PARA LIGHT ELECTRONICS CO., LTD.
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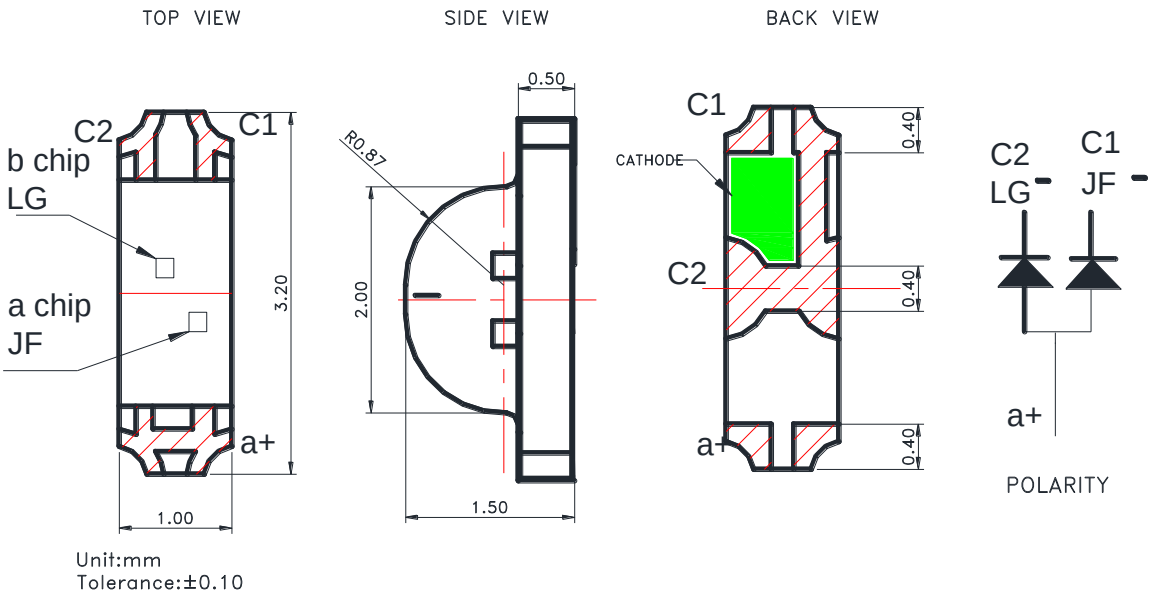
DATA SHEET

PART NO.: L-S115JFLGCT-U1

REV: A / 1

CUSTOMER'S APPROVAL : _____ DCC : _____

PACKAGE OUTLINE DIMENSIONS



Notes:

1. a chip: Super Amber; b chip: Super Green.
2. All dimensions are in millimeters.
3. Tolerance is ± 0.1mm (.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.
- ∗ Pb free product.
- ∗ Meet RoHS Green Product.
- ∗ Moisture sensitivity level: 3

Chip Materials

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

Absolute Maximum Ratings(Ta=25℃)

Symbol	Parameter	Rating		Unit
		Super Amber	Super Green	
P_D	Power Dissipation	75	100	mW
I_{PF}	Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	80	100	mA
I_F	Continuous Forward Current	30	25	mA
V_R	Reverse Voltage	5	5	V
ESD	Electrostatic Discharge Threshold(HBM)	2000		V
Topr	Operating Temperature Range	-40 ~ +85		℃
Tstg	Storage Temperature Range	-40 ~ +85		℃

Electro-Optical Characteristics(Ta=25℃)

Parameter		Symbol	Super Amber	Super Green	Unit	Test Condition
Luminous Intensity	Min.	IV	45	180	mcd	IF=20mA
	Typ.		100	600		
	Max		180	900		
Viewing Angle	Typ.	2θ1/2	130		deg	Note 2
Dominant Wavelength	Min.	λd	600	520	nm	IF=20mA
	Typ.		605	525		
	Max.		610	530		
Spectral Line Half-Width	Typ.	Δλ	17	15	nm	
Forward Voltage	Min.	VF	1.8	2.8	V	IF =20mA
	Typ.		2.0	3.1		
	Max.		2.4	3.4		
Reverse Current	Max.	IR	10	50	μA	VR = 5V

Bin Code List

Luminous Intensity(IV), Unit:mcd@20mA					
Super Amber(a chip)			Super Green(b chip)		
Bin Code	Min	Max	Bin Code	Min	Max
P	45	71	S	180	280
Q	71	112	T	280	450
R	112	180	U	450	650
			V	650	900

