

<b>Order code</b>	<b>Manufacturer code</b>	<b>Description</b>
55-1998	LCXRGB-501E	LED RGB 350MA (RC)

	Page 1 of 10
The enclosed information is believed to be correct, Information may change without notice due to product improvement. Users should ensure that the product is suitable for their use. E. & O. E.	Revision A 20/02/2007



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RGB Power Light LED

## LGXRGB-501E

# DATA SHEET

DOC. NO : QW0905-LGXRGB-501E#

DATE : 06 - Feb - 2007

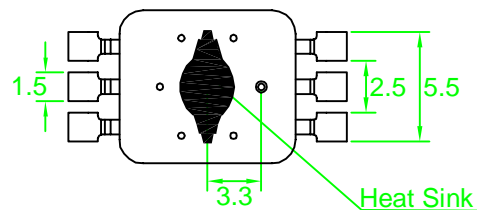
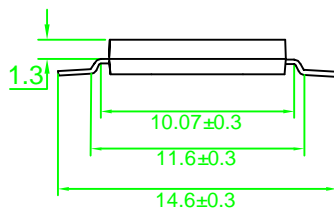
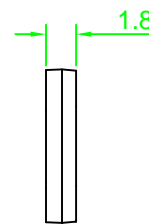
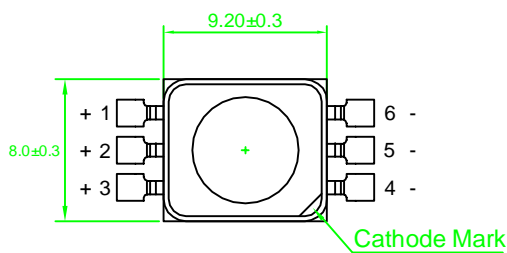
## Features

- \*. Three chip(color) in one package for High Flux LED.
- \*. Various colors for choice.
- \*. More Energy Efficient than Incandescent and most Halogen lamps.
- \*. Low voltage DC operated..
- \*. Instant light(less than 100 ns).
- \*. Independent control of each color.
- \*. No UV.
- \*. IR reflow process compatible.

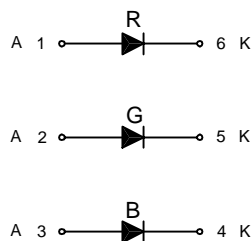
## Typical Applications

- \*. LCD Backlights / Light Guides.
- \*. Commercial and Residential Architectural lighting.
- \*. Mini-accent / Uplighters / Downlighters / Orientation lighting
- \*. Fiber Optic Alternative / Decorative / Entertainment lighting.
- \*. Security / Garden lighting.
- \*. Sign and channel Letter.

## Dimension



(Bottom)



1. Anode Red
2. Anode Green
3. Anode Blue
4. Cathode Blue
5. Cathode Green
6. Cathode Red

Note:1.All dimension are in millimeter tolerance is  $\pm 0.25$ mm unless otherwise noted  
 2.Specifications are subject to change without notice

## Absolute Maximum Ratings at Ta=25

Parameter	Symbol	Ratings	UNIT
		White	
DC Forward Current for each color	IF	350	mA
Total Power Dissipation	PD	3.92	W
Peak pulse current Duty 1/10@10KHz	IFP	500	mA
LED junction Temperature	Tj	125	
Reverse Current(VR=5V)	Ir	100	μ A
Storage Temperature	Tstg	-40 ~ +120	
Operating Temperature	Topr	-40 ~ +100	
Manual Soldering Time at 260°C(Max)	Tsol	5	seconds

## . Luminous Flux Characteristics at 350mA (Ratings At 25 Ambient)

PART NO	Emission Color	Luminous Flux @350mA(lm)			Units
		Min.	Typ.	Max.	
LGXRGB-501E	Red	13.9	23.5	----	lm
	Green	30.6	45	----	
	Blue	6.3	10.7	----	



**. Forward Voltage Characteristics at 350mA**

(Ratings At 25 Ambient)

PART NO	Emission Color	Vf			Units
		Min.	Typ.	Max.	
LGXRGB-501E	Red	2.0	2.5	3.2	V
	Green	3.0	3.6	4.0	
	Blue	3.0	3.6	4.0	

