APPROVAL SHEET

Part No: CBL0603A-ZRN-020mA

NOTE :

Green Part

MAKER			CUSTOMER	
SOLIDLITE				
R&D	QA	Sales	Checked	Approved

Prepared	Checked	Approved
Rachel Lee	Sky Lin	Kenneth Wu

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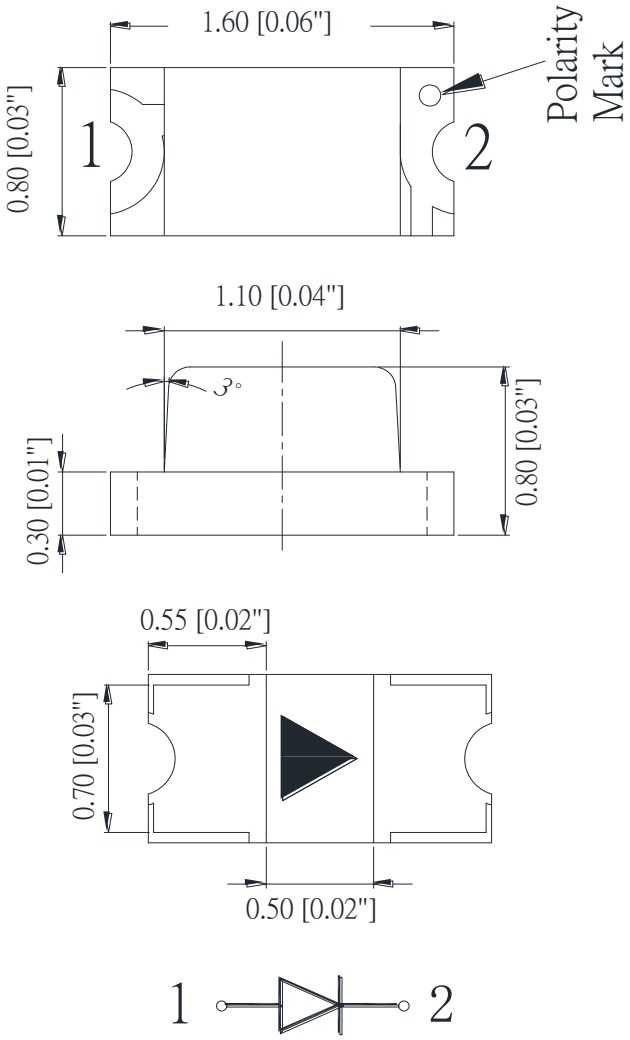
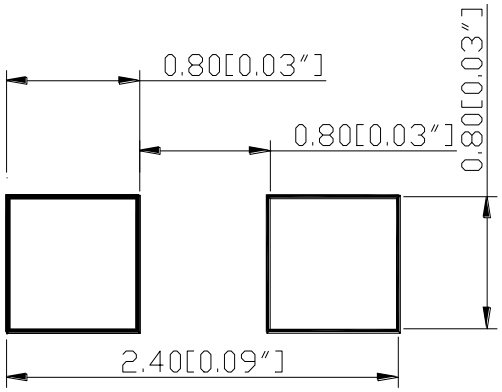
Package outlines



RECOMMEND PAD LAYOUT



ATTENTION

OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

ITEM	MATERIALS
Resin (mold)	Epoxy
Lens color	Water transparent
Dice	AlGaInP/GaAs
Emitted color	Orange

NOTES:

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

Absolute maximum ratings (T_A=25℃)

