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# SPECIFICATION

*PART NO. :LPFGW3-FG-1UFC3-GS04*

**3.5 x 3.5 x 2.3mm High Power SMD LED WITH LENS**

**PRELIMINARY**

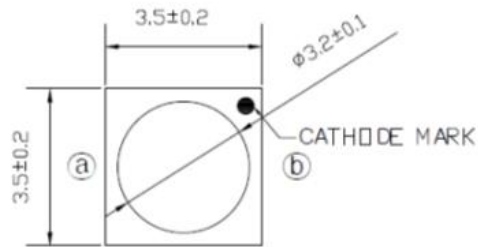


Approved by	Checked by	Prepared by
<i>Yue</i>	<i>Lian</i>	<i>Liang Dai</i>

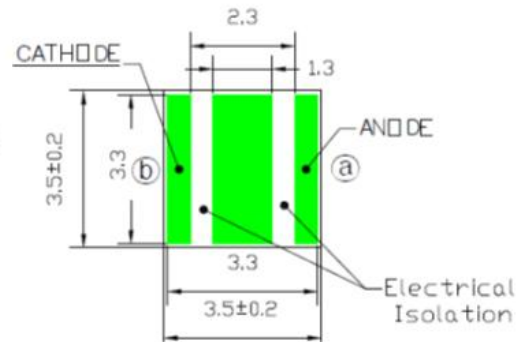


### Package Dimensions

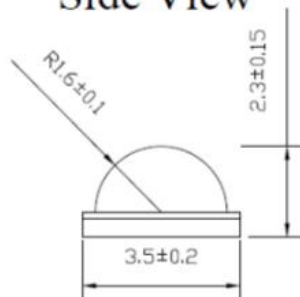
Top View



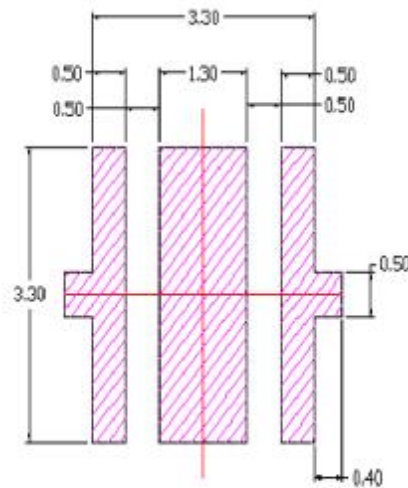
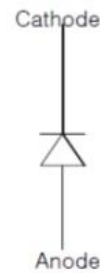
Bottom View



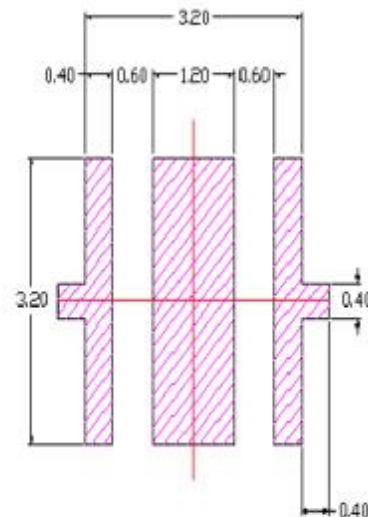
Side View



Circuit



Recommended PCB Solder Pad



Recommended Stencil Pattern

**Notes:**

- (1) All dimensions are in millimeters.
- (2) Scale : none
- (3) Undefined tolerance is ±0.1mm



LPFGW3-FG-1UFC3-GS04

3.5 x 3.5x2.3mm  
High Power SMD LED**Description**

Part No.	LED Chip		Lens Color
	Material	Emitting Color	
LPFGW3-FG-1UFC3-GS04	InGaN/Sapphire	White	Yellow diffused