Note : Forward Voltage is measured with an accuracy of ±0.1V

**. Dominant Wavelength Characteristics at 350mA**

(Ratings At 25 Ambient)

PART NO	Emission Color	D			Units
		Min.	Typ.	Max.	
LGXRGB-501E	Red	619	----	629	nm
	Green	520	----	525	
	Blue	465	----	470	

**. Temperature Coefficient Of Forward Voltage&Thermal Resistance Junction To Board Characteristics at 350mA**

(Ratings At 25 Ambient)

PART NO	Emission Color	VF/ ΔT		Rth,j-B	
		Typ.	Units	Typ.	Units
LGXRGB-501E	Red	-2	mV/°C	18	°C/W
	Green				
	Blue				

**. Emission Angle Characteristics at 350mA**

(Ratings At 25 Ambient)

PART NO	Emission Color	Lambertian	Units
LGXRGB-501E	Red	120	Degrees
	Green		
	Blue		



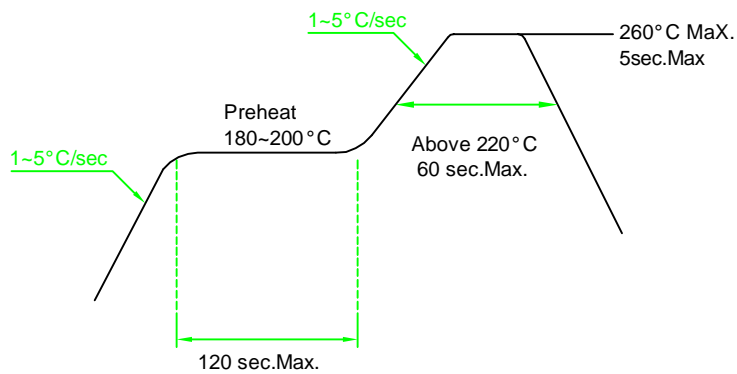
Recommended Soldering Conditions

Soldering Conditions:

The LEDs can soldered in place using the reflow soldering method.

	Reflow Soldering (Lead-free Soder)	Hand Soldering
Pre-heat	180 ~ 200 °C	
Pre-heat time	120sec. Max.	
Peak temperature	260°C Max.	Temperature Soldering Time 260
Soldering time	10 sec. Max.	5 sec Max one time only.
Condition	refer to Temperature - profile	

PB-Free Reflow Solder



Reflow Soldering should not be done more than two times.