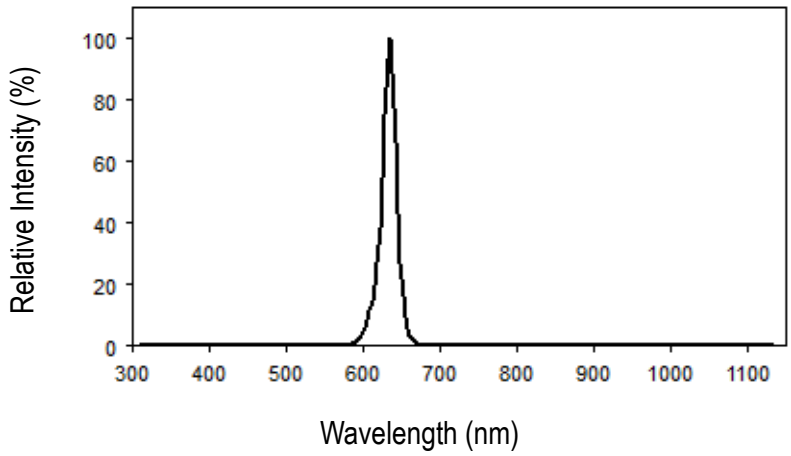
Parameter	Symbol	Value	Unit
Forward current	If	30	mA
Reverse voltage	Vr	5	V
Power dissipation	Pd	75	mW
Operating temperature range	Top	-40 ~+80	℃
Storage temperature range	Tstg	-40 ~+85	℃
Peak pulsing current (1/8 duty f=1kHz)	Ifp	125	mA

Electro-optical characteristics (TA=25℃)

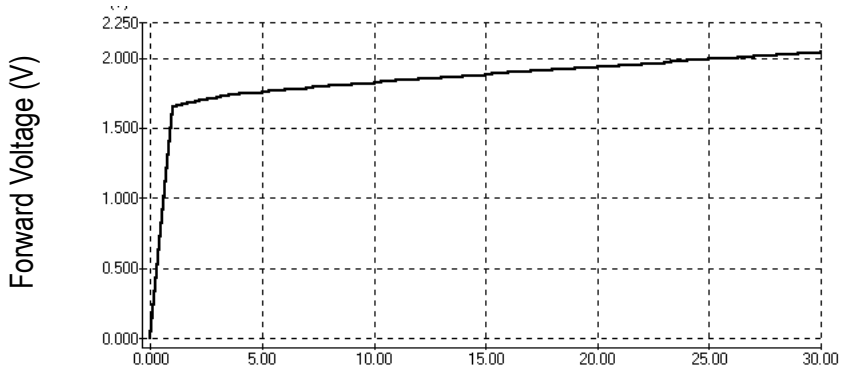
Parameter	Test Condition	Symbol	Value			Unit
			Min	Typ	Max	
Wavelength at peak emission	If=20mA	λ peak	--	635	--	nm
Spectral half bandwidth	If=20mA	△ λ	--	20	--	nm
Dominant wavelength	If=20mA	λ dom	615	624	630	nm
Forward voltage	If=20mA	Vf	1.7	2.0	2.5	V
Luminous intensity	If=20mA	Iv	25	50	80	mcd
Viewing angle at 50% Iv	If=10mA	2θ 1/2	--	140	--	Deg
Reverse current	Vr=5V	Ir	--	--	10	μA

