LUCKY LIGHT

5mm Full Color Blinking Type LED

Technical Data Sheet

Part No: LL-F50SRGBC2E-F1

Features

- ◇Single lamp with 3 original color (red ,green ,and blue).
- ◇Triple chips embedded
- ◇Multiple color compose full spectrums
- ◇Electricity control IC embedded
- ◇Fancy, fun, hottest in the market.
- ◇Lens size with 5mm / 8mm / 10mm options
- ◇Viewing Angles 60°..
- ◇Operating voltage range : 4.5V-10V DC.
- ◇Blinking frequency : 0.25Hz
- ◇Frequency tolerance : ±20%
- ◇ Pb free
- ◇ The product itself will remain within RoHS compliant version.

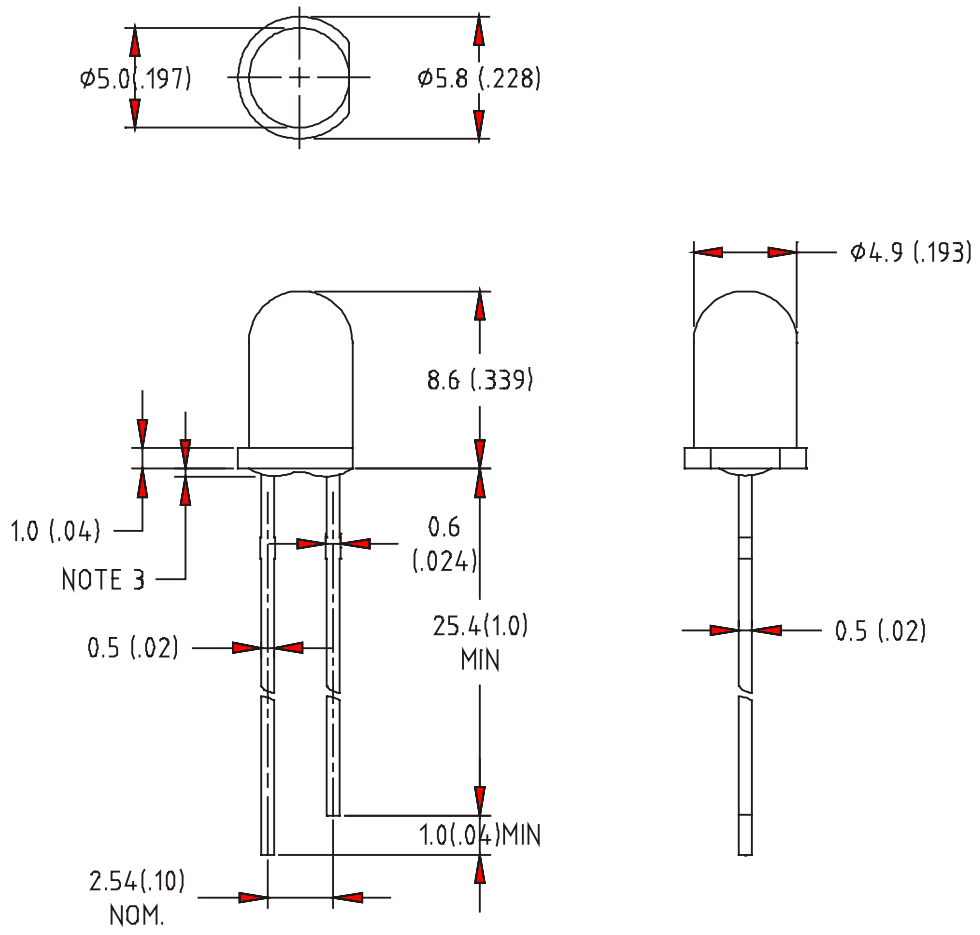
Benefits:

- ◇ New trend creations
- ◇ Low energy consumptions
- ◇ Low maintenance costs
- ◇ High application design flexibility
- ◇ High reliability

Applications

- ◇Toys
- ◇Miniature key chains
- ◇Effect Lights.
- ◇Display / decoration lights .
- ◇Electronic displays and signals
- ◇Interior decoration lights.
- ◇Indicator lights.
- ◇Solar energy lights / garden lights

Package Dimension:



Part No.	Material	Lens Color	Source Color
LL-F50SRGBC2E-F1	AlGaInP	Water Clear	Super Bright Red
	InGaN		Pure Green
	InGaN		Blue

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(.010")mm unless otherwise noted.
3. Protruded resin under flange is 1.0mm(.04") max
4. Specifications are subject to change without notice.

