

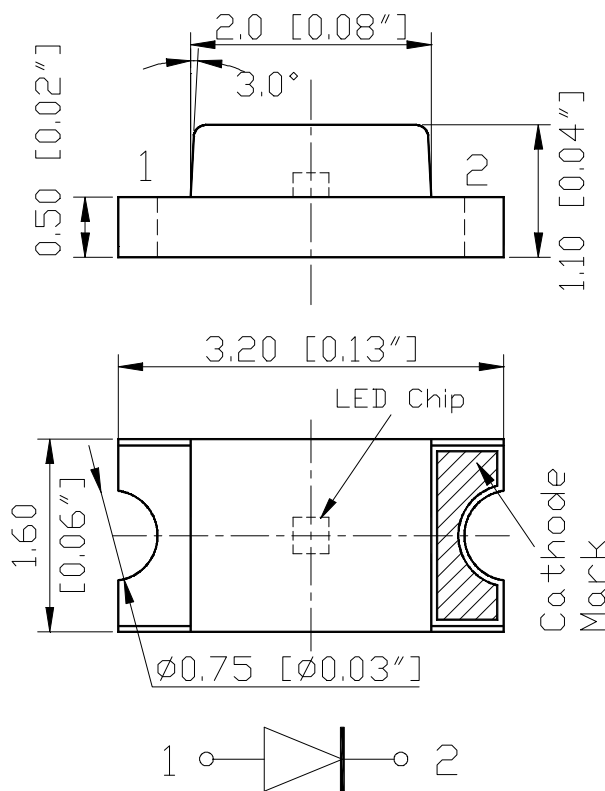
SURFACE MOUNT LED LAMPS

表面黏著型發光二極體指示燈

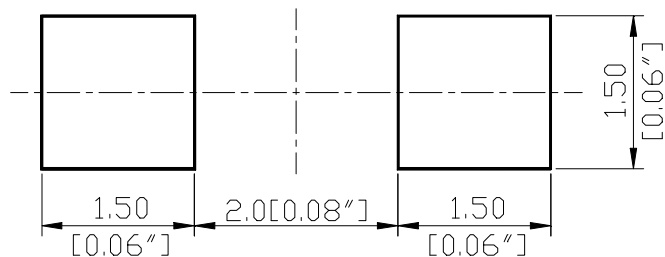
S150 Series SMD Chip LED Lamps

Part Number: S150WVS4

Package outlines



RECOMMEND PAD LAYOUT





ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

ITEM	MATERIALS
Resin (mold)	Epoxy
Bonding Wire	Ø 25 µm Au
Lens color	Yellow
Printed circuit board	BT (white)
Dice	GaInN
Emitted color	White

- NOTES:
1. All dimensions are in millimeters (inches);
 2. Tolerances are ±0.1mm (0.004inch) unless otherwise noted.

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Part Number: S150WVS4

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	120	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	
CIE Coordinates	I _f =20mA	X Y	0.22 0.22	0.28 0.31	0.36 0.38	--
Forward voltage	I _f =20mA	V _f	--	3.5	4.0	V
Luminous intensity * 1	I _f =20mA	I _v		600		mcd
Viewing angle at 50% I _v	I _f =10mA	2 θ 1/2	--	140	--	Deg
Reverse current	V _r =5V	I _r	--	--	10	μA