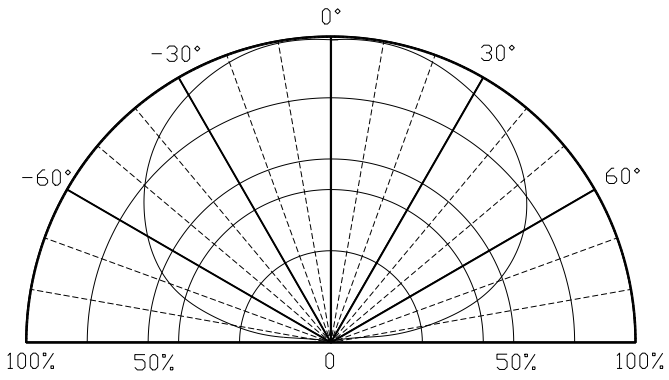
OPTICAL CHARACTERISTIC CURVES

Relative Intensity vs. Wavelength



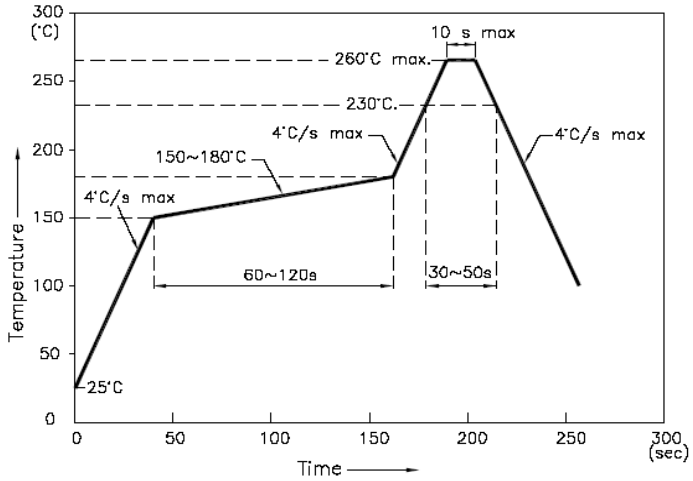
Forward Current vs. Forward Voltage





Reflow Profile

■ Reflow Temp/Time



NOTES:

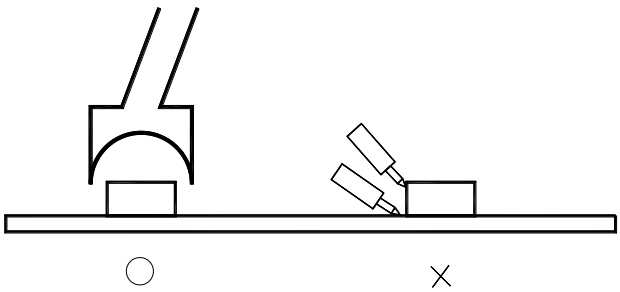
1. We recommend the reflow temperature 245℃(±5℃).the maximum soldering temperature should be limited to 260℃.
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■Soldering iron

Basic spec is ≤ 5sec when 260℃. If temperature is higher, time should be shorter (+10℃→ -1sec).Power dissipation of iron should be smaller than 20W, and temperatures should be controllable .Surface temperature of the device should be under 230℃.

■Rework

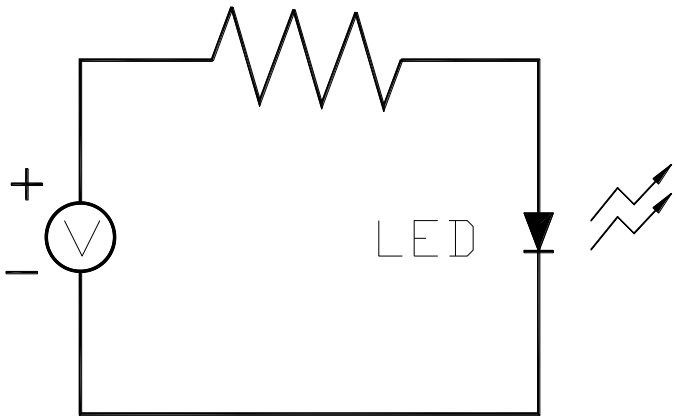
1. Customer must finish rework within 5 sec under 260℃.
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.



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

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℃~30℃ 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±5℃ x (24~48hrs) and ＜5%RH, taped reel type；

b. 110±5℃ x (8~16hr), bulk type；

3.2. The products should be used within a week and to be stored at ≦20% R.H. with zip-lock sealed:

a. Baking is required before soldering when the pack is unsealed after 24hrs；

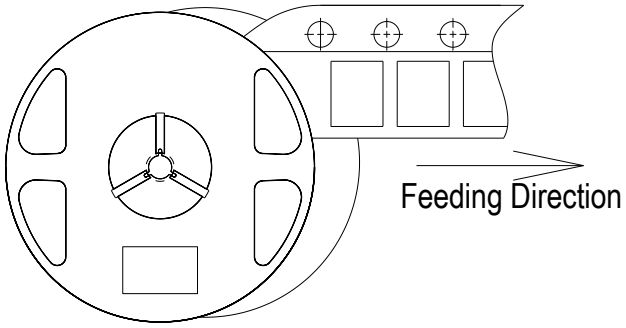
b. Baking condition as 3.1 baking condition.