Tolerance of each bin are±15%

Forward Voltage(VF), Unit:V@20mA		
Green(b chip)		
Bin Code	Min	Max
K8	2.80	2.95
K9	2.95	3.10
K10	3.10	3.25
K11	3.25	3.40

Tolerance of each bin are±0.1Volt

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±1nm

Notes:

1. Luminous intensity is measuAmber with a light sensor and filter combination that proximities the CIE eye-response curve.
2. θ1/2 is the off-axis angle at which the luminous intensity is half the axial luminous intensity.
3. The dominant wavelength λd is derived from the CIE chromaticity diagram and represents the single wavelength which defines the color of the device.
4. 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.
5. Major standard testing equipment by “Instrument System” Model : CAS140B Compact Array Spectrometer and “KEITHLEY” Source Meter Model : 2400.

Super Amber Typical Electro-Optical Characteristics Curves

(25℃Ambient Temperature Unless Otherwise Noted)

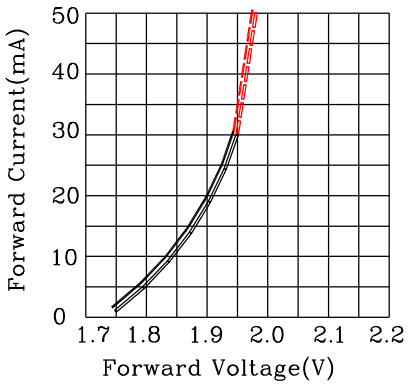


Fig.2 Forward Current vs.Forward Voltage

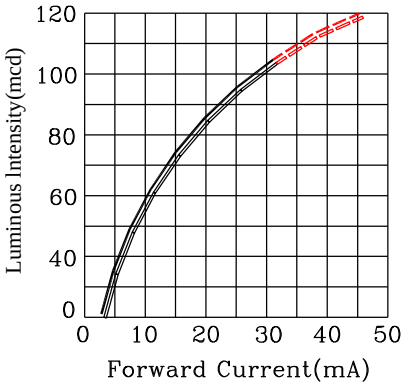


Fig.3 Luminous Intensity vs.Forward Current

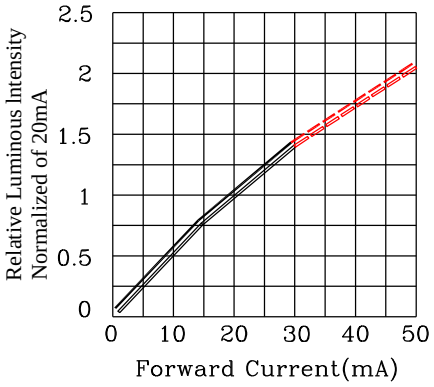


Fig.4 Relative Luminous Intensity vs.Forward Current

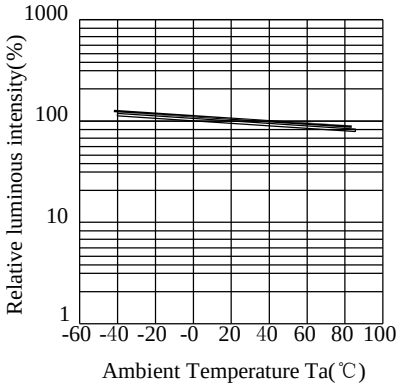


Fig.5 Luminous Intensity vs.Ambient Temperature

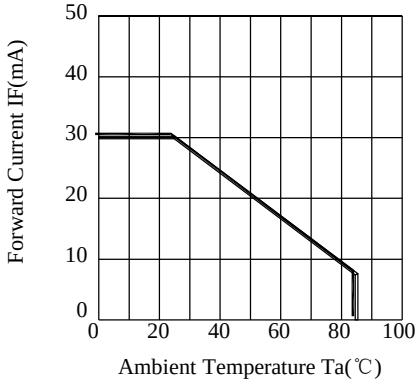


Fig.6 Forward Current Derating Curve

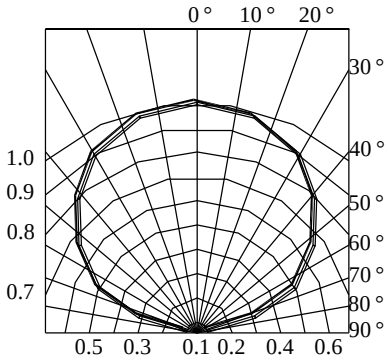


Fig.7 Relative Intensity vs.Angle

Super Green Typical Electro-Optical Characteristics Curves

(25℃Ambient Temperature Unless Otherwise Noted)

