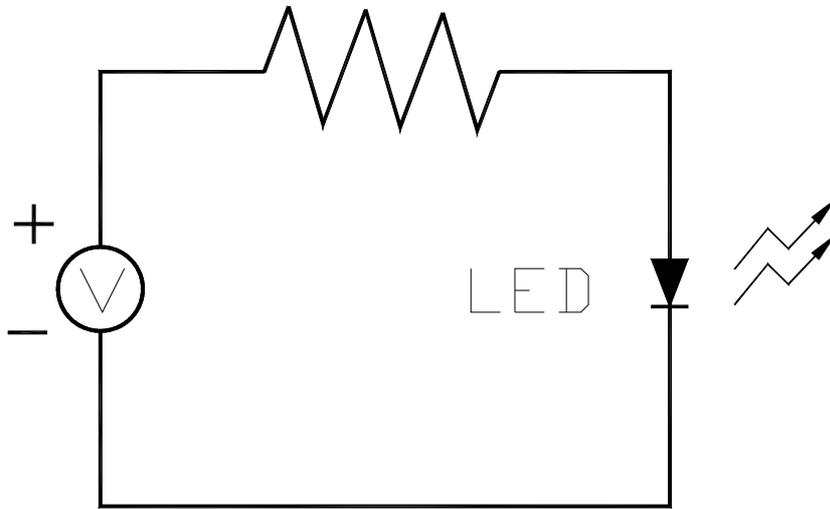
Basic spec is $\leq 5\text{sec}$ when 260°C . If temperature is higher, time should be shorter ($+10^\circ\text{C} \rightarrow -1\text{sec}$). Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

■ 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.



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).

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Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
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Sequ en ce 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 _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
Se@peration	Life Test	T _a =25°C I _F =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60°C RH=90% I _F =20mA	500 hrs	0/22
	Low Temperature Life Test	T _a =-20°C I _F =20mA	1000 hrs	0/22

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