**Absolute Maximum Ratings at Ta=25 °C**

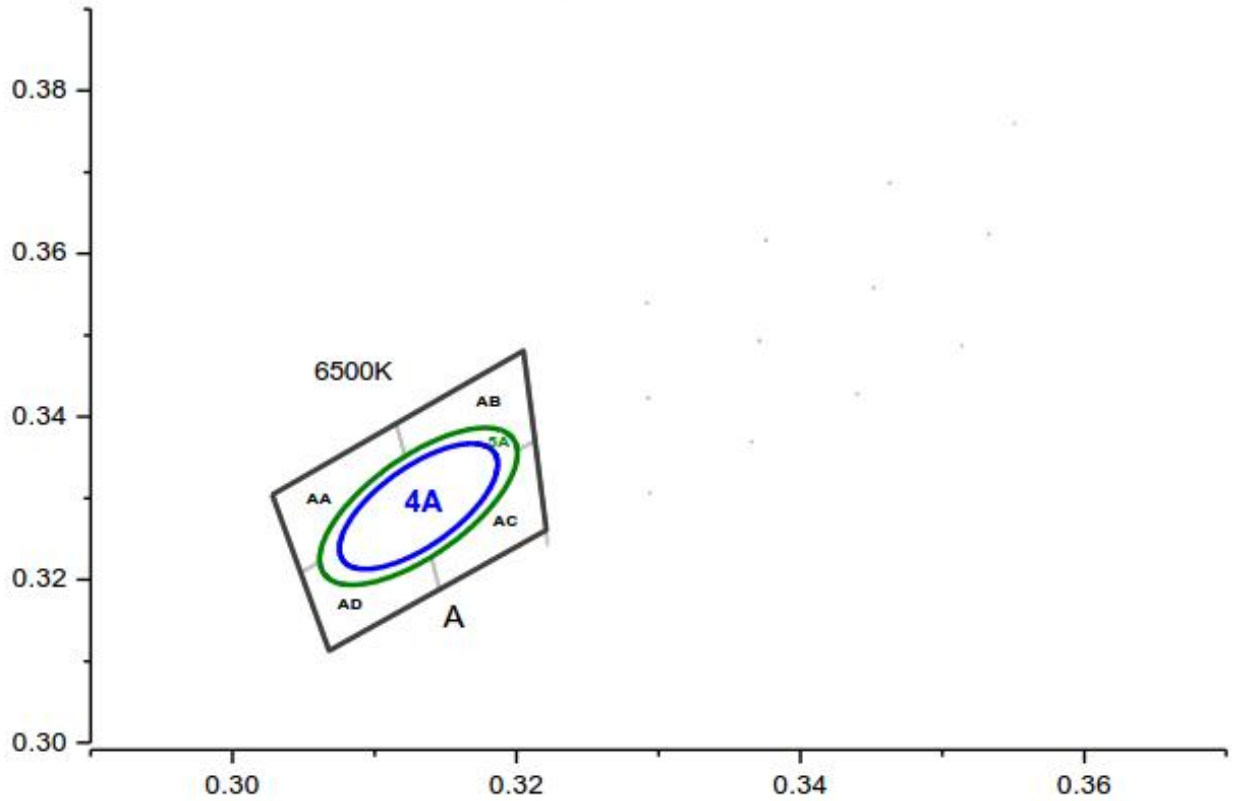
Parameter	Symbol	Rating	Unit
D.C. Forward Current [1]	If	700	mA
Max DC Forward Current[1]	IF(Max DC)	1500	mA
Peak Pulsed Forward Current [2]	IF(Max Pulsed)	2000	mA
LED Junction Temperature	TJ	150	°C

**Electrical and Optical Characteristics:**

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	$\Phi V$	If=700mA	285	--	327	lm
Forward Voltage	Vf	If=700mA		--	2.95	V
Thermal resistance	R $\theta$ J-S	If=700mA		3.2		K/W
Correlated Colour Temperature	CCT	If=700mA	6000	--	7000	K
Reverse Current	Ir	VR=5V	-	-	10	$\mu$ A
Viewing Angle	2 $\theta$ 1/2	If=700mA		125		deg
Color Rendering Index	CRI	If=700mA		70		Ra