Fig.1 Forward current vs. Forward Voltage

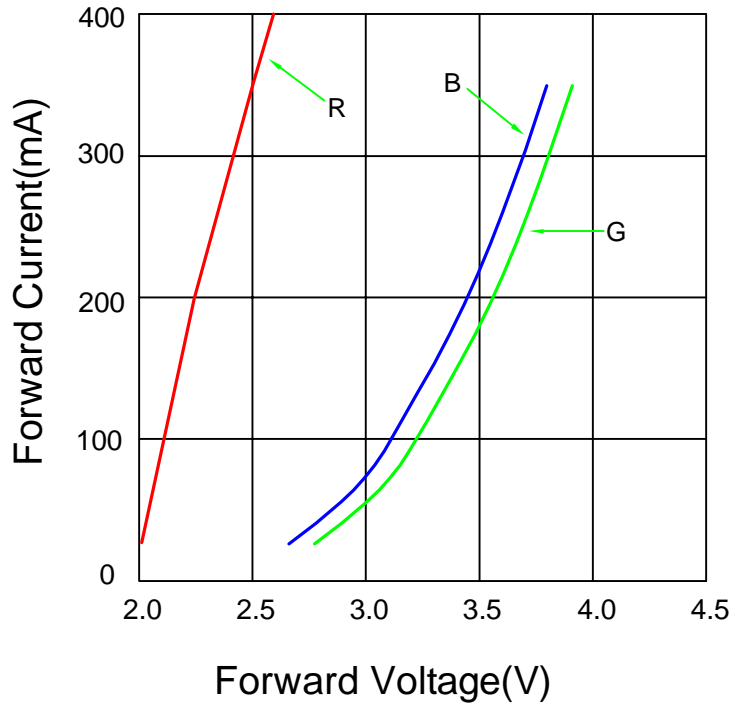


Fig.2 Operating current vs. Ambient Temperature

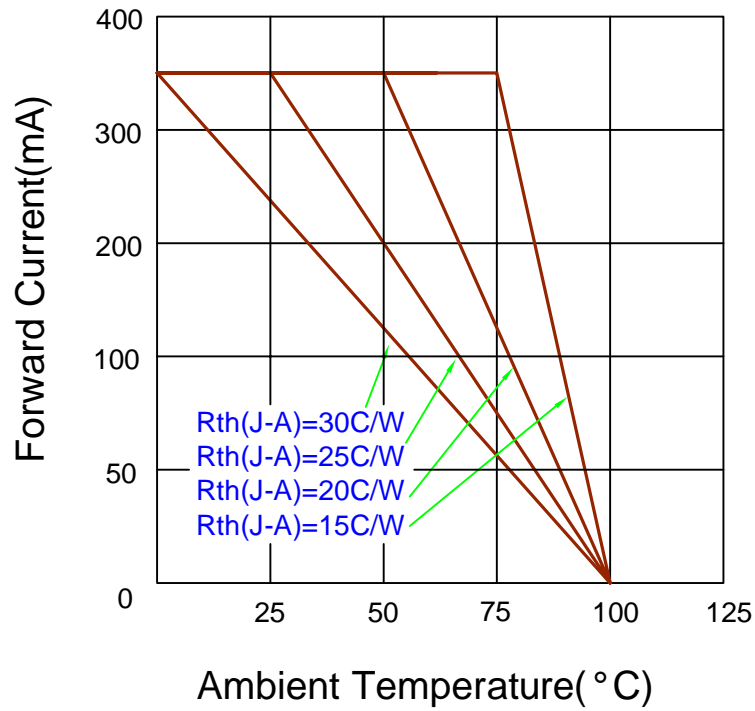




Fig.5 Luminous Spectrum(Ta=25 )

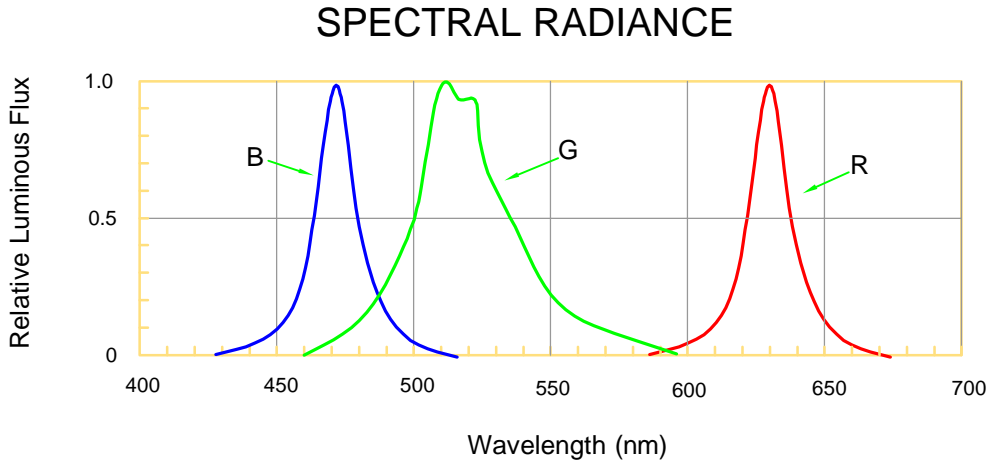
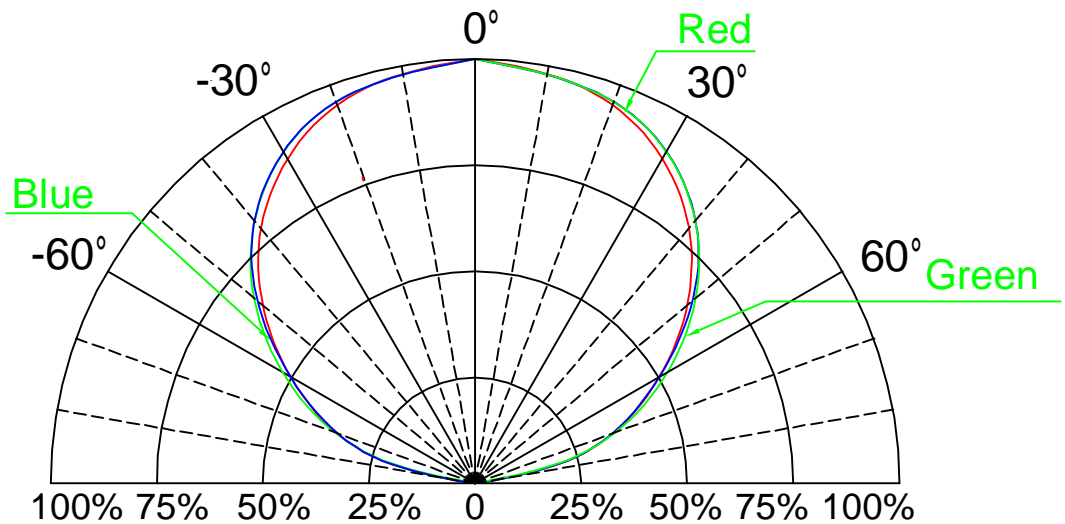