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

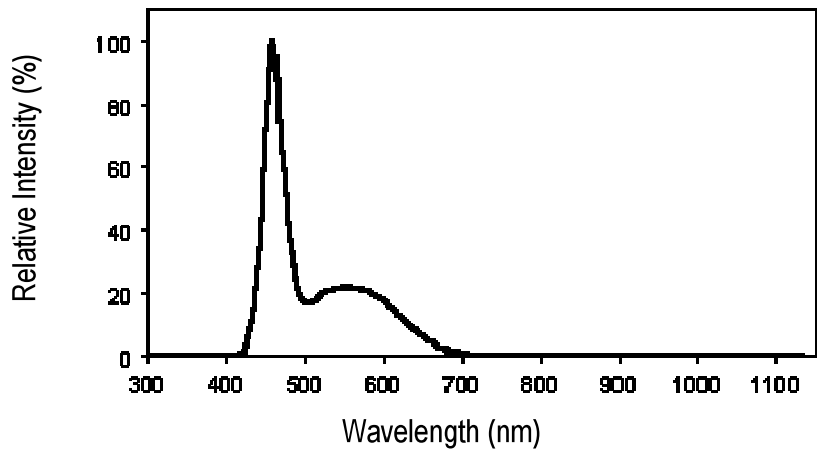
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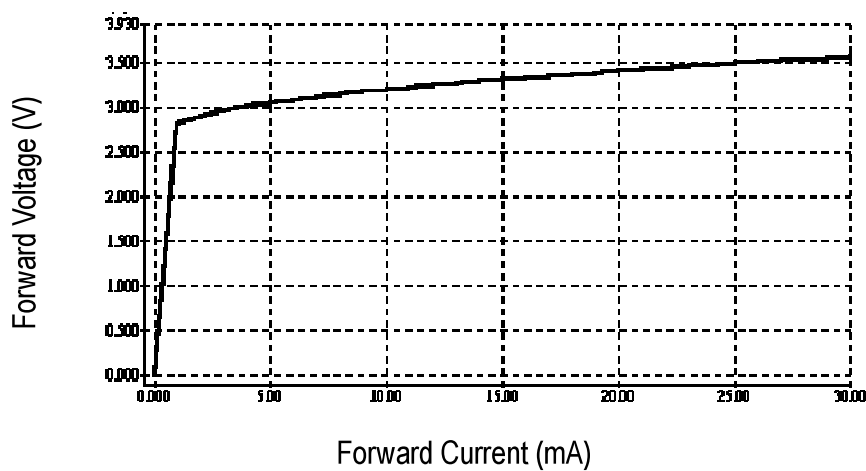
Part Number: S150WVS4

OPTICAL CHARACTERISTIC CURVES

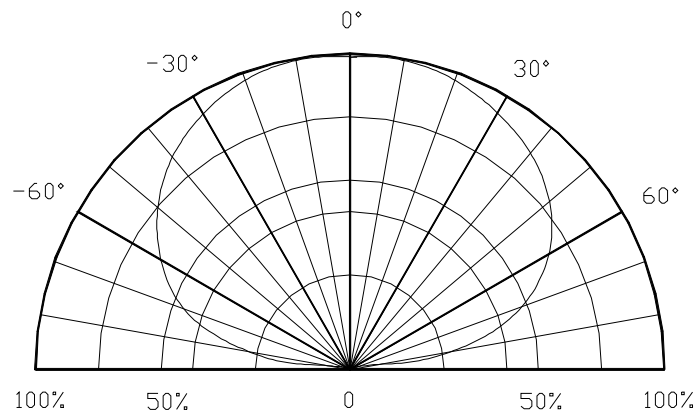
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics

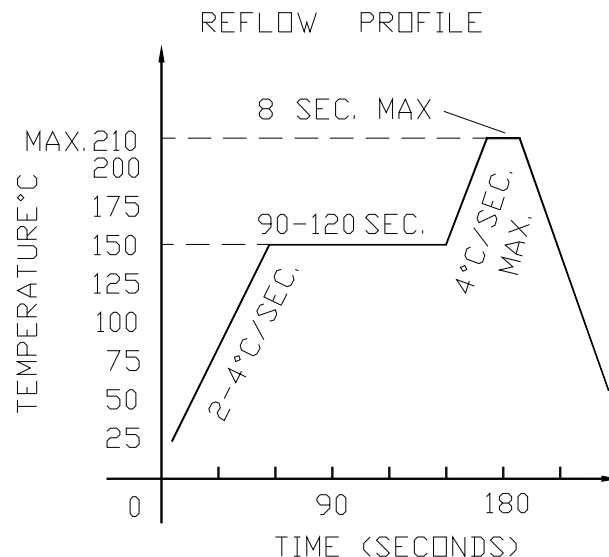


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Reflow Profile

■ Reflow Temp/Time

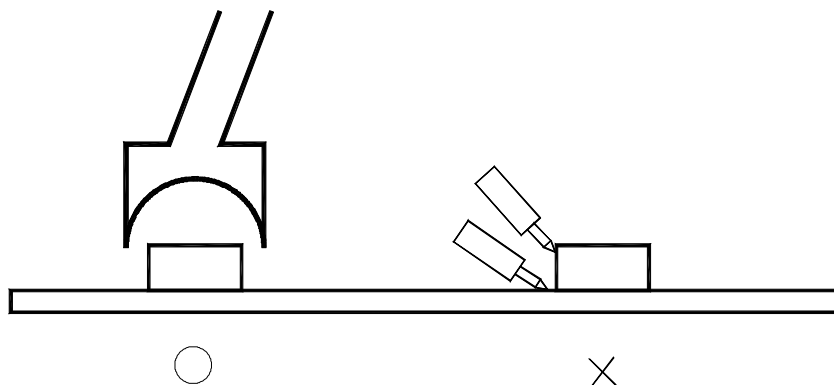


■ Soldering iron

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.

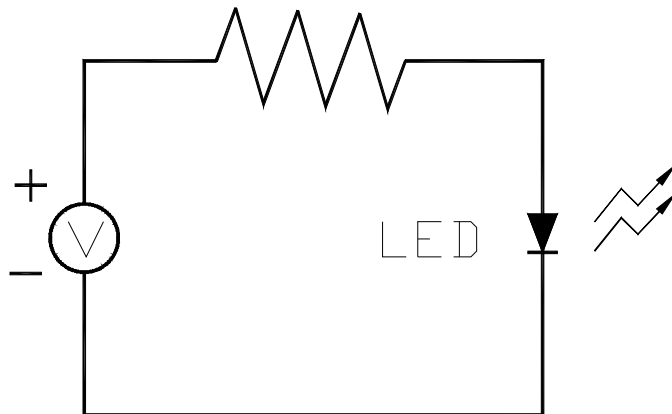


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Test circuit and handling precautions

■ 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.Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : $5^{\circ}\text{C} \sim 30^{\circ}\text{C}$ ($41^{\circ}\text{F} \sim 86^{\circ}\text{F}$)

2.2 Shelf life in sealed bag: 12 month at $< 5^{\circ}\text{C} \sim 30^{\circ}\text{C}$ and $< 30\%$ R.H. after the package is Opened, the products should be used within a week or they should be keeping to stored at ≤ 20 R.H. with zip-lock sealed.

3.Baking

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1 $60 \pm 3^{\circ}\text{C}$ x(12~24hrs) and $< 5\%$ RH, taped reel type

3.2 $100 \pm 3^{\circ}\text{C}$ x(45min~1hr), bulk type

3.3 $130 \pm 3^{\circ}\text{C}$ x(15~30min), bulk type

When you discover that the desiccant in the package has a pink color (normal=blue), you Should treat them in the same conditions as (3.1~3.3)

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Test items and results of reliability

Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-20℃ 30min ↑ ↓ 80℃ 30min	100 cycle	0/22
	Thermal Shock	-20℃ 15min ↑ ↓ 80℃ 15min	100 cycle	0/22
	High Humidity Heat Cycle	30℃ ↔ 65℃ 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T _a =80℃	1000 hrs	0/22
	Humidity Heat Storage	T _a =60℃ RH=90%	1000 hrs	0/22
	Low Temperature Storage	T _a =-30℃	1000 hrs	0/22
Operation Sequence	Life Test	T _a =25℃ I _F =20mA	1000 hrs	0/22
	High Humidity Heat Life Test	60℃ RH=90% I _F =20mA	500 hrs	0/22
	Low Temperature Life Test	T _a =-20℃ I _F =20mA	1000 hrs	0/22

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