## Color Bin Structure

CIE Chromaticity Diagram (Cool white),  $T_j=85^\circ\text{C}$ ,  $I_F=700\text{mA}$



BIN	RANK				
AA	X	0.3028	0.3048	0.3131	0.3115
	Y	0.3304	0.3209	0.329	0.3393
AB	X	0.3115	0.3131	0.3213	0.3205
	Y	0.3393	0.329	0.3371	0.3481
AC	X	0.3131	0.3146	0.3221	0.3213
	Y	0.329	0.3187	0.3261	0.3371
AD	X	0.3048	0.3068	0.3146	0.3131
	Y	0.3209	0.3113	0.3187	0.329

### Typical Electrical/Optical Characteristic Curves

(25°C Ambient Temperature Unless Otherwise Noted)

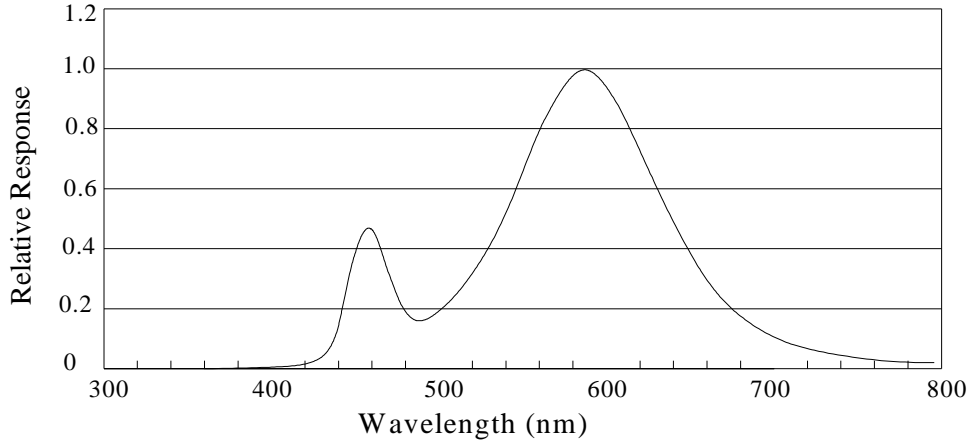
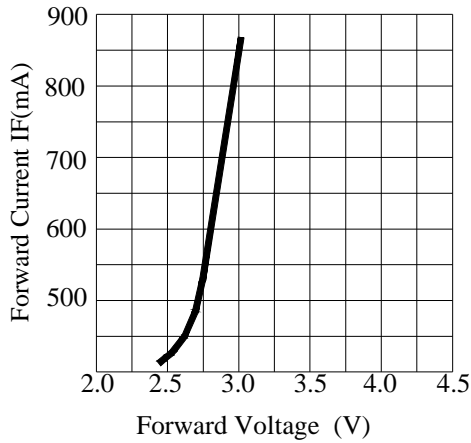
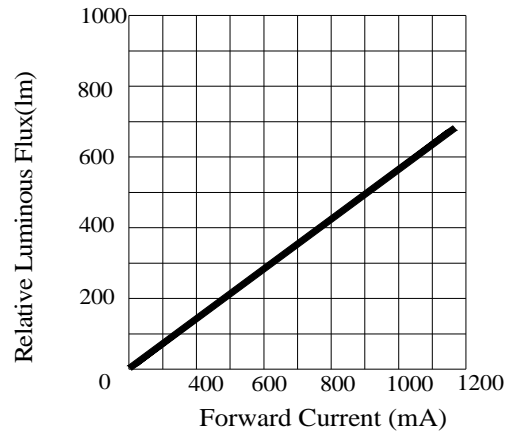


