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DATA SHEET

PART NO.: L-S115KRLGCT-20A

REV: A / 0

CUSTOMER'S APPROVAL : _____

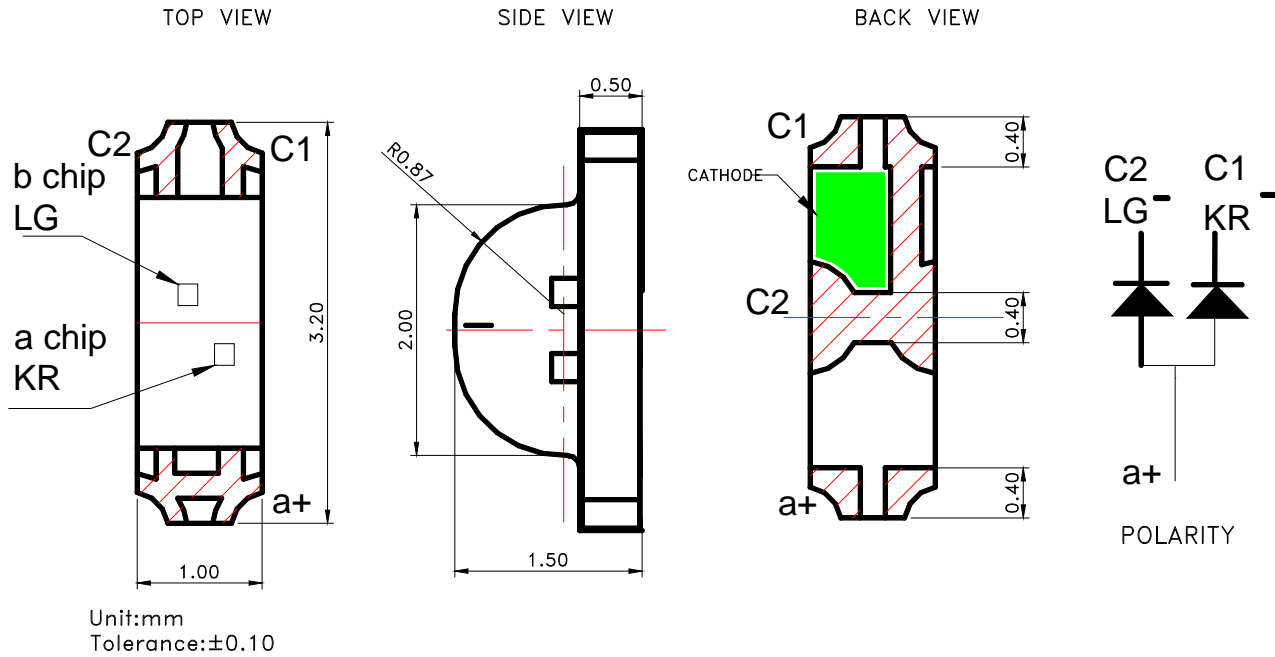
DCC : _____

DRAWING NO. : DS-78-19-0008G

DATE : 2019-7-1

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● PACKAGE OUTLINE DIMENSIONS



Notes:

1. a chip: Super Red; b chip: Super Green.
2. All dimensions are in millimeters.
3. Tolerance is $\pm 0.1\text{mm}$ (.004") unless otherwise noted.

● Features

- * Dual color, common anode, side view Chip LED.
- * Package in 8mm tape on 7" diameter reels.
- * Compatible with automatic Pick & Place equipment.
- * Compatible with Reflow soldering and Wave soldering processes.
- * EIA STD package.
- * I.C. compatible.
- * Pb free product.
- * Meet RoHS Green Product.