Absolute Maximum Ratings at Ta=25℃

Parameter	Symbol	Max	Unit
Power Dissipation	PD	405	mW
Peak Forward Current (1/10 Duty Cycle, 0.1ms Pulse Width)	IFP	90	mA
Reverse Voltage	VR	5	V
Operating Temperature Range	Topr	-40℃ to +85℃	
Storage Temperature Range	Tstg	-40℃ to +100℃	
Lead Soldering Temperature [4mm(.157”) From Body]	Tsld	260℃ for 5 Seconds	

Electrical Optical Characteristics at Ta=25℃

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Viewing angle	2θ1/2	---	30	---	Deg	V=4.5V
Operating Voltage	Vdd	---	3.0	15	V	
Turn on time	Duty	---	1/20	---	ms	
Blinking Frequency	Fled	---	0.25	---	Hz	V=4.5V
Frequency tolerance	Fled	---	±20%	---	Hz	V=4.5V
Dominant Wavelength	λd	Super Bright Red	625	---	nm	V=4.5V
		Pure Green	525	---	nm	
		Blue	470	---	nm	
Luminous Intensity (Note 1)*	IV	Super Bright Red	900	---	mcd	V=4.5V
		Pure Green	2000	---	mcd	
		Blue	1000	---	mcd	

Notes:

1.Luminous Intensity Measurement allowance is±10%

2. $\theta_{1/2}$ is the off-axis angle at which the luminous intensity is half the axial luminous intensity

Reliability

1) Test Items and Results

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resistance to Soldering Heat	JEITA ED-4701 300 302	Tsld=260±5℃,10sec 3mm from the base of the epoxy bulb	1 time	0/100
Solderability	JEITA ED-4701 300 303	Tsld=235±5℃,5sec(using flux)	1time over 95%	0/100
Themal Shock	JEITA ED-4701 300 307	0℃~100℃ 15sec,15sec	100 cycles	0/100
Temperature Cycle	JEITA ED-4701 100 105	-40℃~25℃~100℃~25℃ 30min,5min,30min,5min	100 cycles	0/100
Moisture Resistance Cylic	JEITA ED-4701 200 203	25℃~65℃~-10℃ 90%RH 24hrs/1cycle	10 cycles	0/100
High Temperature Storage	JEITA ED-4701 200 201	Ta=100℃	1000hrs	0/100
Terminal Strength (Pull test)	JEITA ED-4701 400 401	Load 10N (1kgf) 10±1sec	Nonotic eable damage	0/100
Terminal Strength (bending test)	JEITA ED-4701 400 401	Load 5N (0.5kgf) 0° ~90° ~0° bend 2 times	Nonotic eable damage	0/100
Temperature Humidity Storage	JEITA ED-4701 100 103	Ta=60℃,RH=90%	1000hrs	0/100
Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40℃	1000hrs	0/100
Steady State Operating Life		Ta=25℃, IF=30mA	1000hrs	0/100
Steady State Operating Life of High Humidity Heat		Ta=60℃,RH=90% ,IF=30mA	500hrs	0/100
Steady State Operating Life of Low Temperature		Ta=-30℃, IF=20mA	1000hrs	0/100

2)Critera For Judning The Damage

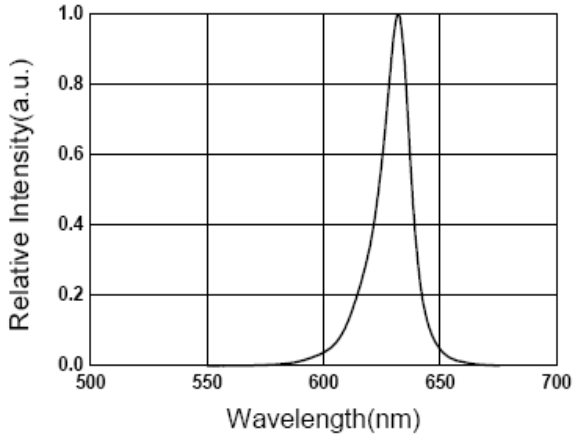
Item	Symbl	Test Conditions	Criteria for Judgement	
			Min	Max
Forward Voltage	VF	I_F=20mA	—	F.V.*)×1.1
Reverse Current	IR	VR=5V	—	F.V.*)×2.0
Luminous Intensity	IV	I_F=20mA	F.V.*)×0.7	—

