1W Power Light LED

LGSV-311E

DATA SHEET

DOC. NO : QW0905-LGSV-311E#

DATE : 04 - Jun - 2007

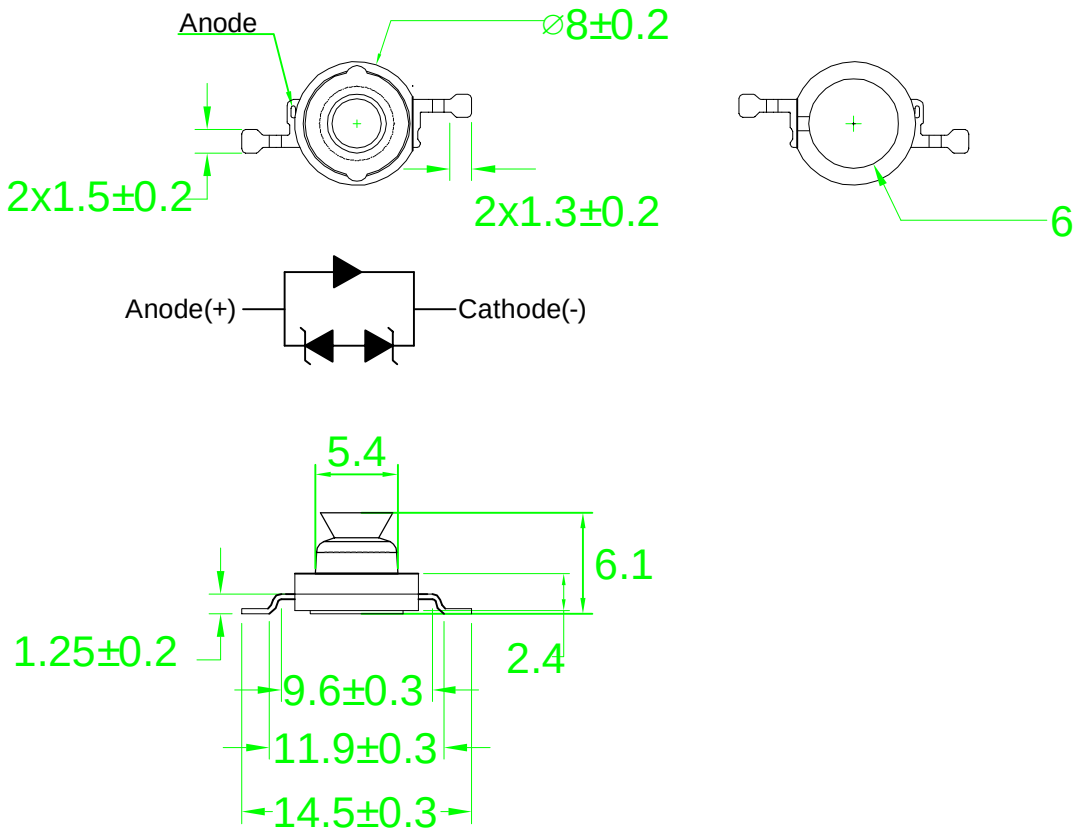
Features

*. High Flux per LED
*. Very long operating life(up to 100k hours).
*. Available in White.
*. 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.
*. Superior ESD protection..
*. Soldering methods: hand Soldering.

Typical Applications

*. Reading Light (car,bus,aircraft)
*. Portable(flashlight,bicycle).
*. LCD Backlights / Light Guides.
*. Automotive Exterior (Stop-Tail-Tum,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 / Undershelf / Task lighting.
*. Traffic signaling / Beacons / Rail crossing and Wayside lighting.
*. Decorative.
*. Sign and channel Letter.

Dimension



Note:1.All dimension are in millimeter
2.Specifications are subject to change without notice

Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	Ratings	UNIT
		Warm White	
DC Forward Current	I_F	350	mA
Power Dissipation	PD	1.4	W
Peak pulse current Duty 1/10@10KHz	I_{FP}	500	mA
LED junction Temperature	Tj	125	℃
Reverse Current(VR=5V)	Ir	100	μA
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.	lm
LGSV-311E	Warm White	30.6	39.8	----	

Note : White emitters are built with InGaN.