● **Chip Materials**

chip	Light Color	Dice Material	Lens Color
a	KR: Super Red	AlInGaP	Water Clear
b	LG: Super Green	InGaN	

● **Absolute Maximum Ratings(Ta=25°C)**

Symbol	Parameter	Rating		Unit
		Super Red	Super Green	
PD	Power Dissipation	75	100	mW
IPF	Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	80	100	mA
IF	Continuous Forward Current	25	25	mA
VR	Reverse Voltage	5	5	V
ESD	Electrostatic Discharge Threshold(HBM) ^{Note A}	2000		V
Topr	Operating Temperature Range	-40 ~ +85		°C
Tstg	Storage Temperature Range	-40 ~ +85		°C

Note A:

HBM: Human Body Model. Seller gives no other assurances regarding the ability of to withstand ESD

● **Electro-Optical Characteristics(Ta=25°C)**

Parameter		Symbol	Super Red	Super Green	Unit	Test Condition
Luminous Intensity	Min.	IV	112	450	mcd	IF=20mA
	Typ.		180	930		
Viewing Angle	Typ.	2θ 1/2	130		deg	Note 2
Peak Wavelength	Typ.	λ p	625	518	nm	Measurement @Peak
Dominant Wavelength	Typ.	λ d	620	525	nm	IF=20mA
Spectral Line Half-Width	Typ.	Δ λ	17	15	nm	
Forward Voltage	Typ.	VF	2.0	2.85	V	IF =20mA
	Max.		2.2	3.25		
Reverse Current	Max.	IR	10	50	μ A	VR = 5V

● **Bin Code List**

Luminous Intensity(IV), Unit:mcd@20mA					
Super Red(a chip)			Super Green(b chip)		
Bin Code	Min	Max	Bin Code	Min	Max
R	112	180	V	710	900
S	180	280	W	900	1120

Tolerance of each bin are $\pm 15\%$

Forward Voltage(VF), Unit:V@20mA		
Green(b chip)		
Bin Code	Min	Max
K7	2.65	2.80
K8	2.80	2.95
K9	2.95	3.10
K10	3.10	3.25

Tolerance of each bin are ± 0.1 Volt

Dominant Wavelength (Hue),Unit: nm@20mA		
Super Green(b chip)		
Bin Code	Min	Max
AP	520.0	525.0
AQ	525.0	530.0

Tolerance of each bin are ± 1 nm

Notes:

- Luminous intensity is measured with a light sensor and filter combination that proximities the CIE eye-response curve.
- θ 1/2 is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
- The dominant wavelength λ d is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
- Caution in ESD :
Static Electricity and surge damages the LED. It is recommended use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.
- Major standard testing equipment by "Instrument System" Model : CAS140B Compact Array Spectrometer and "KEITHLEY" Source Meter Model : 2400.

● Super Red Typical Electro-Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

