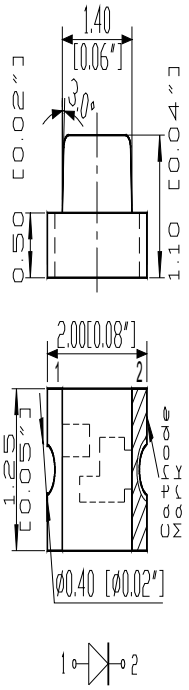
SURFACE MOUNT LED LAMPS

表面黏著型發光二極體指示燈

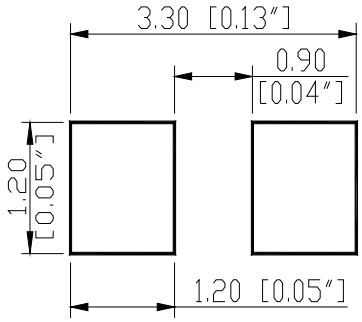
S170 Series SMD Chip LED Lamps

Part Number: S170ANB4-C

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	GaInN
Emitted color	Blue

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

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

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Absolute maximum ratings (T_A=25℃)

Parameter	Symbol	Value	Unit
Forward current	If	30	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	118	mW
Operating temperature range	Top	-20 ~+80	℃
Storage temperature range	Tstg	-20 ~+80	℃
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125	mA

Electro-optical characteristics (T_A=25℃)

Parameter	Test Condition	Symbol	Value	Unit
Wavelength at peak emission (Typ.)	If=20mA	λpeak	460	nm
Spectral half bandwidth (Typ.)	If=20mA	△λ	37	nm
Dominant wavelength (Typ.)	If=20mA	λdom	470	nm
Viewing angle at 50% Iv (Typ.)	If=10mA	2θ1/2	140	Deg
Reverse current (Max.)	Vr=5V	Ir	10	μA
Forward voltage (Typ.)	If=20mA	Vf	3.60	V
Forward voltage (Max.)			4.20	
CIE Coordinates X (Typ.)	If=20mA	--	0.1441	--
CIE Coordinates Y (Typ.)			0.0768	
Luminous intensity (Min.)	If=20mA	Iv	55	mcd

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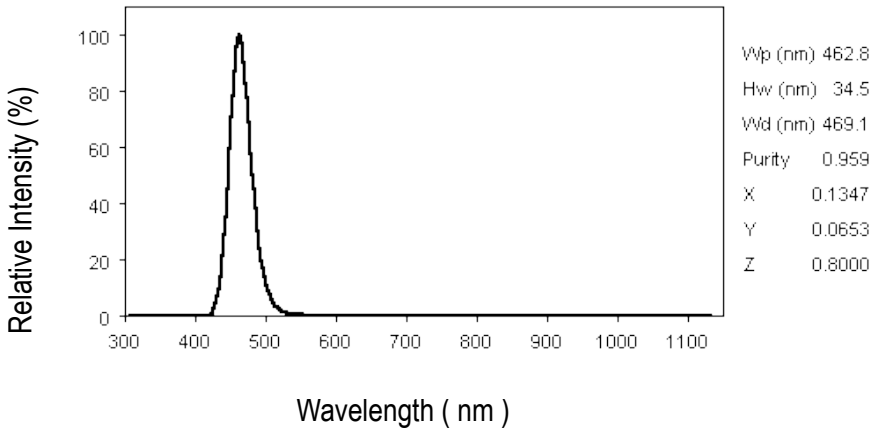
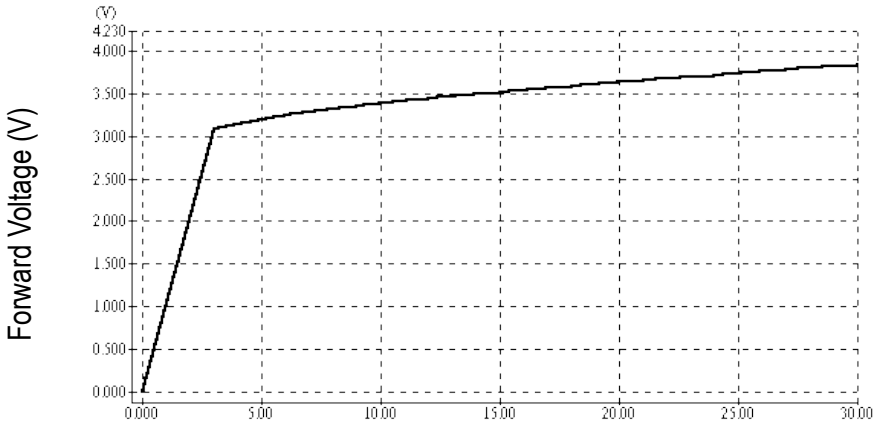
OPTICAL CHARACTERISTIC CURVES

