



LIGITEK ELECTRONICS CO.,LTD.
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High Power Light LED



Lead-Free Parts

LGXR-521E-T350

DATA SHEET

DOC. NO : QW0905-LGXR-521E-T350

REV. : A

DATE : 21 - Jan. - 2015



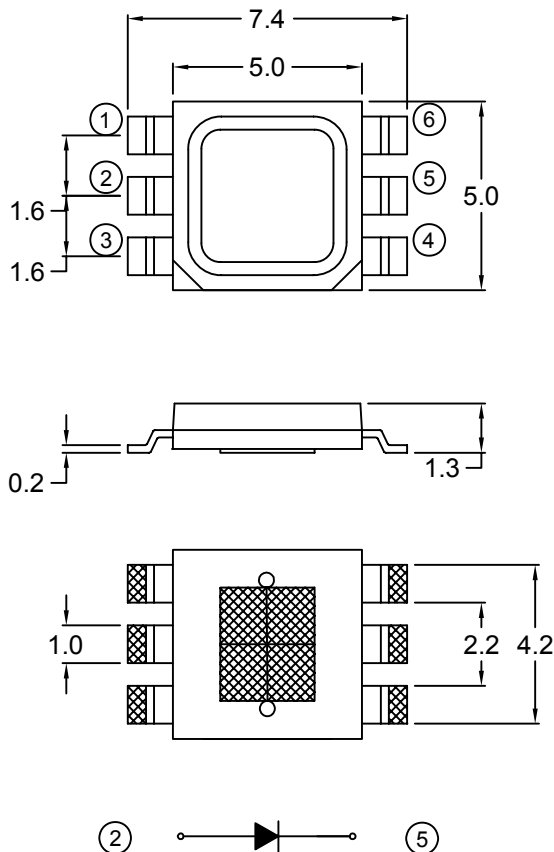
Features

- *. High Flux per LED
- *. Very long operating life(up to 100k hours).
- *. Available in Red.
- *. More Energy Efficient than Incandescent and most Halogen lamps.
- *. Low voltage DC operated..
- *. Cool beam, safe to the touch.
- *. Instant light(less than 100 ns).
- *. Fully dimmable.
- *. No UV.

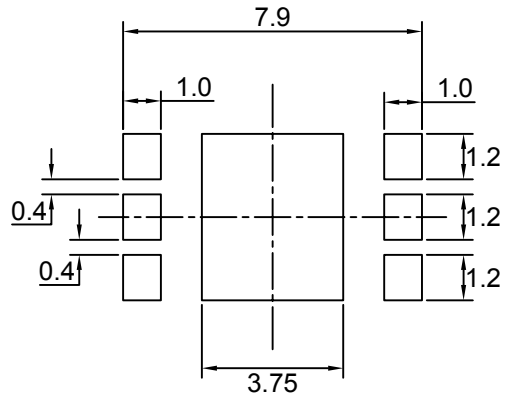
Typical Applications

- *. Reading Light (car,bus,aircraft)
- *. Portable(flashlight,bicycle).
- *. LCD Backlights / Light Guides.
- *. Automotive Exterior (Stop-Tail-Turn,CHMSL,Mirror Side Repeat).
- *. Commercial and Residential Architectural lighting.
- *. Mini-accent / Uplighters / Downlighters / Orientation lighting
- *. Fiber Optic Alternative / Decorative / Entertainment lighting.
- *. Security / Garden lighting.
- *. Cove / Underself / Task lighting.
- *. Traffic signaling / Beacons / Rail crossing and Wayside lighting.
- *. Decorative.
- *. Sign and channel Letter.

Dimension



Recommended Solder Patter



Note : The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit=mm.

Note : 1.All dimension are in millimeter tolerance is $\pm 0.2\text{mm}$ unless otherwise noted.
2.Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Ratings	UNIT
		Red	
DC Forward Current	I _F	350	mA
Power Dissipation	PD	1050	mW
Peak pulse current Duty 1/10@10KHz	I _{FP}	700	mA
LED junction Temperature	T _j	125	°C
Reverse Current(VR=5V)	I _r	10	μA
Electrostatic Discharge	ESD	2000	V
Storage Temperature	T _{stg}	-40 ~ + 85	°C
Operating Temperature	T _{opr}	-40 ~ + 100	°C
Soldering Temperature	T _p	260	°C
Hand Soldering Time at320°C(Max)	T _{sol}	3	seconds

Note:

- 1.Proper current derating must be observed to maintain temperature below the maximum.
- 2.LEDS are not designed to be driven in reverse bias.