Test items and results of reliability

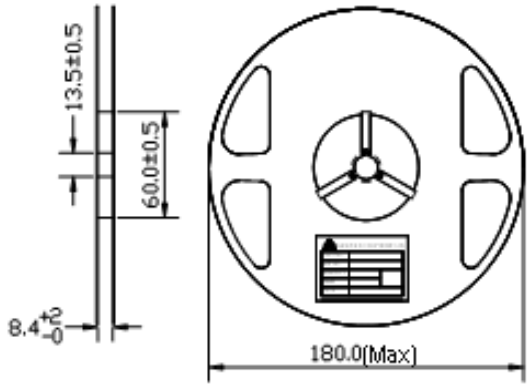
Type	Test Item	Test Conditions	Note	Number of Damaged
Environmental Sequence	Temperature Cycle	-40℃ 30min ↑ ↓ 80℃ 30min	100 cycle	0/22
	Thermal Shock	-40℃ 15min ↑ ↓ 80℃ 15min	100 cycle	0/22
	High Humidity Heat Cycle	30℃⇔65℃ 90%RH 24hrs/1cycle	10 cycle	0/22
	High Temperature Storage	T_a=80℃	1000 hrs	0/22
	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=10mA	500 hrs	0/22
	Low Temperature Life Test	T_a=-40℃ I_F=20mA	1000 hrs	0/22

0603 Series SMD Chip LED Lamps Packaging Specifications

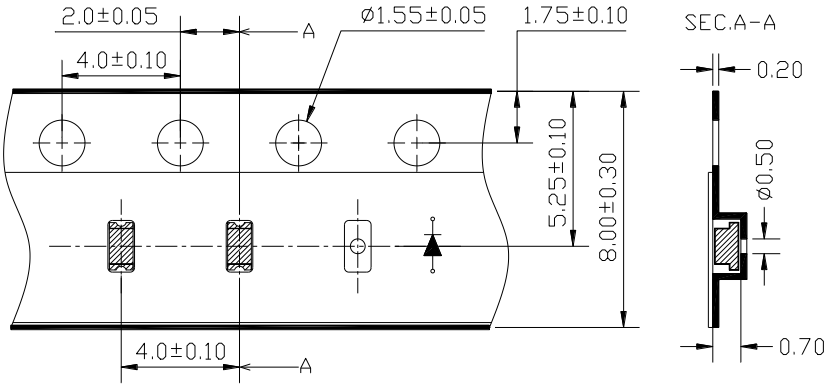
● Feeding Direction



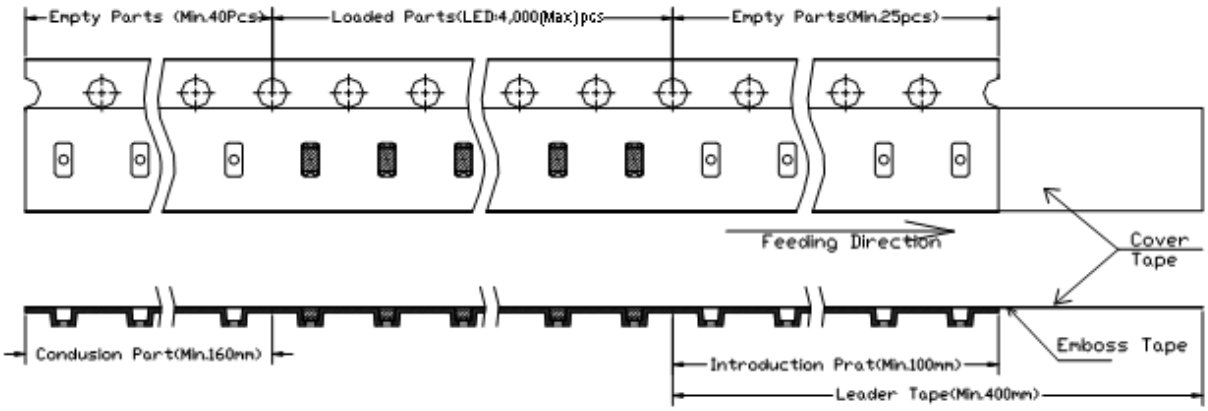
● Dimensions of Reel (Unit: mm)