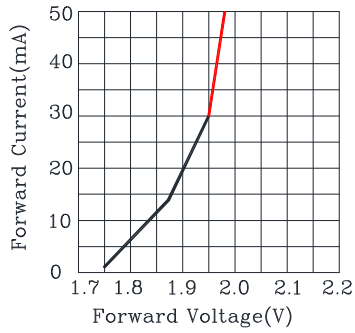


Fig.2 Forward Current vs. Forward Voltage

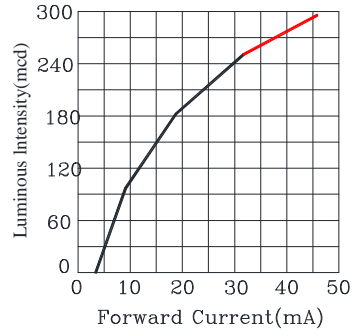


Fig.3 Luminous Intensity vs. Forward Current

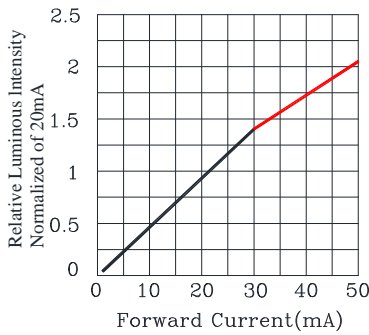


Fig.4 Relative Luminous Intensity vs. Forward Current

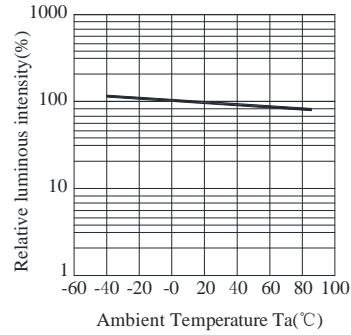


Fig.5 Luminous Intensity vs. Ambient Temperature

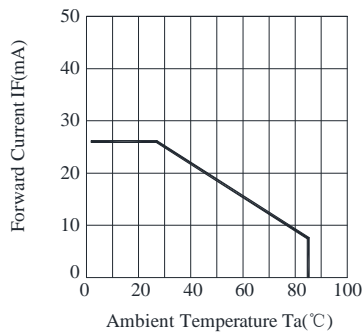


Fig.6 Forward Current Derating Curve

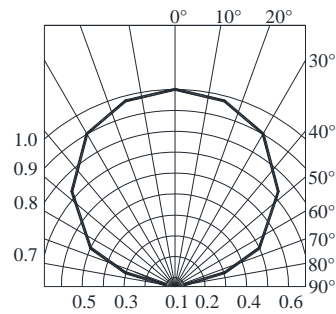


Fig.7 Relative Intensity vs. Angle



SURFACE MOUNT DEVICE LED

Part No. : L-S115KRLGCT-20A

REV: A / 0

● Super Green Typical Electro-Optical Characteristics Curves

(25°C Ambient Temperature Unless Otherwise Noted)