Luminous Intensity Characteristics at 350mA (Ratings At 25°C Ambient)

PART NO	Emission Color	Luminous Flux @350mA			Units
		Min.	Typ.	Max.	
LGXR-521E-T350	Red	16500	17500	----	mcd

Note :

1. Red emitters are built with AlGaInP.
2. Luminous Intensity is measured with an accuracy of ±10%

Forward Voltage Characteristics at 350mA

(Ratings At 25°C Ambient)

PART NO	Emission Color	Vf			Units
		Min.	Typ.	Max.	
LGXR-521E-T350	Red	1.8	----	3.0	V

Note : Forward Voltage is measured with an accuracy of $\pm 0.1V$

Dominant Wavelength Characteristics at 350mA

(Ratings At 25°C Ambient)

PART NO	Emission Color	λD			Units
		Min.	Typ.	Max.	
LGXR-521E-T350	Red	----	625	----	nm

Emission Angle Characteristics at 350mA

(Ratings At 25°C Ambient)

PART NO	Emission Color	Lambertian	Units
LGXR-521E-T350	Red	120	Degess

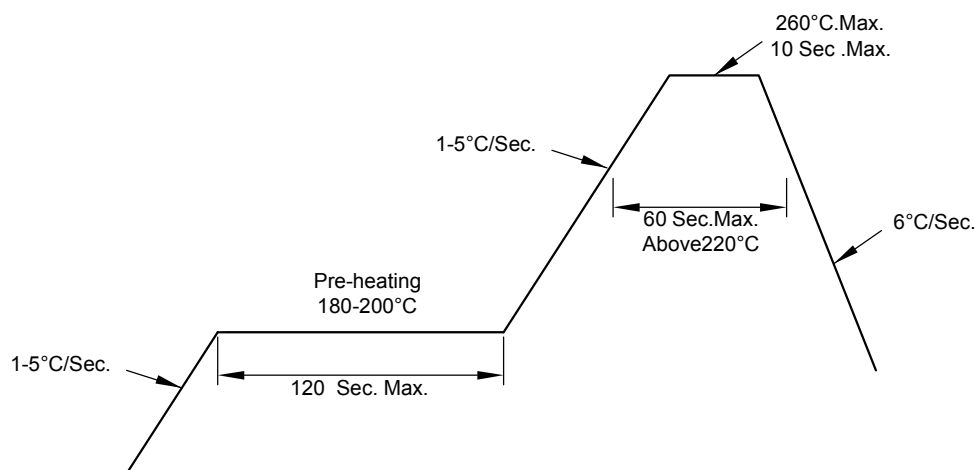
Luminous Intensity Classification

BIN CODE	Iv(mcd) at 350mA	
	Min.	Max.
N50P00	16500	17000
P00P50	17000	17500
P50Q00	17500	18000
Q00Q50	18000	18500
Q50R00	18500	19000

Recommended Profile for Reflow Soldering

Pb -free solder temperature profile

Pb -free solder Temperature profile	
Pre-heat	180-200°C
Pre-heat time	120 Sec Max
Peak-Temperature	260°C Max
Soldering time condition	10 Sec Max



- (1) Reflow soldering should not be done more than two times.
- (2) When soldering, do not put stress on the LEDs during heating.
- (3) After soldering, do not warp the circuit board.
- (4) The encapsulated material of the LEDs is silicone.
Precautions should be taken to avoid the strong pressure on the encapsulated part.
So when using the chip mounter, the picking up nozzle that does not affect the silicone resin should be used.