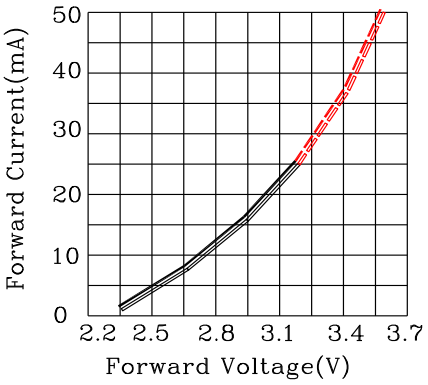


Fig.2 Forward Current vs.Forward Voltage

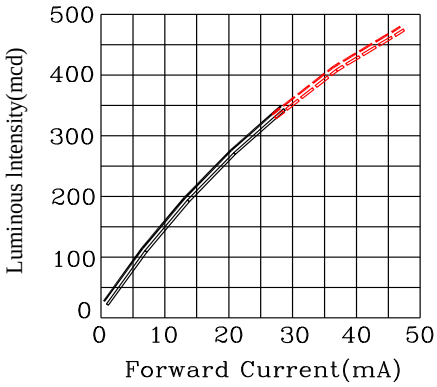


Fig.3 Luminous Intensity vs.Forward Current

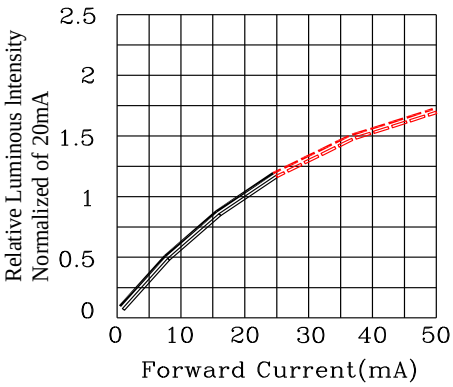


Fig.4 Relative Luminous Intensity vs.Forward Current

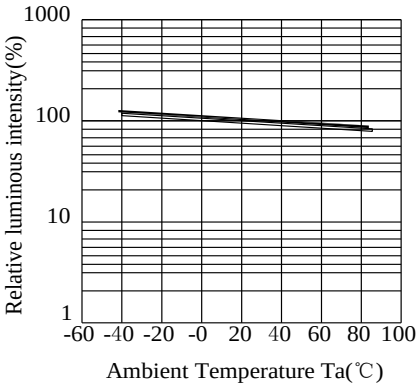


Fig.5 Luminous Intensity vs.Ambient Temperature

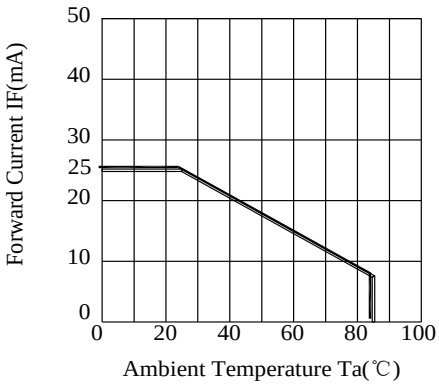


Fig.6 Forward Current Derating Curve

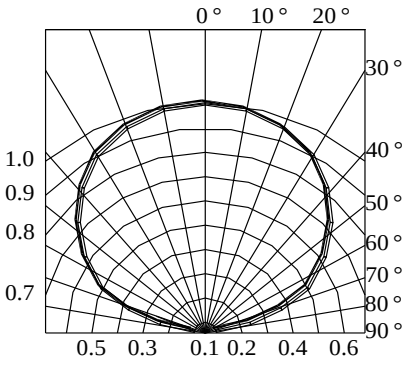