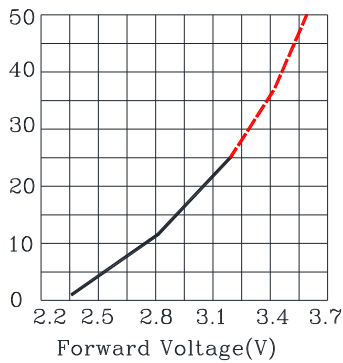


Fig.2 Forward Current vs. Forward Voltage

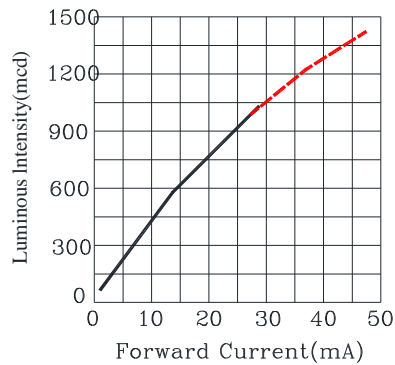


Fig.3 Luminous Intensity vs. Forward Current

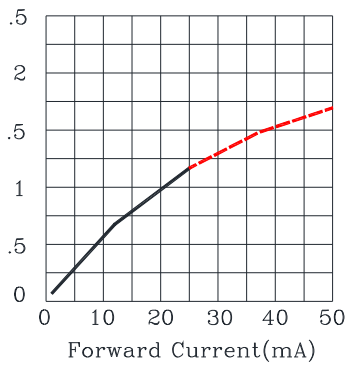


Fig.4 Relative Luminous Intensity vs. Forward Current

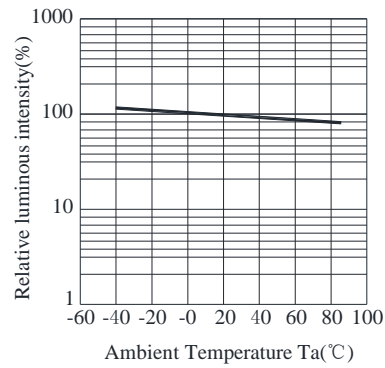


Fig.5 Luminous Intensity vs. Ambient Temperature

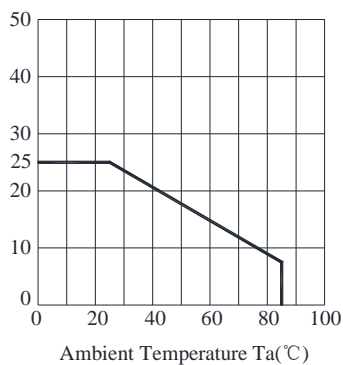


Fig.6 Forward Current Derating Curve

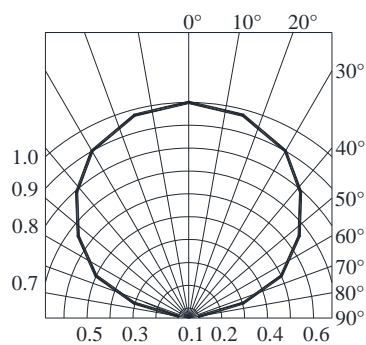


Fig.7 Relative Intensity vs. Angle

● Label Explanation



ITEM CODE:PARRA LIGHT

PART NO: L-S115KRLGCT-20A

IV --- Luminous Intensity Code

LOT NO: EM S L 12 09 0110
 A B C D E F

A---EM: Emos Code

B---S:SMD

L---Local

D---Year

E---Month

F---SPEC.

PACKING QUANTITY OF BAG :

3000pcs for 150、170、110、155、115 series

4000pcs for 191 series

5000pcs for 192 series

DATE CODE: 2012 09 10
 G H I

G--- Year

H--- Month

I --- Day

● Typical Electro-Optical Characteristics Curves

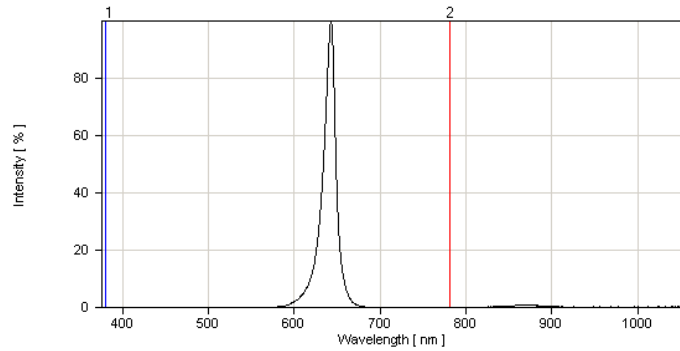


Fig.1 Super Red Relative Intensity vs. Wavelength

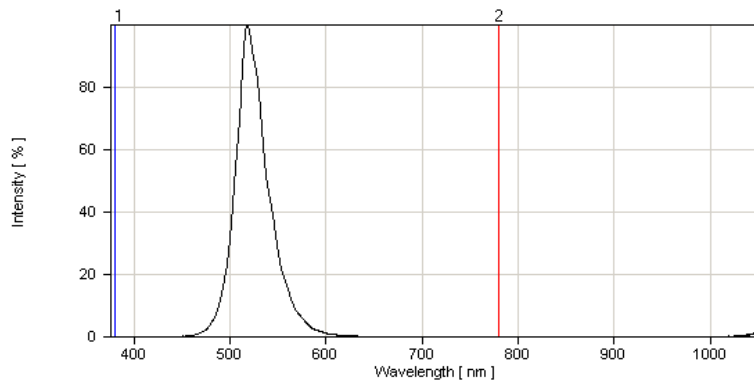
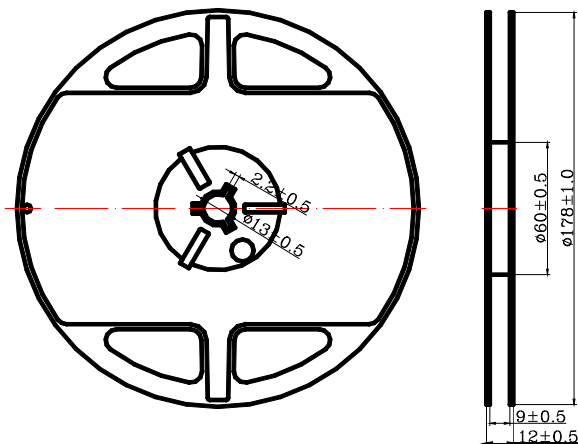