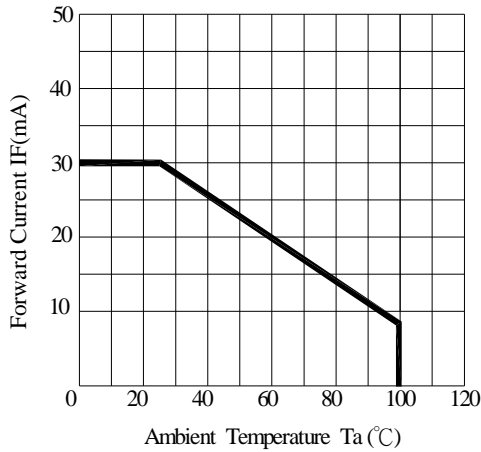
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



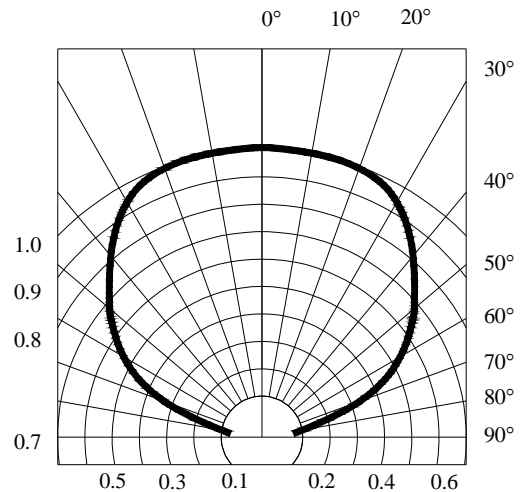
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Intensity