Fig.7 Relative Intensity vs.Angle

- Label Explanation

ITEM CODE:PARRA LIGHT

PART NO: L-S115JFLGCT-U1

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

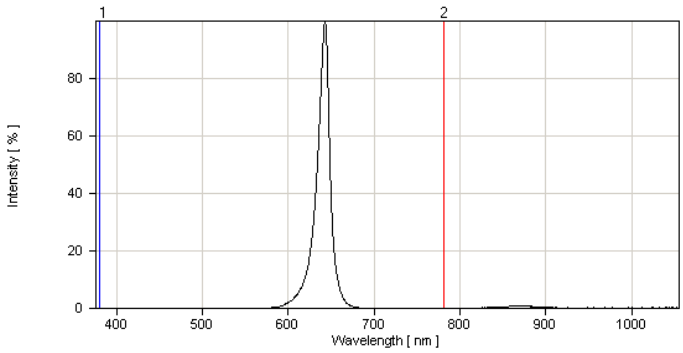


Fig.1 Super Amber Relative Intensity vs. Wavelength

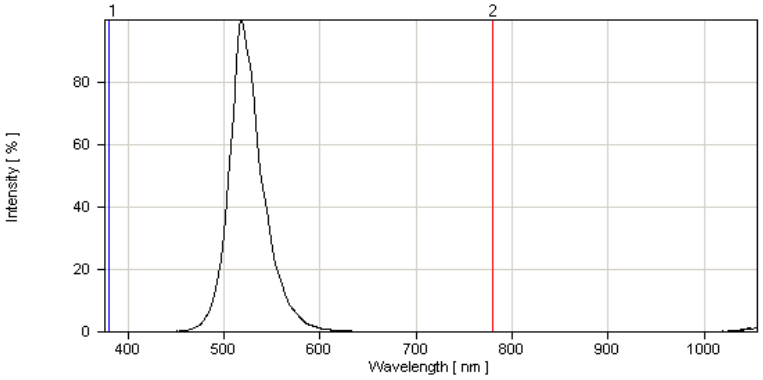
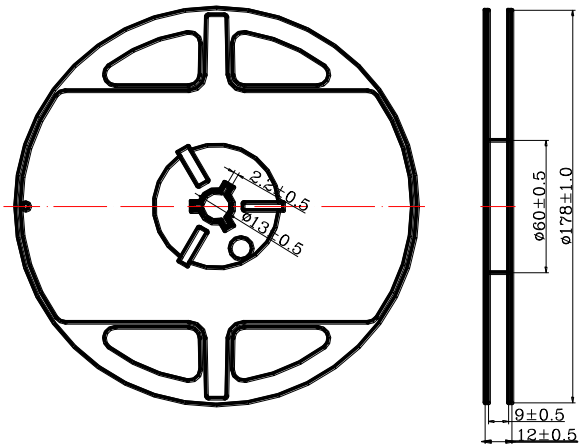


Fig.2. Super Green Relative Intensity vs. Wavelength

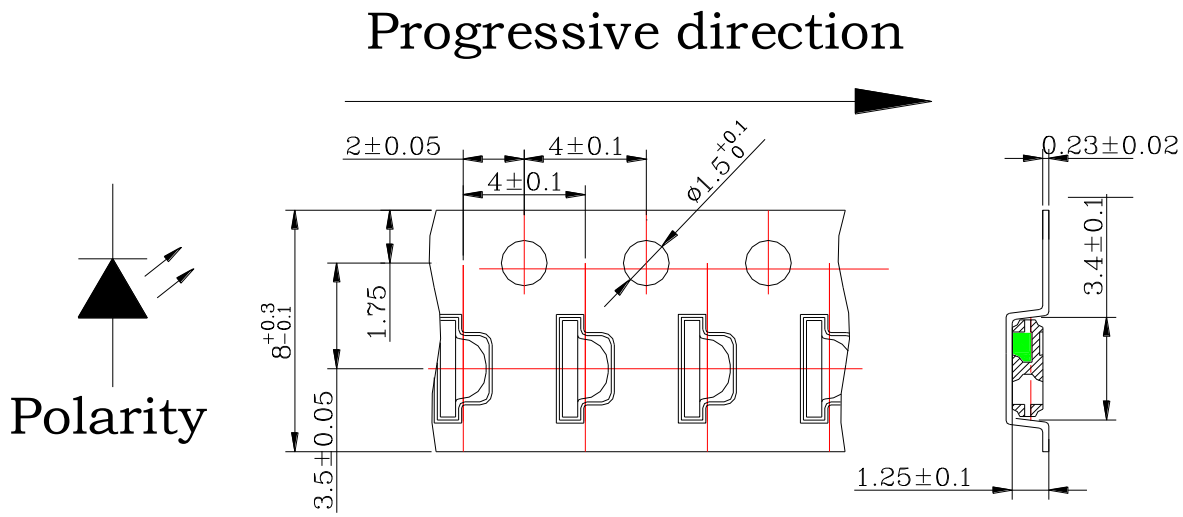
- Reel Dimensions



Notes:

1. Taping Quantity : 3000pcs.
2. The tolerances unless mentioned is ±0.1mm, Angle ±0.5° , Unit : mm.

- Package Dimensions Of Tape And Reel

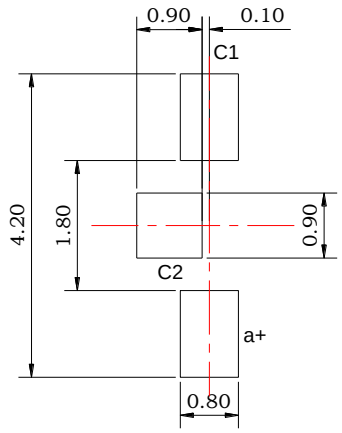


Notes : All dimensions are in millimeters.

- Cleaning

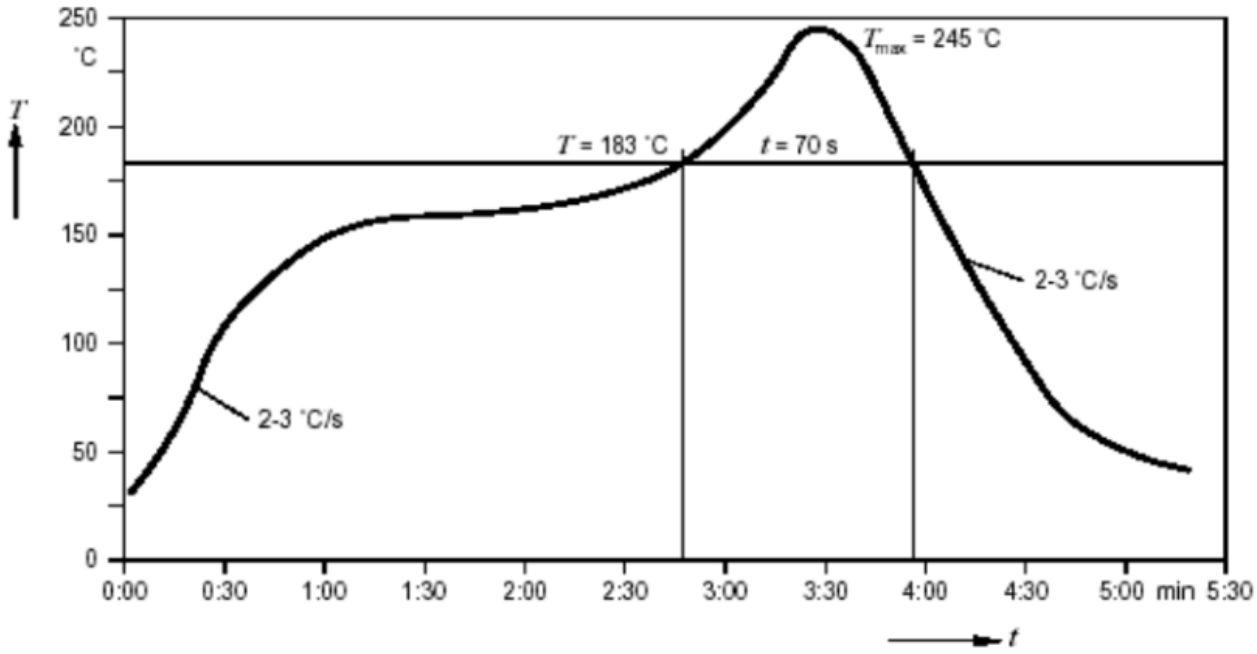
  ∗ If cleaning is requiAmber , use the following solutions for less than 1 minute and less than 40℃.
  ∗ Appropriate chemicals: Ethyl alcohol and isopropyl alcohol.
  ∗ Effect of ultrasonic cleaning on the LED resin body differs depending on such factors as the oscillator output, size of PCB and LED mounting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