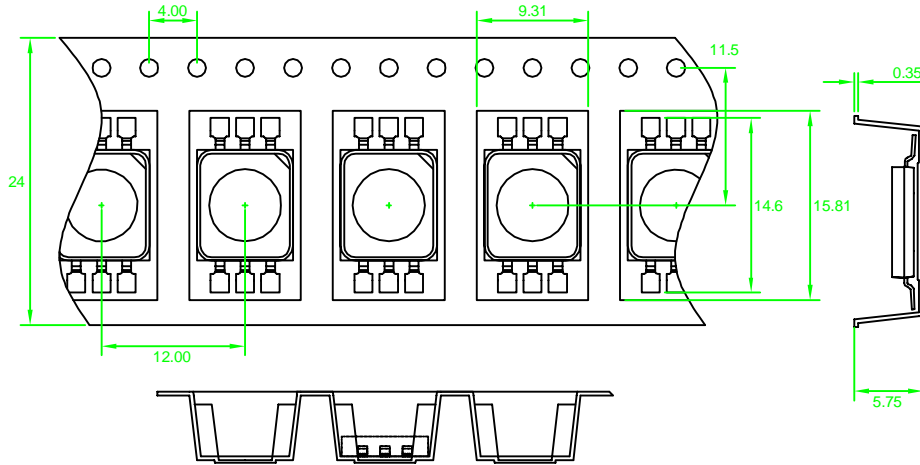
Fig.6 Directivity Radiation







# Package Specifications





## Reliability Test

Item	Description	Stress Condition	Test Duration
HTOL	High Temperature Operation Life	100°C, Max. IF	1000 hours
RTOL	Room Temperature Operation Life	25°C, Max. IF	1000 hours
LTOL	Low Temperature Operation Life	-40°C, Max. IF	1000 hours
WHTOL	Wet High Temperature Operation Life	85°C/60%RH, Max. IF	1000 hours
TC	Temperature Cycling	40/110°C, 30min dwell, <5min trans.	200 cycles
TS	Thermal Shock	40/110°C, 20min dwell, <20min trans.	200 cycles
HTSL	High Temperature Storage Life	120°C	1000 hours
LTOL	Low Temperature Storage Life	-40°C	1000 hours
SHR	Solder Heat Resistance	260±5°C, 5secs	
MS	Mechanical Shock	1500G, 0.5msec pulse, 5 shocks each 6 axis	
ND	Natural Drop	On concrete from 1.2m, 3times	
RV	Random Vibration	6G RMS from 10 to 2KHz, 10mins/axis	
VVF	Variable Vibration Frequency	10-2000-10Hz, 20G 1 min, 1.5mm, 3timesx/axis	