. Forward Voltage Characteristics at 350mA

(Ratings At 25℃ Ambient)

PART NO	Emission Color	Vf			Units
		Min.	Typ.	Max.	
LGSV-311E	Warm White	3.0	3.6	4.0	V

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

. Color Tempeature Characteristics at 350mA

(Ratings At 25℃ Ambient)

PART NO	Emission Color	CCT			Units
		Min.	Typ.	Max.	
LGSV-311E	Warm White	2800	----	3800	K

Note : CCT±5% tester tolerance.

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

(Ratings At 25℃ Ambient)

PART NO	Emission Color	ΔVF/ΔT		Rth,j-B	
		Typ.	Units	Typ.	Units
LGSV-311E	Warm White	-2	mV/°C	18	°C/W

. Emission Angle Characteristics at 350mA

(Ratings At 25℃ Ambient)

PART NO	Emission Color	Side emitting θ_{PEAK}(Typ.)	Units
LGSV-311E	Warm White	±80	Degrees

Brightness Code For High Power LED

Group	Luminous flux(lm)	
	Min	Max
F21	30.6	39.8
F22	39.8	51.7
F23	51.7	67.2

Note : Flux is measured with an accuracy of ±10%

Fig.1 Forward current vs. Forward Voltage

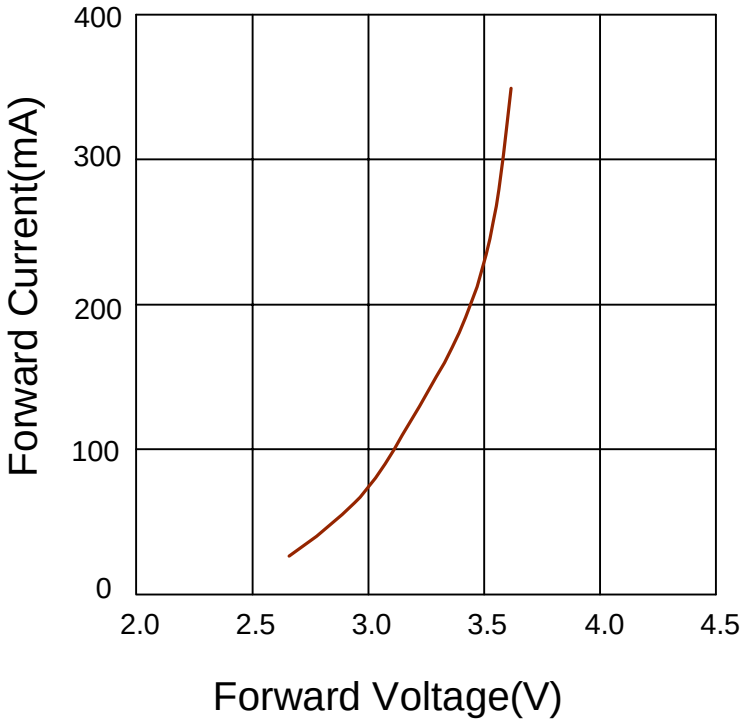


Fig.2 Operating current vs. Ambient Temperature

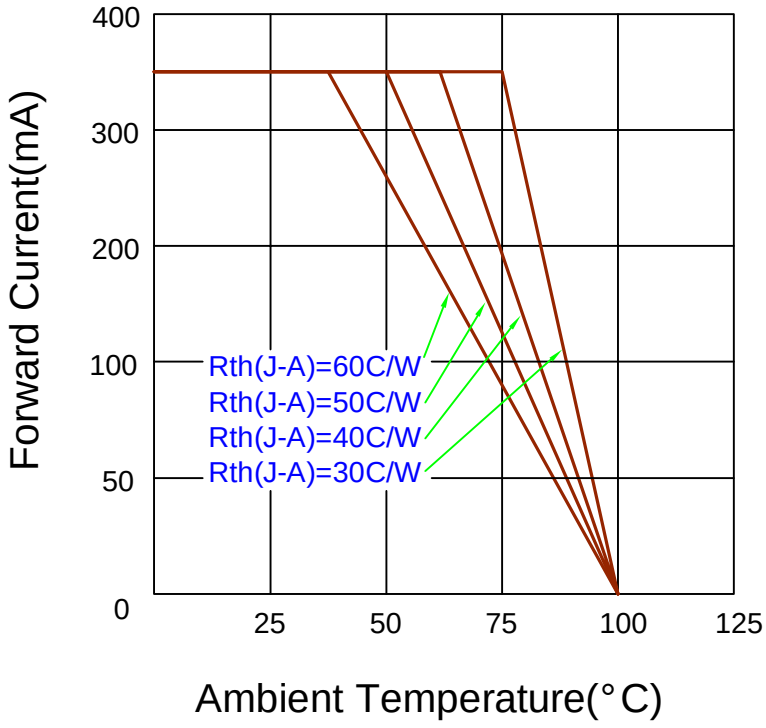


Fig.3 Forward current vs. Luminous Flux

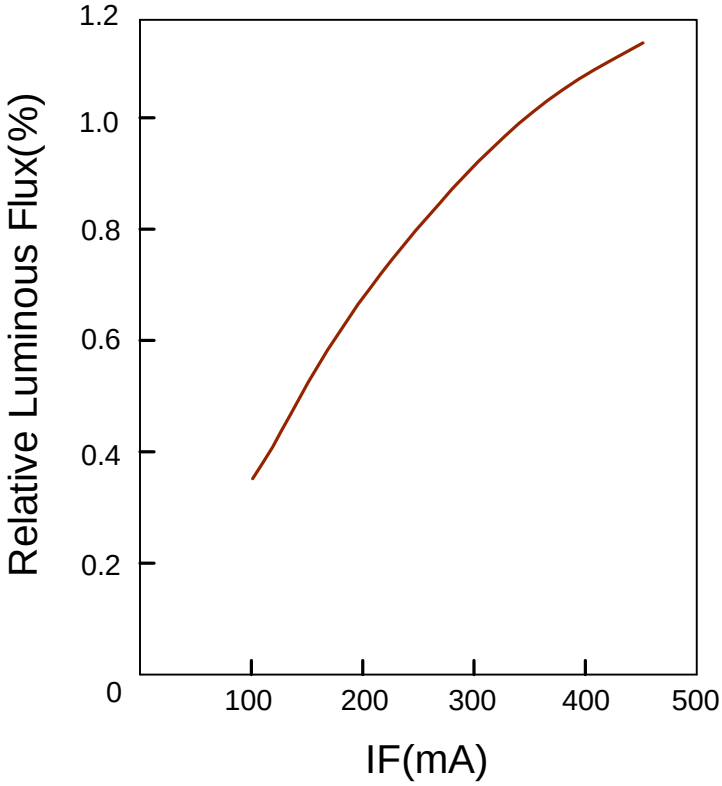


Fig.4 Junction Temperature vs. Forward Voltage

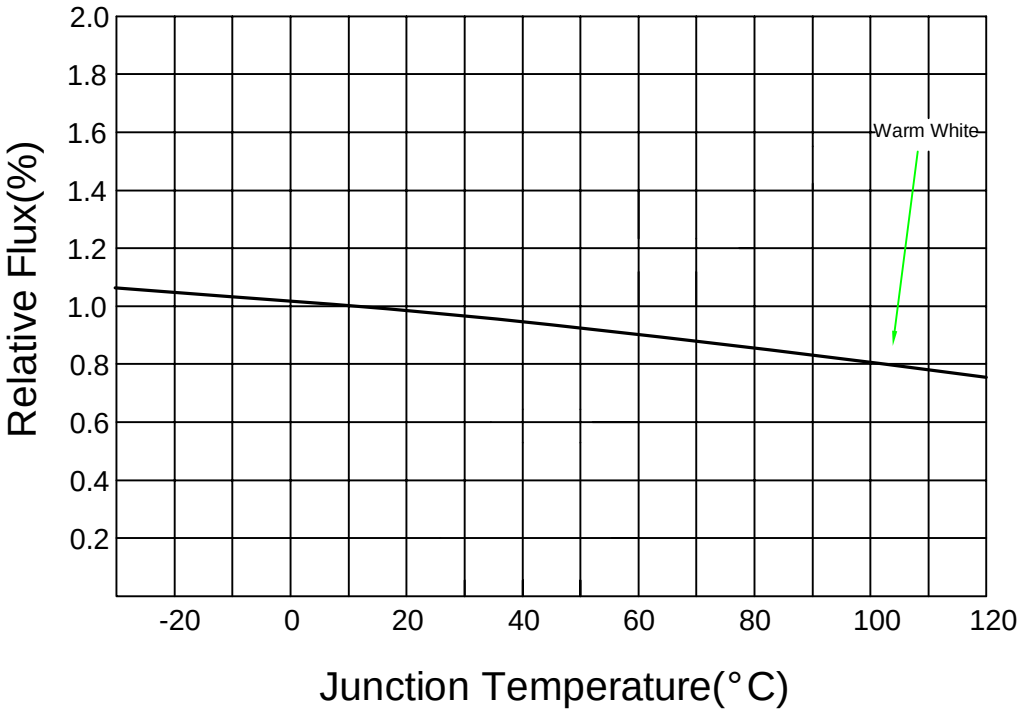


Fig.5 Luminous Spectrum(Ta=25℃)