- Suggest Soldering Pad Dimensions

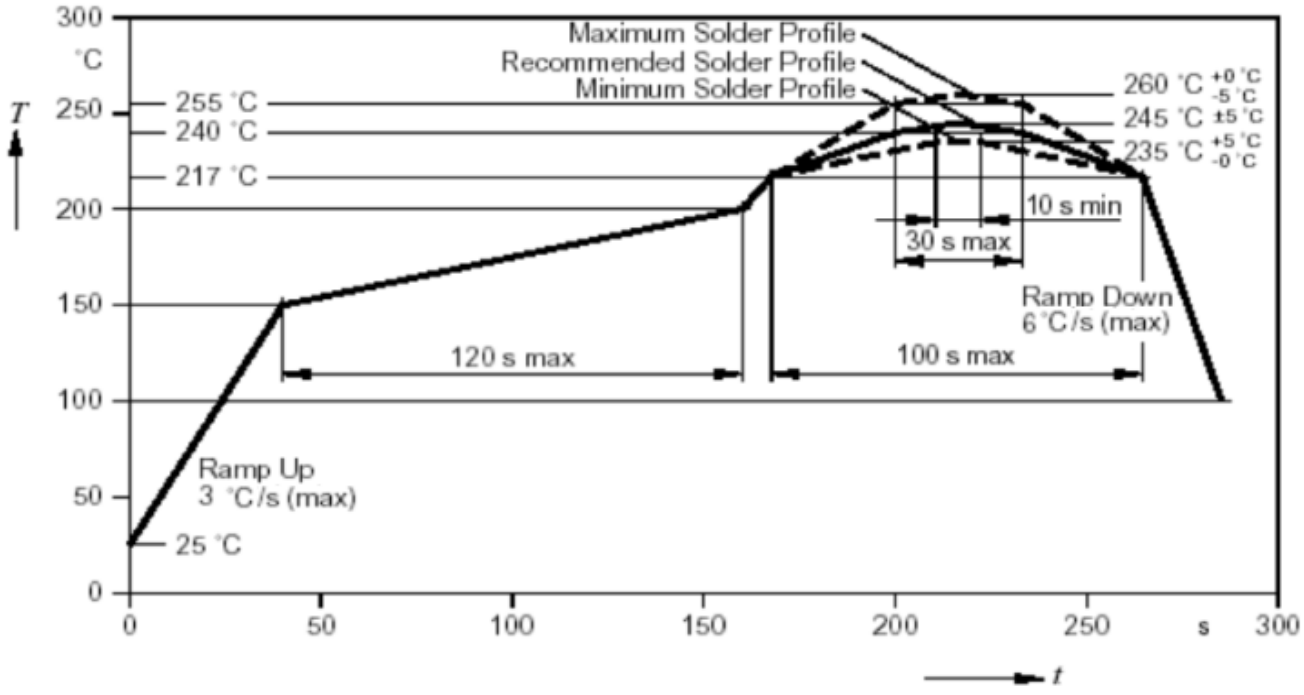


Direction of PWB camber
and go to reflow furnace

- 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 requiAmber, 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℃ or less and 90%RH or less.

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℃ 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 ℃, 120sec. MAX., Peak temperature : 240 ℃ Max. Soldering time : 10 sec Max.
Soldering Iron : (Not recommended)
Temperature 300 ℃ 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 ℃ Max, Pre-heat time 60s Max, Solder wave 260 ℃ Max, Soldering time 5 sec. Max.
preformed consecutively cooling process is requiAmber between 1st and 2nd soldering processes.

4. Lead-Free Soldering

For Reflow Soldering :

1、Pre-Heat Temp : 150-180℃,120sec.Max.
2、Soldering Temp : Temperature Of Soldering Pot Over 230℃,40sec.Max.
3、Peak Temperature : 260℃， 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) :

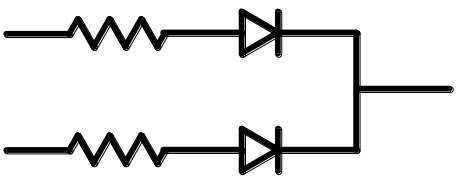
1、Iron Tip Temp : 350℃ Max.
2、Soldering Iron : 30w Max.
3、Soldering Time : 3 Sec. Max. One Time.

For Dip Soldering :

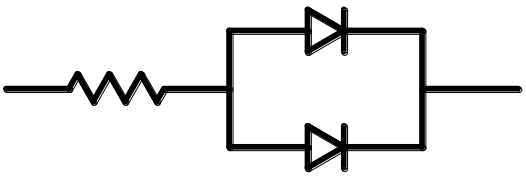
1、Pre-Heat Temp : 150℃ Max. 120 Sec. Max.
2、Bath Temp : 265℃ Max.
3、Dip Time : 5 Sec. Max.

5. Drive Method

Circuit model A



Circuit model B



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