Hand Soldering Conditions:

Do not exceed 3 seconds at maximum 320°C under soldering iron. (one time only)

Typical Electro-Optical Characteristics Curve

Fig.1 Forward current vs. Forward Voltage

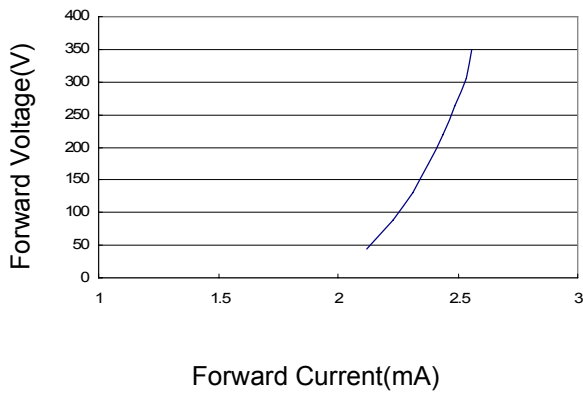


Fig.2 Forward current vs. Luminous Intensity

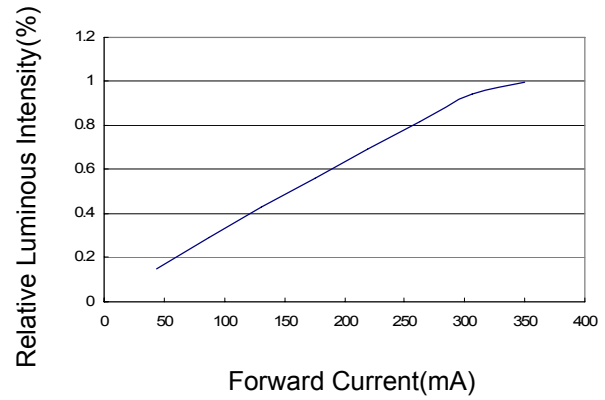


Fig.3 Directivity Radiation

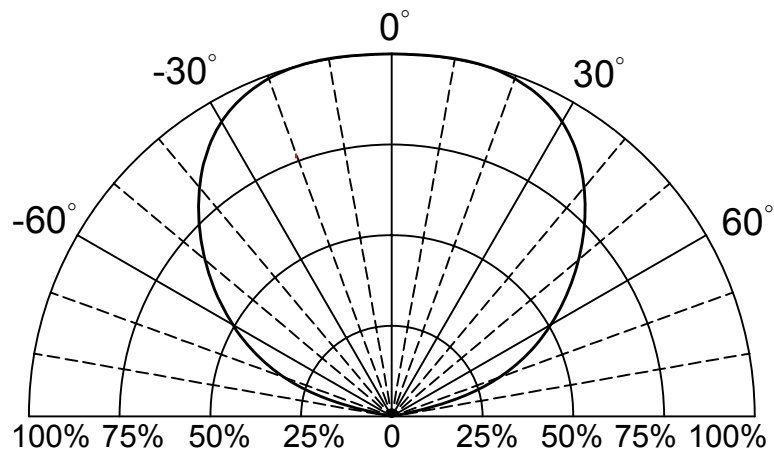
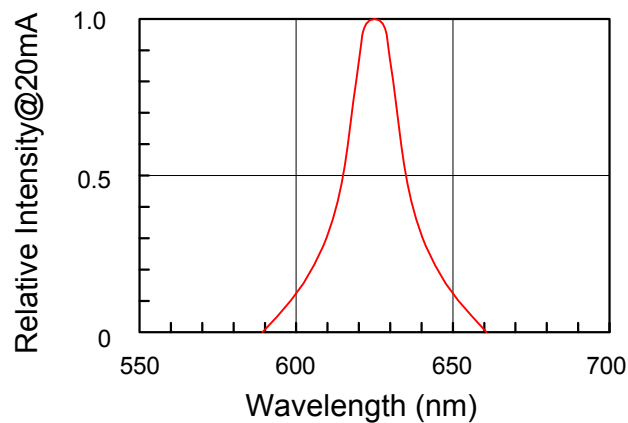
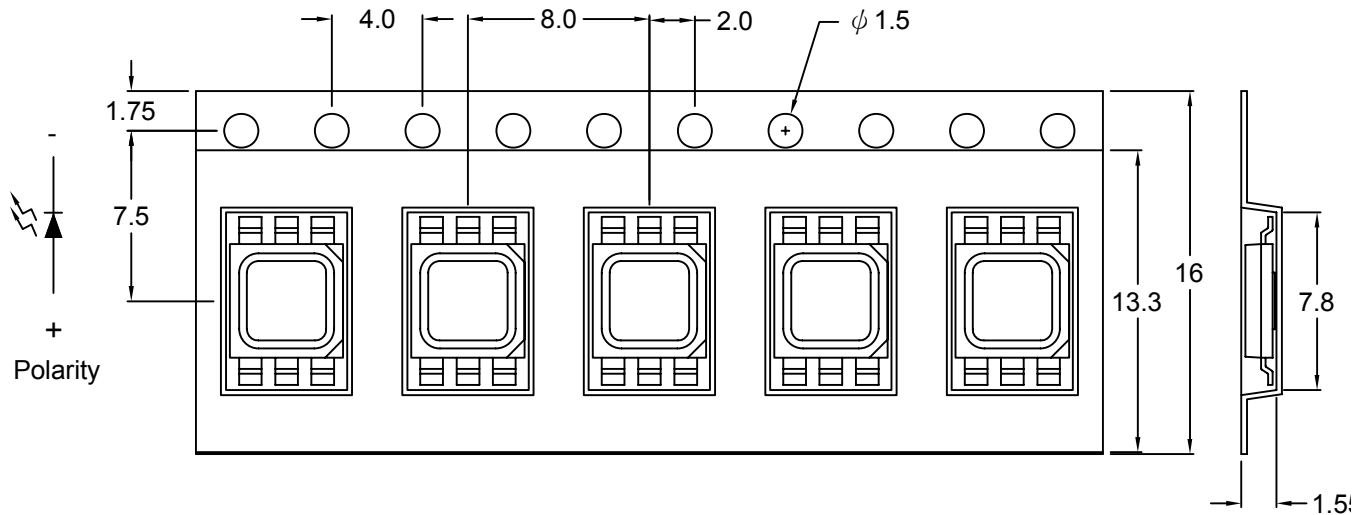