*)F.V.:First Value

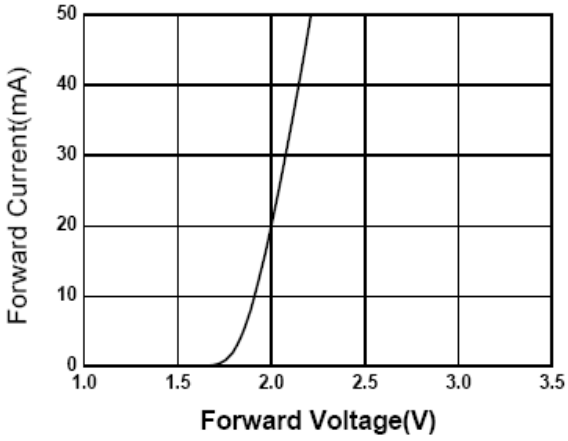
■ Super Bright Red

Typical Electro-Optical Characteristics Curves

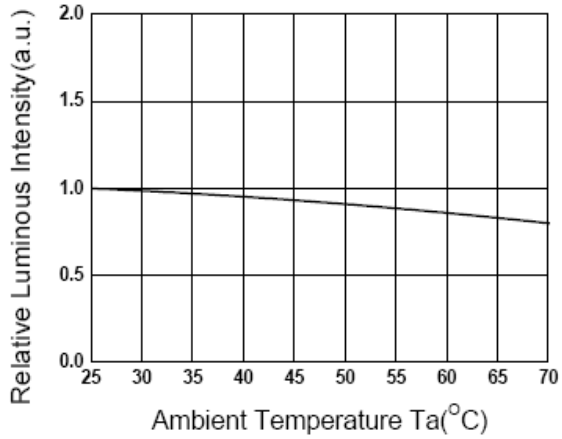
Relative Intensity vs. Wavelength



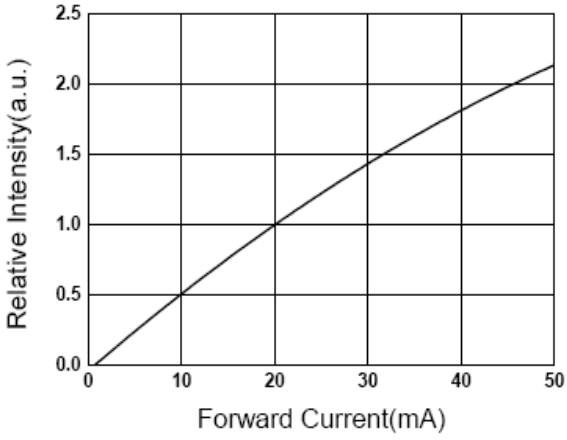
Forward Current vs. Forward Voltage



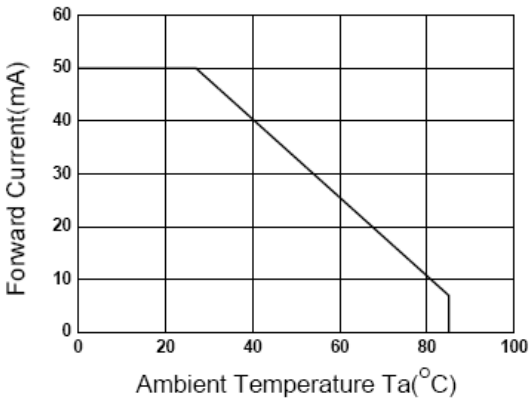
Relative Intensity vs. Ambient Temp



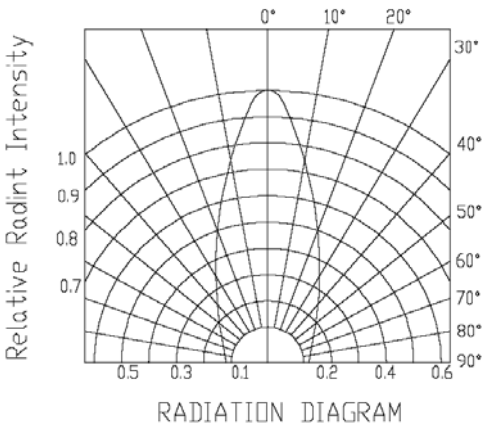
Forward Current vs. Relative Intensity



Forward Current vs. Ambient Temp.