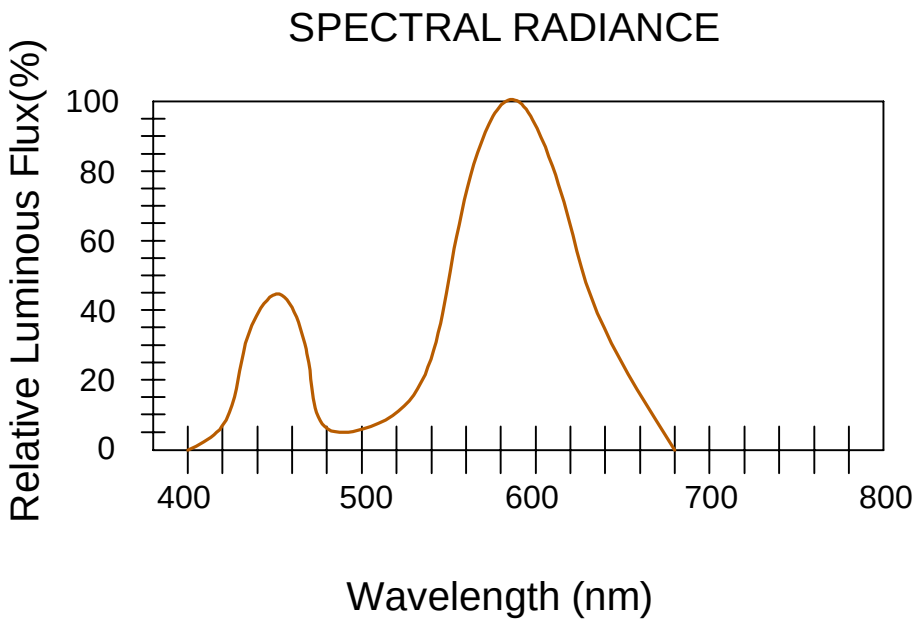
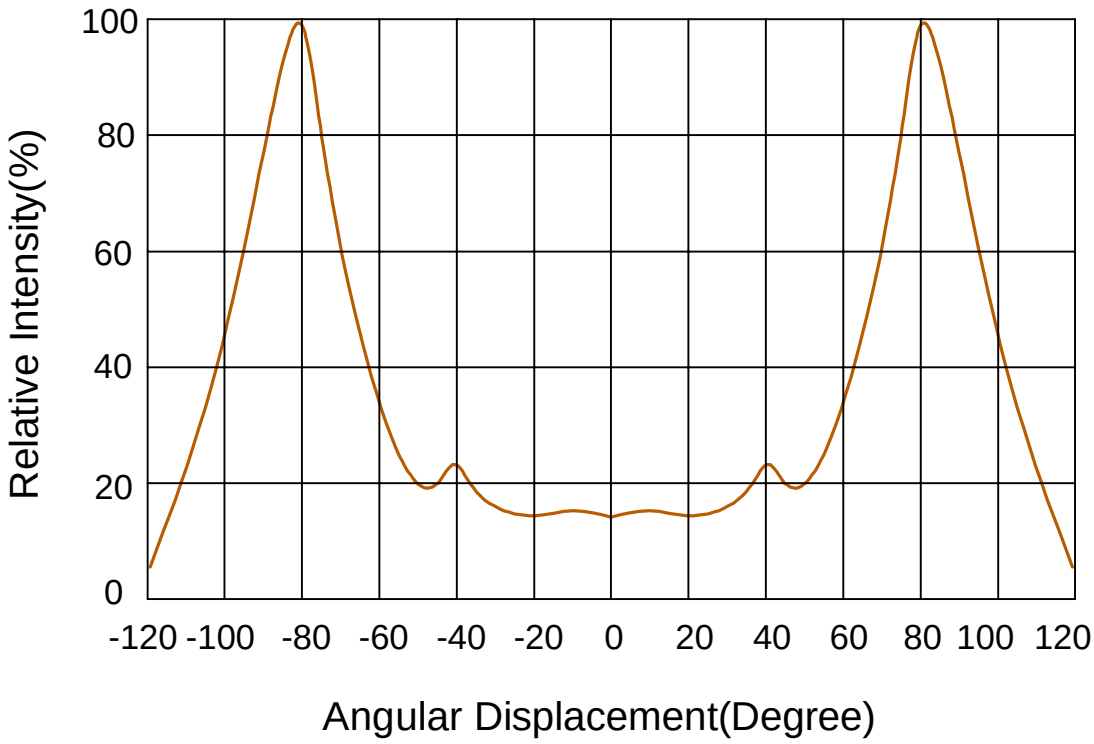
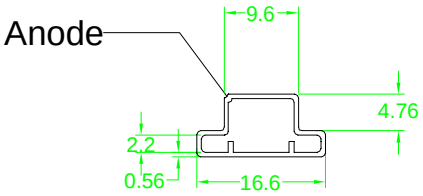
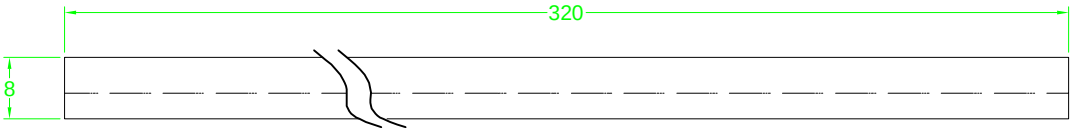


Fig.6 Directivity Radiation



Package Specificatious





1. All dimensions are in mm.
2. There are 35 pcs emitters in a tube.
3. There are 90 tubes in a inner box.

Reliability Test

Item	Description	Stress Condition	Test Duration
RTOL	Room Temperature Operation Life	25°C, Max. I_F	1000 hours
WHT	Wet High Temperature	85°C/85%RH	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, 3xtimes	
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	

Note :

Failure criteria:

Electrical failures

V_F shife >= 10%

I_R < 50uA@Vr = 5v

Ligitek output Degradation

%I_V shift >= 30%@1000hrs or 200cycle

Visual failures

Broken or damaged pockage or lead

Dimension out of tolerance