Fig.5 Relative Intensity vs. Wavelength



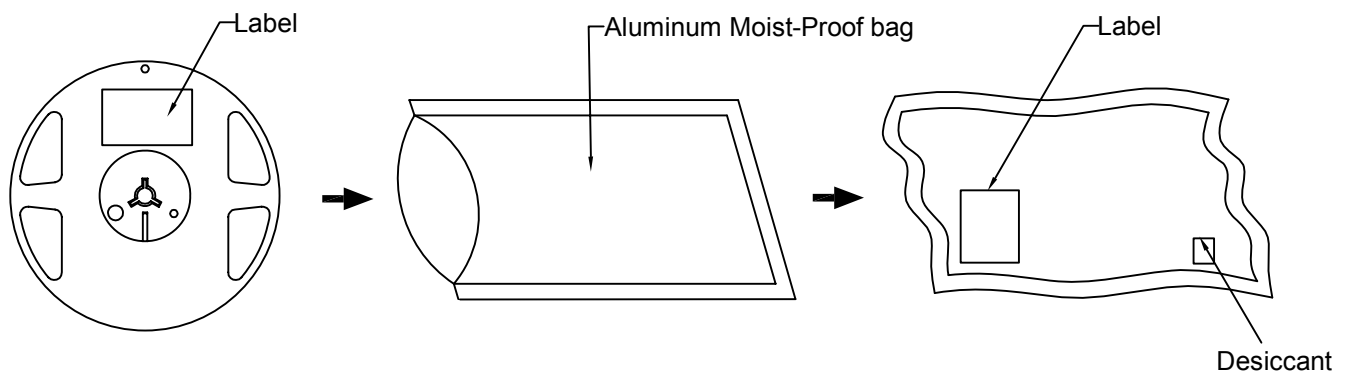
Carrier Type Dimensions

Loaded quantity 2000 PCS per reel



Note : The tolerances unless mentioned is $\pm 0.2\text{mm}$.