● Dimensions of Tape (Unit: mm)



● Arrangement of Tape

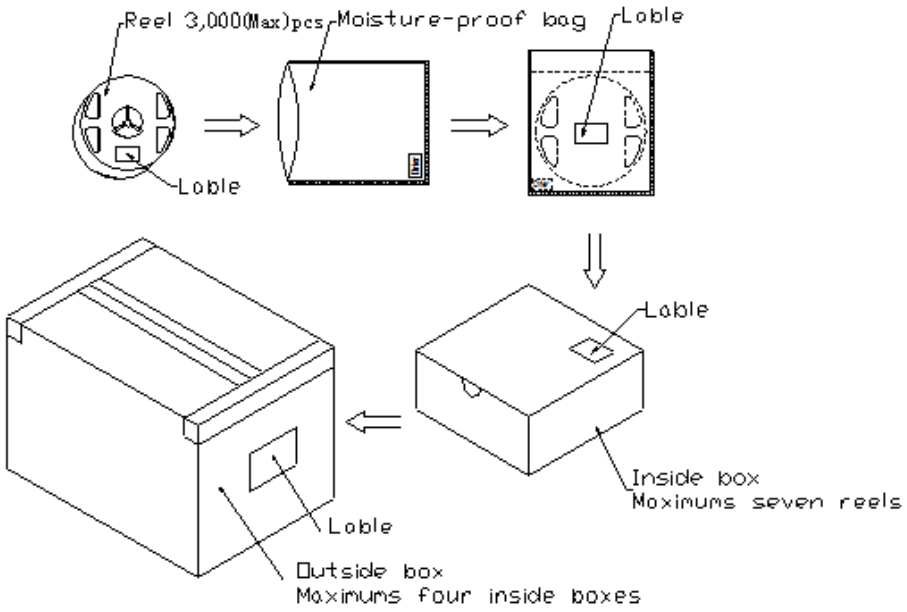


NOTES

1. Empty component pockets are sealed with top cover tape;
2. The maximum number of missing lamps is two;
3. The cathode is oriented towards the tape sprocket hole.
4. 4,000(Max)pcs/Reel.

0603 Series SMD Chip LED Lamps Packaging Specifications

• Packaging specifications



Label

Solidlite Corp.

P/N :_____.

Lot :_____.

Date:_____. Rank:_____.

Q'ty :_____. QA :_____.

NOTES:

Reeled products [numbers of products are 4,000(Max)pcs] packed in a seal off moisture-proof bag along with a desiccant one by one, Seven moisture-proof bag of maximums [total maximum number of products are 28,000(Max)pcs] packed in an inside box (size: about 238mm x about 194mm x about 102mm) and four inside boxes of maximums are put in the outside box (size: about 410mm x about 254mm x about 229mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.

Forward Voltage Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
□	1.7	2.5	V

Luminous Intensity Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
D	25	32	mcd
E	32	40	
F	40	50	
G	50	63	
H	63	80	

Dominant wavelength Rank Combination (IF=20mA)

Rank	Min.	Max.	Unit
s	615	620	nm
t	620	625	
u	625	630	

Group Name on Label (Example DATA: gPV 20)

DATA: gPV 20	Vf(V)	Iv (mcd)	λ d (nm)	Test Condition
□→F→s→20	1.7~2.5	40~50	615~620	IF=20mA

＊ NOTE:

1. The tolerance of luminous intensity (Iv)is ±15% .
2. The tolerance of dominant wavelength is ±1.5nm.
3. This specification is preliminary.