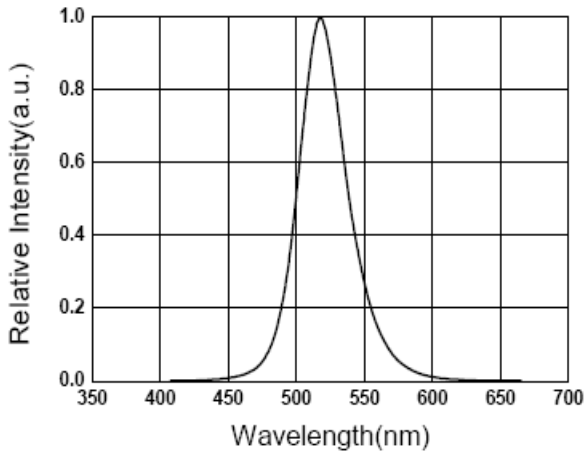
Radiation Diagram Ta=25°C



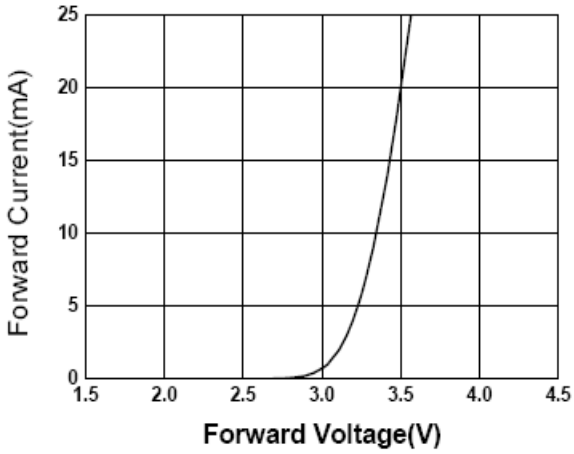
■Pure Green

Typical Electrical / Optical Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