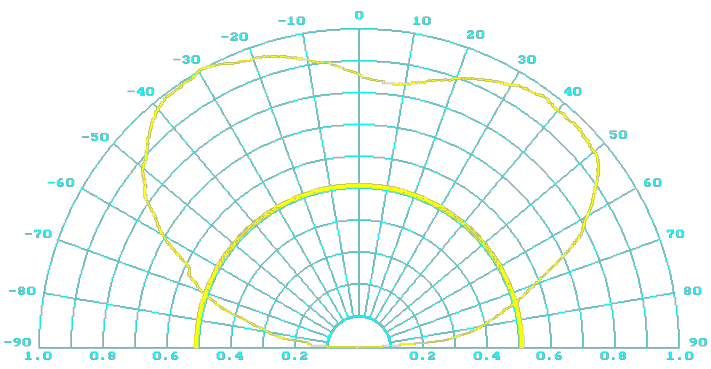
Relative Intensity vs. Wavelength



Forward Current vs. Forward Voltage



Directive Characteristics



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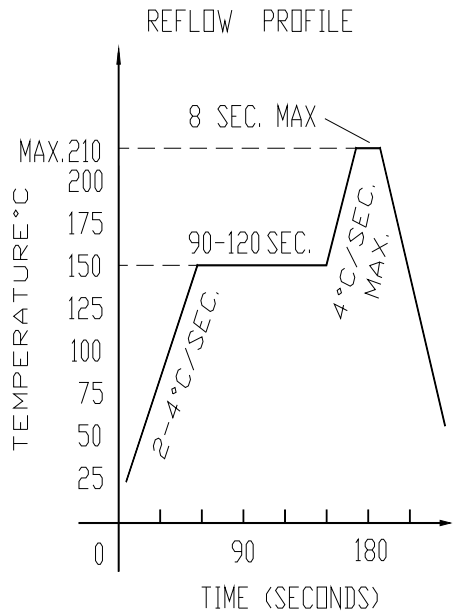
Reflow Profile

■ Reflow Temp/Time

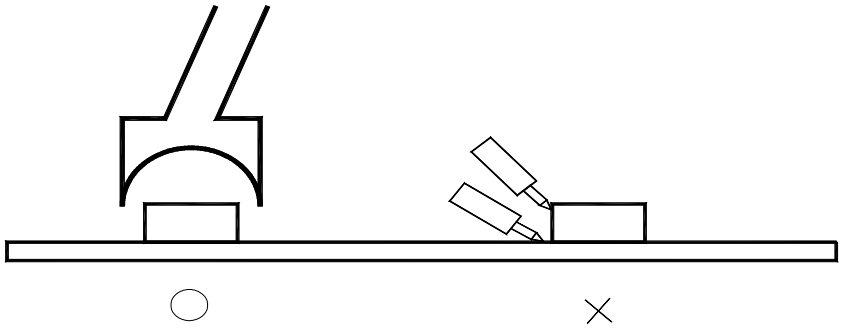


■Soldering iron

Basic spec is ≤ 5sec when 260℃. If temperature is higher, time should be shorter (+10℃→ -1sec).Power dissipation of iron should be smaller than 15W, and temperatures should be controllable .Surface temperature of the device should be under 230℃ .

■Rework

1. Customer must finish rework within 5 sec under 260℃.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



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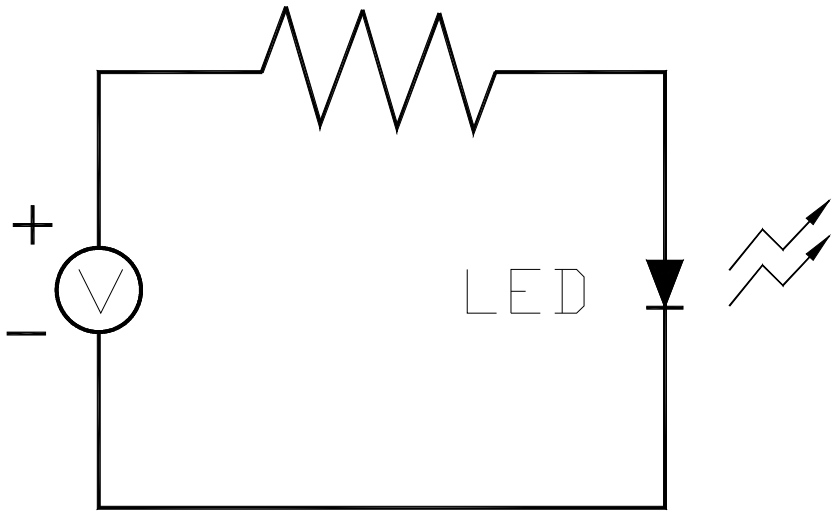
TEST CIRCUIT



■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	REF. Standard	Test Conditions	Note	Number of Damaged
Sequence Environmental	Temperature Cycle	JIS C 7021 (1977)A-4	-20℃ 30min ↑↓5min 80℃ 30min	100 cycle	0/100
	Thermal Shock	MIL-STD-107D	-20℃ 15min ↑↓ 80℃ 15min	100 cycle	0/100

	High Humidity Heat Cycle	JIS C 7021 (1977)A-5	30℃⇔ 65℃ 90%RH 24hrs/1cycle	10 cycle	0/100
	High Temperature Storage	JIS C 7021 (1977)B-10	T_a=80℃	1000 hrs	0/100
	Humidity Heat Storage	JIS C 7021 (1977)B-11	T_a=60℃ RH=90%	1000 hrs	0/100
	Low Temperature Storage	JIS C 7021 (1977)B-12	T_a=-30℃	1000 hrs	0/100
Sequence Operation	Life Test	JIS C 7035 (1985)	T_a=25℃ I_F=20mA	1000 hrs	0/100
	High Humidity Heat Life Test	*	60℃ RH=90% I_F=20mA	500 hrs	0/100
	Low Temperature Life Test	*	T_a=-20℃ I_F=20mA	1000 hrs	0/100

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