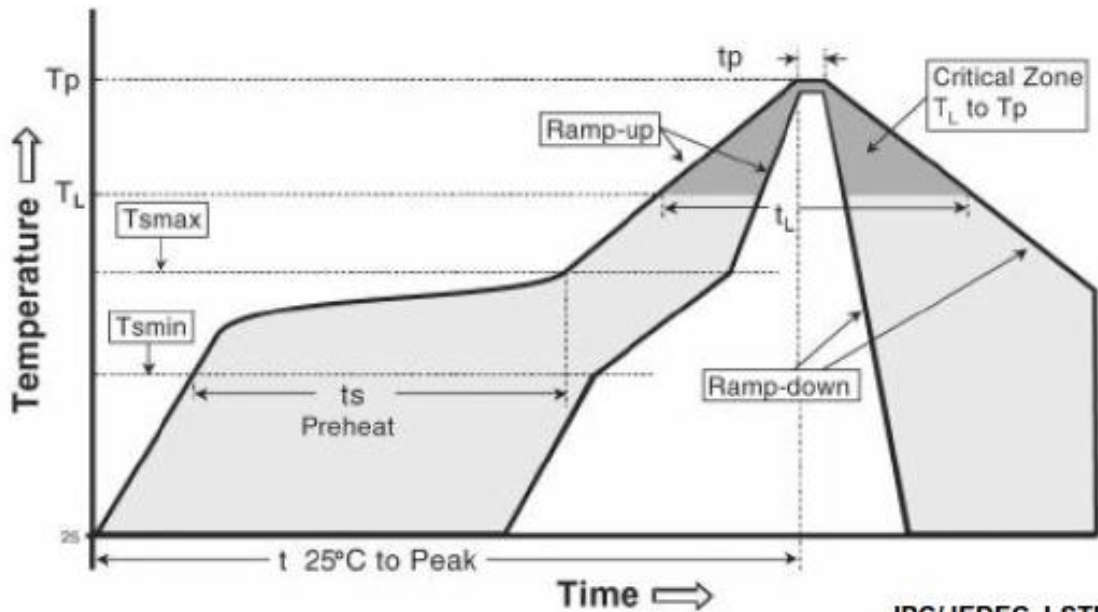


Ambient Temperature VS. Forward Current



Radiation Diagram

Typical Reflow Soldering Profile  
Reflow Soldering Temperature Profile



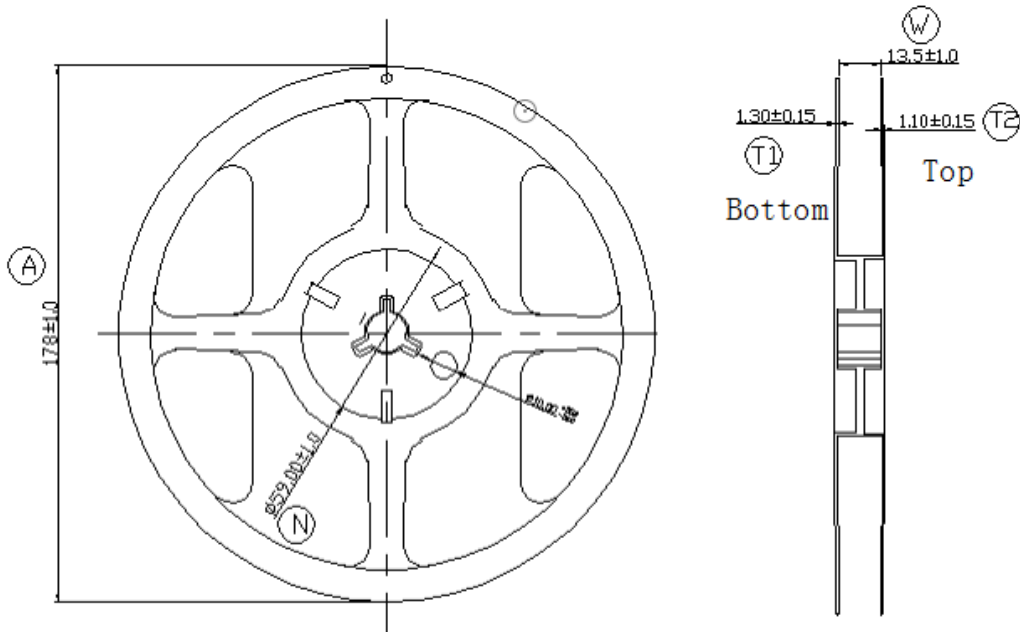
IPC/JEDEC J-STD-020

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Average ramp-up rate (Tsmax to Tp)	3° C/second max.	3° C/second max.
Preheat		
- Temperature Min (Tsmín)	100 °C	150 °C
- Temperature Max (Tsmáx)	150 °C	200 °C
- Time (Tsmín to Tsmáx) (ts)	60-120 seconds	60-180 seconds
Time maintained above:		
- Temperature (TL)	183 °C	217 °C
- Time (tL)	60-150 seconds	60-150 seconds
Peak Temperature (Tp)	215°C	260°C
Time within 5°C of actual Peak Temperature (tp)2	10-30 seconds	20-40 seconds
Ramp-down Rate	6 °C/second max.	6 °C/second max.
Time 25°C to Peak Temperature	6 minutes max.	8 minutes max.