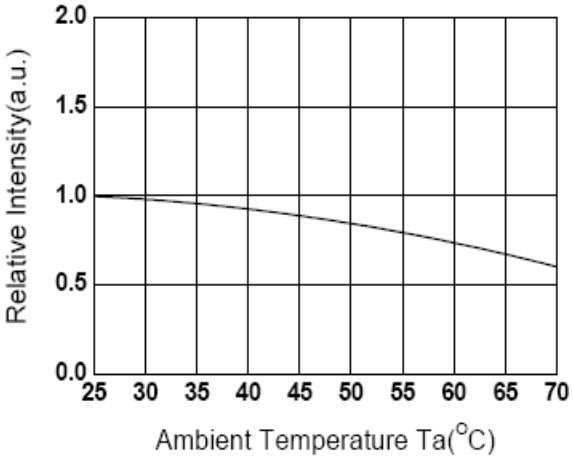
Relative Intensity vs. Wavelength



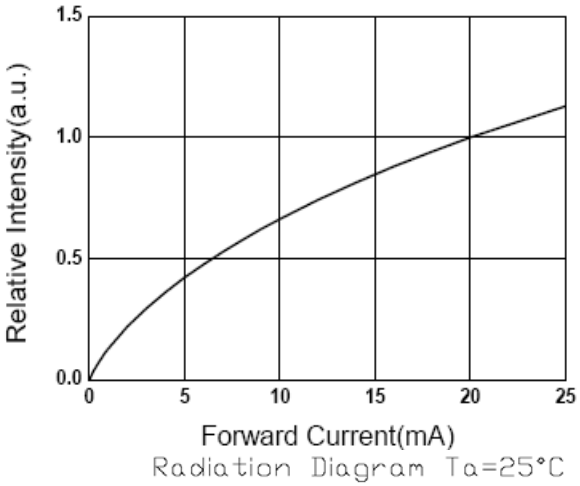
Forward Current vs. Forward Voltage



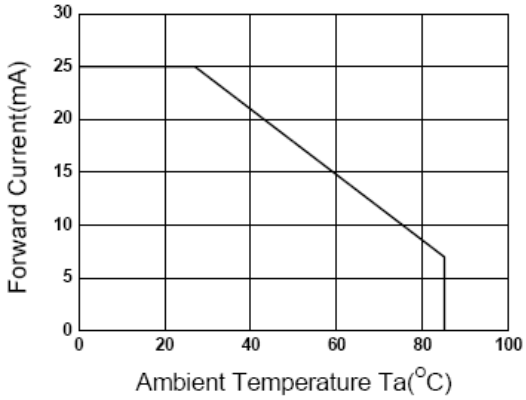
Relative Intensity vs. Ambient Temp

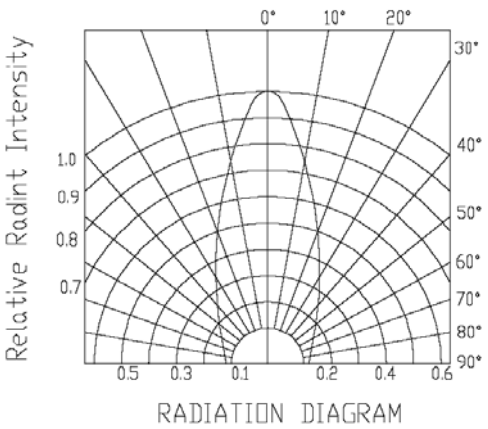


Forward Current vs. Relative Intensity



Forward Current vs. Ambient Temp.

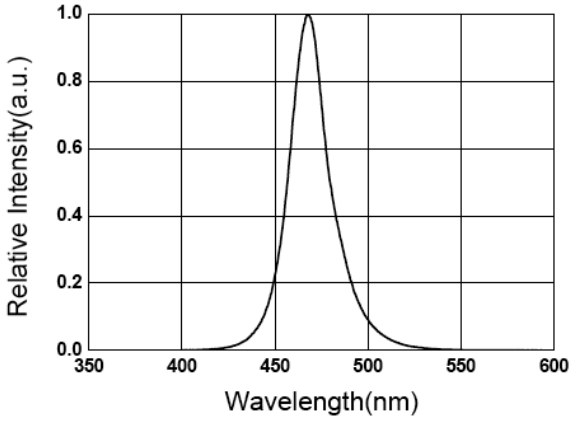




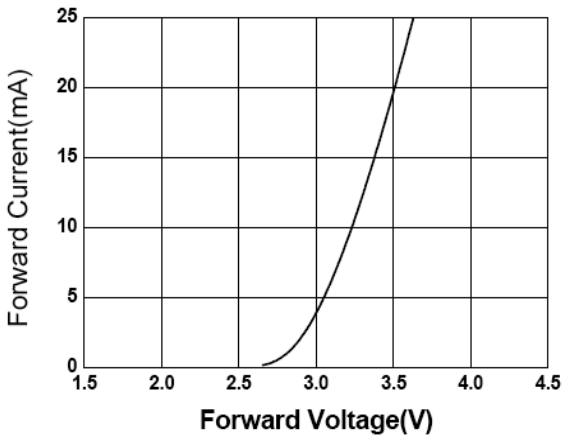
■ Blue

Typical Electrical / Optical Characteristics Curves
(25℃ Ambient Temperature Unless Otherwise Noted)

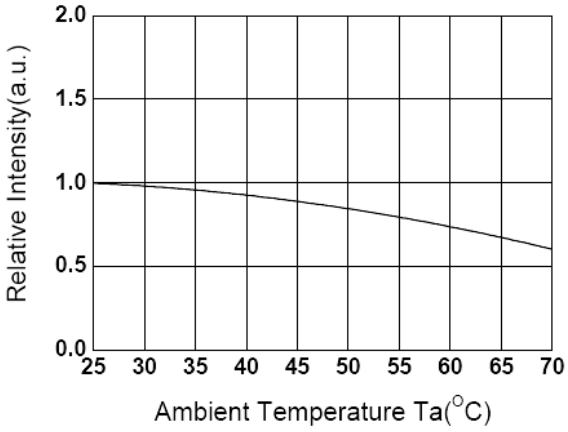
Relative Intensity vs. Wavelength



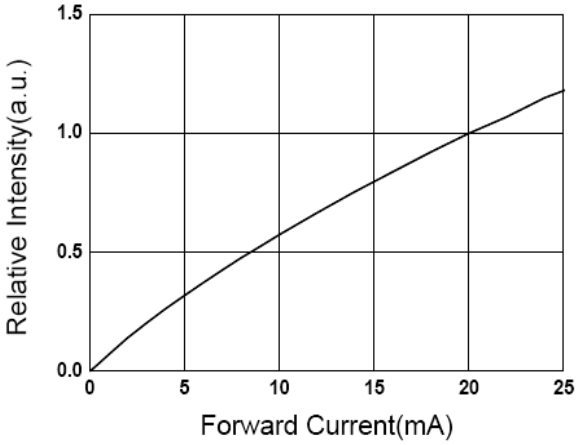
Forward Current vs. Forward Voltage



Relative Intensity vs. Ambient Temp



Forward Current vs. Relative Intensity



Forward Current vs. Ambient Temp.