Fig.2. Super Green Relative Intensity vs. Wavelength

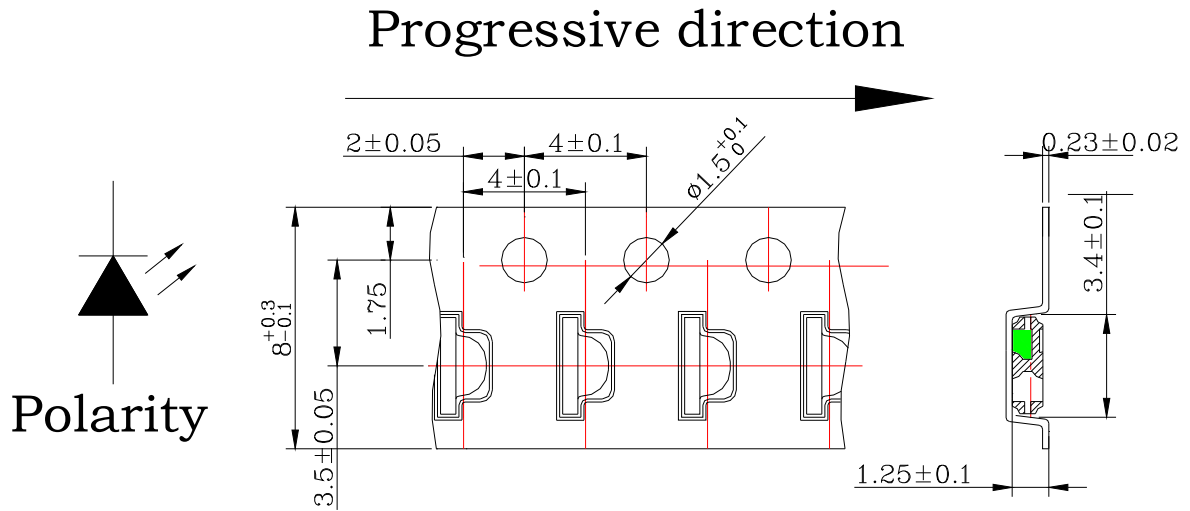
● Reel Dimensions



Notes:

1. Taping Quantity : 3000pcs.
2. The tolerances unless mentioned is $\pm 0.1\text{mm}$, Angle $\pm 0.5^\circ$, Unit : mm.

● Package Dimensions Of Tape And Reel

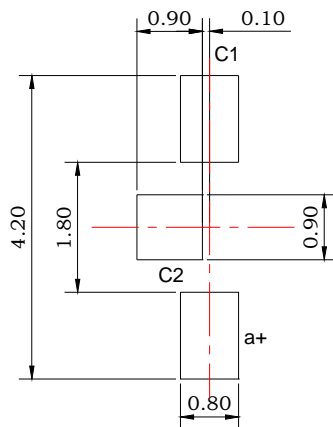


Notes : All dimensions are in millimeters.