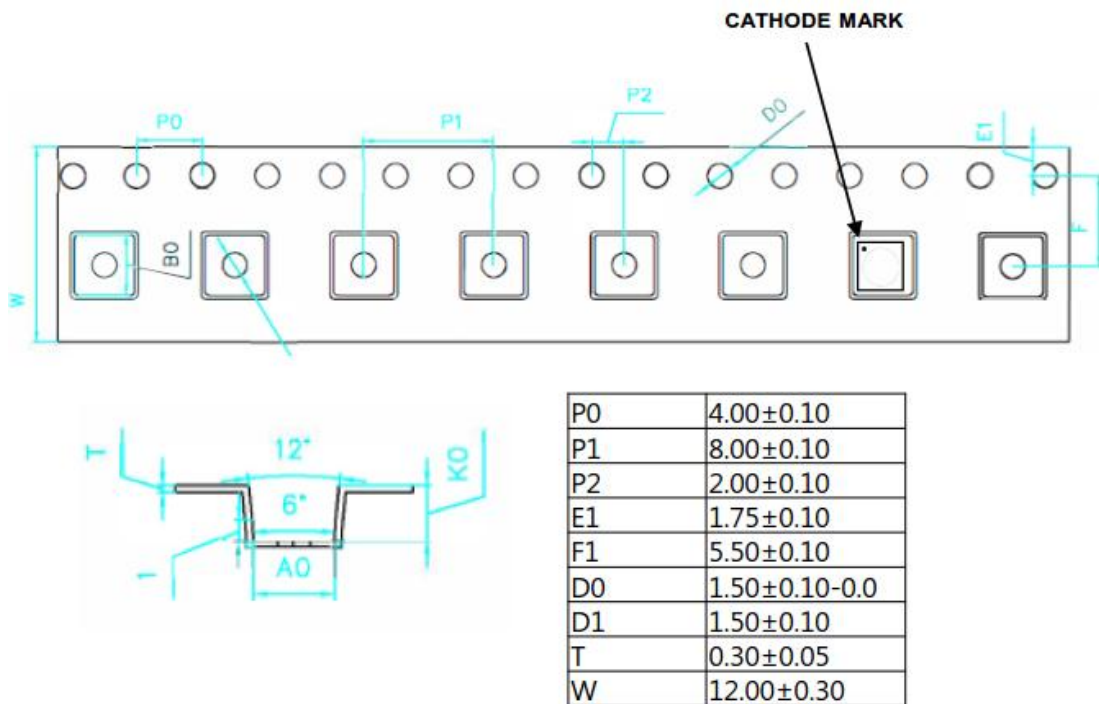
**Caution**

- (1) Reflow soldering is recommended not to be done more than two times. In the case of more than 24 hours passed soldering after first, LEDs will be damaged.
- (2) Repairs should not be done after the LEDs have been soldered. When repair is unavoidable, suitable tools must be used.
- (3) Die slug is to be soldered.
- (4) When soldering, do not put stress on the LEDs during heating.
- (5) After soldering, do not warp the circuit board.
- (6) For this LED, it is recommended to set the reflow peak temperature at 250~260 °C based on real temperature because of complete soldering.

Reel Packaging



Emitter Tape



Notice

1. Quantity : 900pcs/Reel
2. Cumulative Tolerance : Cumulative Tolerance/10 pitches to be  $\pm 0.2\text{mm}$
3. Adhesion Strength of Cover Tape : Adhesion strength to be 10-60g when the cover tape is turned off from the carrier tape at the angle of  $10^\circ$  to the carrier tape
4. Package : P/N, Manufacturing data Code No. and quantity to be indicated on a damp proof

Package



## **Sulfur-sensitive**

- 1 There is silver-plated metal part on the inner/outer side of the outer package.  
If exposed to the condition with corrosive gas, the silver plating surface may go bad, which will affect soldering strength and optical properties. Therefore, after opening it must be kept in a sealed container, etc.**
- 1 Materials contain sulfur component (gasket, adhesive, etc.) may have bad effects on the surface of the coating, so please do not use such materials in the product.**
- 1 In cardboard boxes and rubber, even in the atmosphere may contain minute amount of corrosive gases; In addition, the resin material may also contain halogen which has a bad effect on the surface of the coating.**
- 1 Even if the soldering installation and product assembly finished, by the effect of corrosive gas generated by relative materials of LED and external injected, the coating surface may go bad, so it is necessary to design the product taking into account the above factors.**
- 1 If requires, it is best to use a silicone washer, but be aware that low molecular silicone may cause the product poor contact.**
- 1 Keep the product in location where has less temperature change, because moisture condensation would be generated under a condition of strong temperature change.**

## **DISCLAIMER**

- 1. Our department reserves the right(s) on the adjustment of product material mix for the specification.**
- 2.The product meets our department published specification for a period of twelve (12) months from date of shipment.**
- 3.The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.**
- 4.When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. Our department assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.**
- 5.These specification sheets include materials protected under copyright of our department.  
Reproduction in any form is prohibited without obtaining our department's prior consent.**
- 6.This product is not intended to be used for military, aircraft, automotive, medical, life sustaining or life saving applications or any other application which can result in human injury or death. Please contact authorized our department sales agent for special application request.**