Packing Specifications



Label Explanation

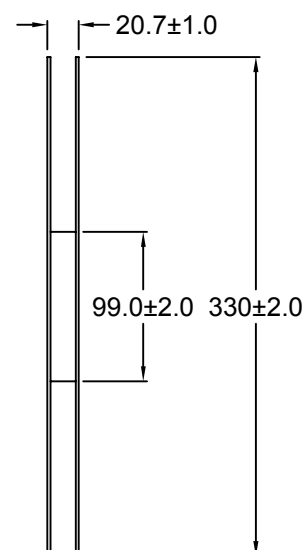
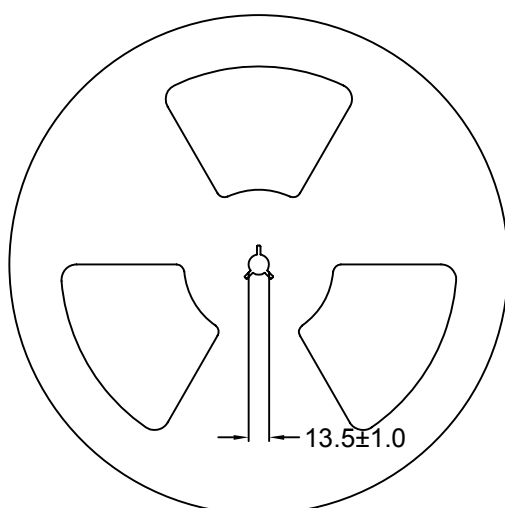
		LIGITEK ELECTRONICS CO., LTD.
PART :	LGXR-521E-T350	
LOT :	GS11380168	
QTY(PCS):	2000	
BIN/HUE :	N50P00	 VF:1.8-3.0

BIN : Luminous Intensity

HUE :Dominant Wavelength

VF : Forward Voltage

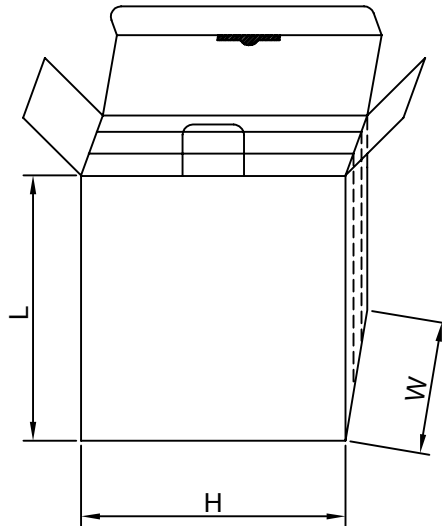
Reel Dimensions



Box Explanation

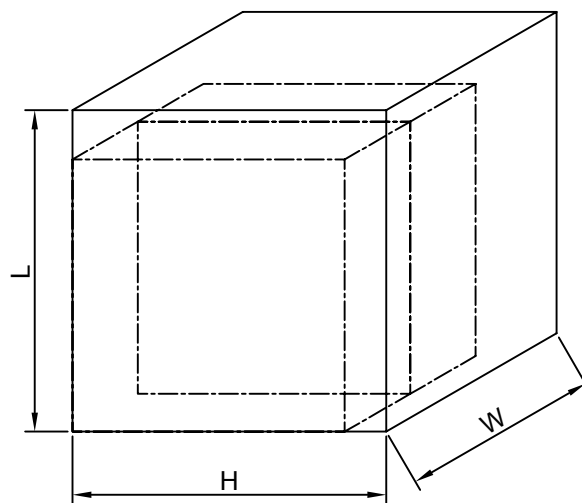
1. 3 BAG / INNER BOX

2. INNER BOX SIZE : L X W X H 36cm X 10cm x 36cm



3. 2 INNER BOXES / CARTON

4. CARTON SIZE : L X W X H 41.5cm X 26cm x42.5cm



Reliability Test:

(1)Test items and results

Classification	Test Item	Test Condition	Sample Size
Endurance Test	Operating Life Test	1.Ta=Under Room Temperature As Per Data Sheet Maximum Rating. 2.If=350mA 3.t=1000 hrs	22
	High Temperature Storage Test	1.Ta=105°C±5°C 2.t=500 hrs	22
	Low Temperature Storage Test	1.Ta=-40°C±5°C 2.t=1000 hrs	22
	High Temperature High Humidity Storage Test	1.IR-Reflow In-Board, 2 Times 2.Ta=85°C±5°C 3.RH=90%~95% 4.t=500hrs±2hrs	22
Environmental Test	Thermal Shock Test	1.IR-Reflow In-Board,2 times 2.Ta=105°C ±5°C & -40°C±5°C (30min) (30min) 3.total 100 cycles	22
	Reflow Soldering Test	1.T.Sol=260°C±5°C 2.Dwell Time= 10 Max.	22
	Temperature Cycling	1.105°C ~ 25°C ~ -40°C 30mins 15mins 30mins 2.100 Cycles	22

(2)Criteria for judging the damage

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	Vf	If=350mA	-	U.S.L x1.2
Reverse Current	Ir	Vr=5V	-	U.S.L x2.0
Luminous Intensity	Iv	If=350mA	L.S.L x 0.7	-