● Cleaning

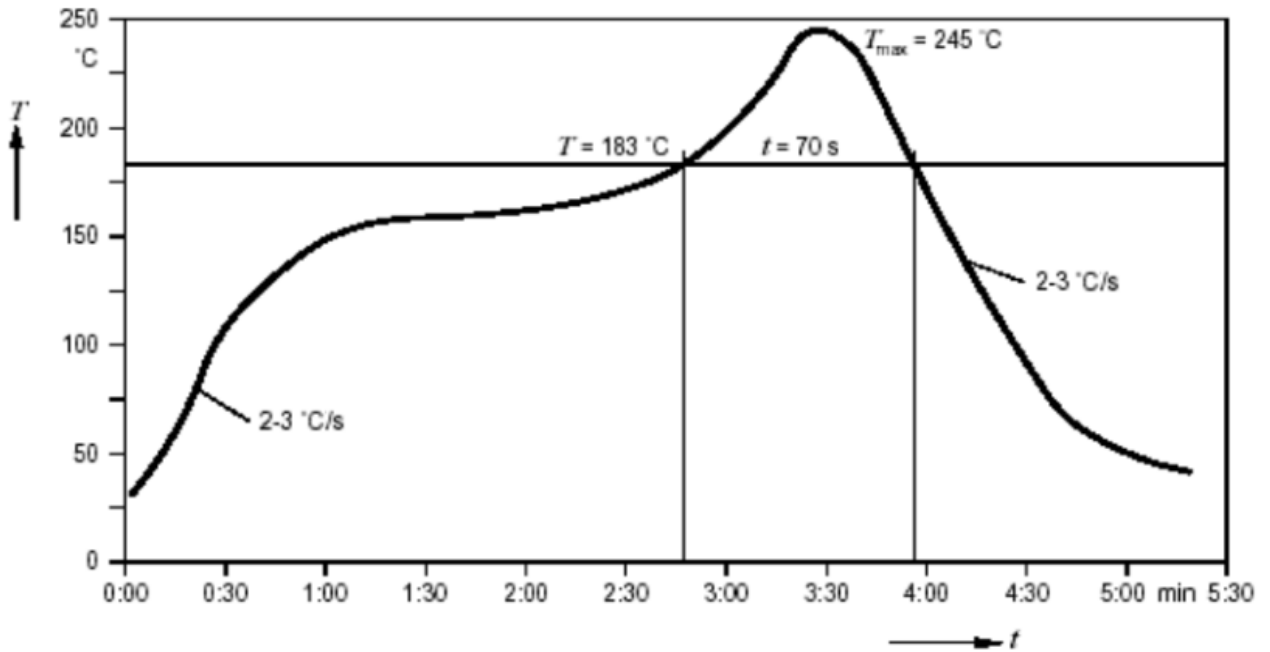
- * If cleaning is required , use the following solutions for less than 1 minute and less than 40°C .
- * Appropriate chemicals: Ethyl alcohol and isopropyl alcohol.
- * Effect of ultrasonic cleaning on the LED resin body differs depending on such factors as the oscillator output, size of PCB and LED mounting method. The use of ultrasonic cleaning should be enforced at proper output after confirming there is no problem.

● Suggest Soldering Pad Dimensions

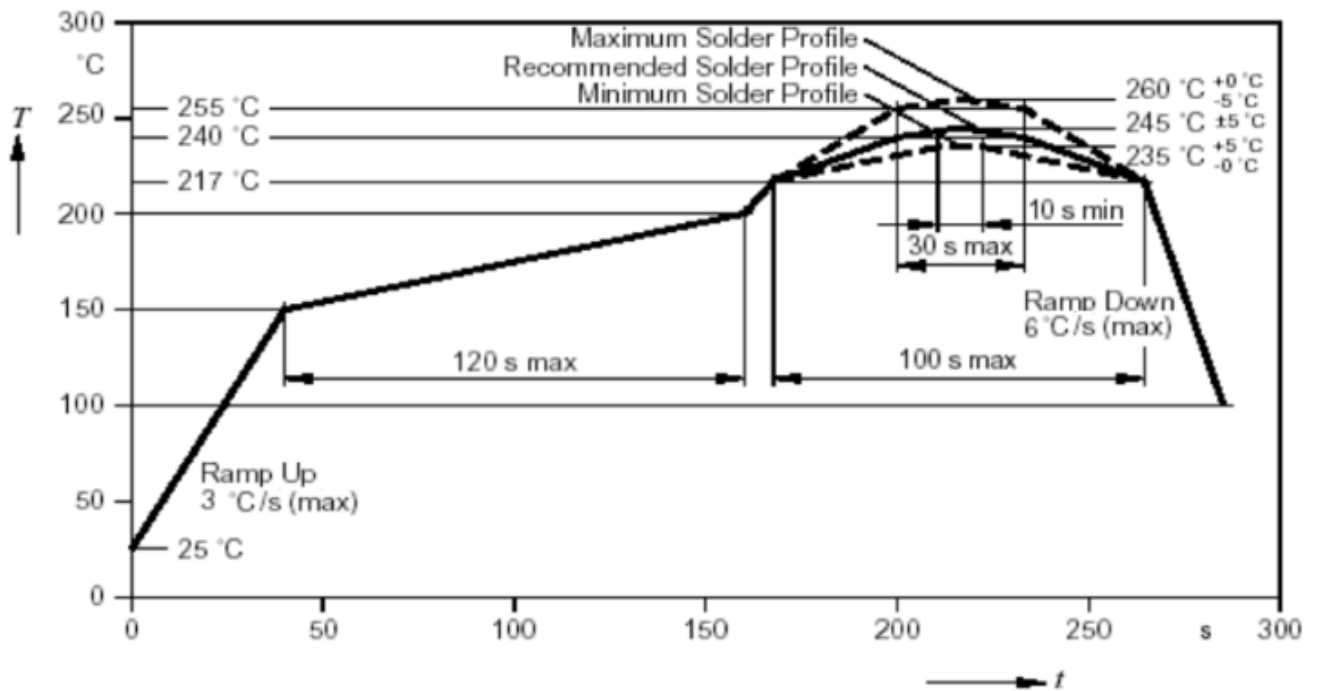


Direction of PWB camber
and go to reflow furnace

● Suggest Sn/Pb IR Reflow Soldering Profile Condition:



● Suggest Pb-Free IR Reflow Soldering Profile Condition:



● CAUTIONS

1.Application Limitation :

The LED's described here are intended to be used for ordinary electronic equipment (such as office equipment, communication equipment and household application). Consult PARA's sales in advance for information on application in which exceptional quality and reliability are required, particularly when the failure or malfunction of the LED's may directly jeopardize life or health (such as airplanes, automobiles, traffic control equipment, life support system and safety devices).

2.Storage :

Do not open moisture proof bag before the products are ready to use.

Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions.

Baking treatment: 60±5°C for 24 hours

3.Soldering(Standard Process) :

Do not apply any stress to the lead frame during soldering while the LED is at high temperature.

Recommended soldering condition.

Reflow Soldering :

Pre-heat 120~150°C, 120sec. MAX., Peak temperature : 240°C Max. Soldering time : 10 sec Max.

Soldering Iron : (Not recommended)

Temperature 300°C Max., Soldering time : 3 sec. Max.(one time only), power dissipation of iron : 20W Max. use SN60 solder of solder with silver content and don't to touch LED lens when soldering.

Wave soldering :

Pre-heat 100°C Max, Pre-heat time 60s Max, Solder wave 260°C Max, Soldering time 5 sec. Max.

performed consecutively cooling process is required between 1st and 2nd soldering processes.

4. Lead-Free Soldering

For Reflow Soldering :

- 1、 Pre-Heat Temp : 150-180°C,120sec.Max.
- 2、 Soldering Temp : Temperature Of Soldering Pot Over 230°C,40sec.Max.
- 3、 Peak Temperature : 260°C , 5sec.
- 4、 Reflow Repetition : 2 Times Max.
- 5、 Suggest Solder Paste Formula 93.3 Sn/3.1 Ag/3.1 Bi /0.5 Cu

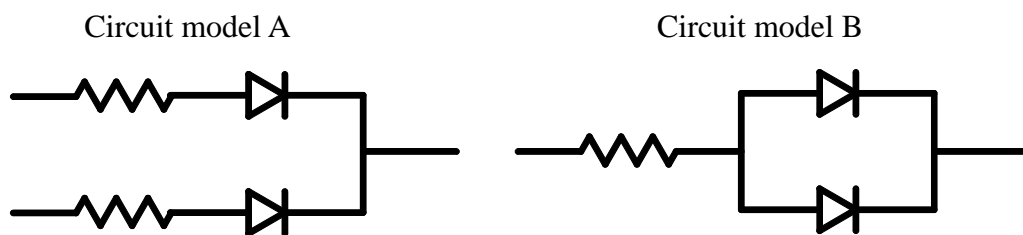
For Soldering Iron (Not Recommended) :

- 1、 Iron Tip Temp : 350°C Max.
- 2、 Soldering Iron : 30w Max.
- 3、 Soldering Time : 3 Sec. Max. One Time.

For Dip Soldering :

- 1、 Pre-Heat Temp : 150°C Max. 120 Sec. Max.
- 2、 Bath Temp : 265°C Max.
- 3、 Dip Time : 5 Sec. Max.

5. Drive Method



(A)Recommended circuit.

(B)The difference of brightness between LED`s could be found due to the Vf-If characteristics of LED.