



LED SPECIFICATION FOR APPROVAL

**CUSTOMER** : \_\_\_\_\_ 合勤科技（无锡）有限公司  
**SUPPLIER P/N** : \_\_\_\_\_ FDL-522SRG-ZC1HQ-CC-L3.5.9  
**CUSTOMER P/N** : \_\_\_\_\_ 15-623-103001B  
**ISSUED DATE** : \_\_\_\_\_ 2010/01/22  
**APPROVED BY** : \_\_\_\_\_



FANTASY ELECTRONICS CO.,LTD  
OFFICE(SUZHOU):6F/06YONGLIN BUILDING NO.1023 RENMIN ROAD SUZHOU  
CITY JIANGSU P.R.C  
TEL:0512-65123368/65241931 FAX:0512-65157459  
EMAIL:SUZHOU@FANTASYLEDS.COM

Spec No: FCSHQ20100122004A

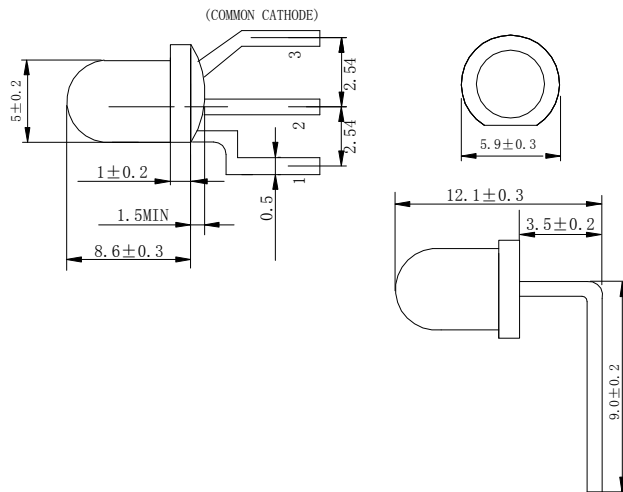
**Features**

- 5mm DIA LED Lamp
- Low Power Consumption
- High Efficiency
- Various Colors and Viewing Angle
- Long Solid State Reliability
- Package: 1000pcs/Packing

**Applications**

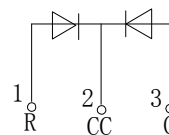
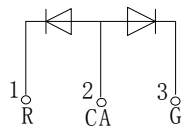
- Indicator

**Package Dimensions**



FDL-522SRG-ZC1HQ-CA-L3.5/9(Common Anode)

FDL-522SRG-ZC1HQ-CC-L3.5/9(Common Cathode)



**Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25\text{mm}$  (.01") unless otherwise noted.
3. Protruded Resin under flange is 1.0mm(0.04") max.
4. Specifications are subject to change without notice.

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**Selection Guide**

Part No	Lens Type	Dice	Emitted Color
FDL-522SRG-ZC1HQ-CC-L3.5/9	Water Clear	GaAsP	Super Red Green

**Electrical / Optical Characteristics At Ta=25°C**

Symbol	Parameter		Super Red	Green	Unit	Test Condition
Iv	Luminous Intensity	MIN.	50.0	40.0	mcd	IF=20mA
		TYP.	100.0	60.0		
2θ1/2	Viewing Angle	TYP.	30	30	deg	IF=20mA
λ Peak	Peak Emission Wavelength	TYP.	631	574	nm	IF=20mA
λ d	Dominant Wavelength	TYP.	625	571	nm	IF=20mA
Δλ	Spectral Line Half-Width	TYP.	20	20	nm	IF=20mA
VF	Forward Voltage	TYP.	2.0	2.1	V	IF=20mA
		MAX.	2.5	2.4		
IR	Reverse Current	MAX.	50	50	μ A	VR 5V

Note:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 optical centerline value

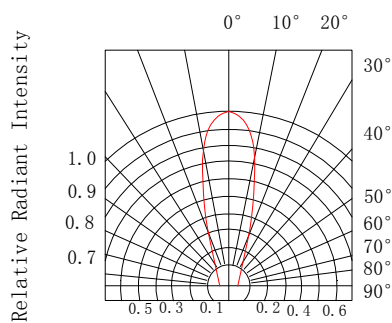
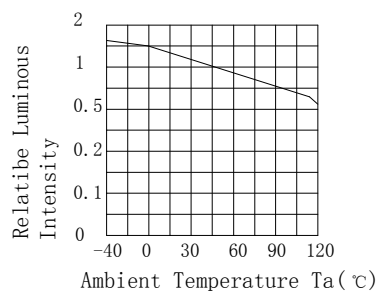
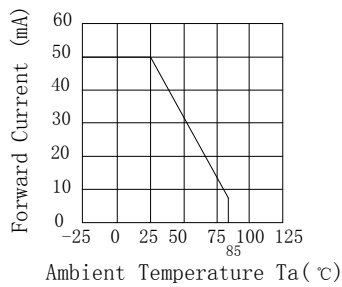
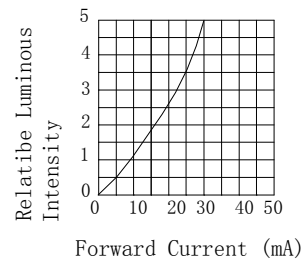
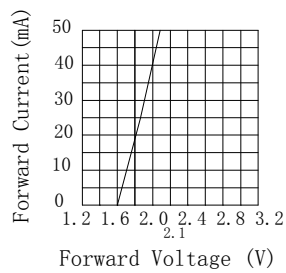
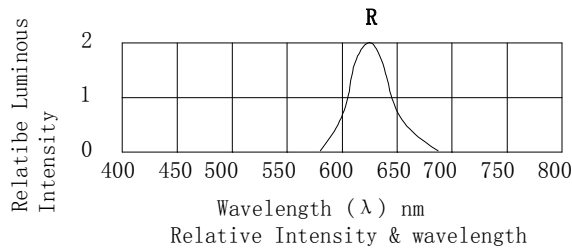
**Absolute Maximum Ratings At Ta=25°C**

Parameter	Green	Super Red	Unit
Power Dissipation	80	80	mW
Peak Forward Current[1]	150	150	mA
Continuous Forward Current	30	30	mA
Reverse Voltage	5	5	V
Operating Temperature Range	-40°C to + 85°C		
Storage Temperature Range	-40°C to + 85°C		
Soldering Condition	260°C For 5 Seconds		

Note:

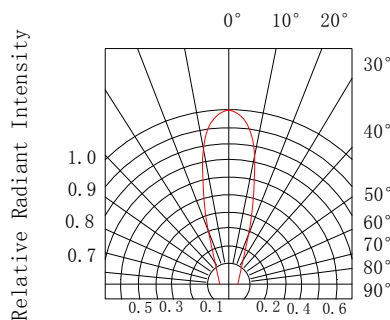
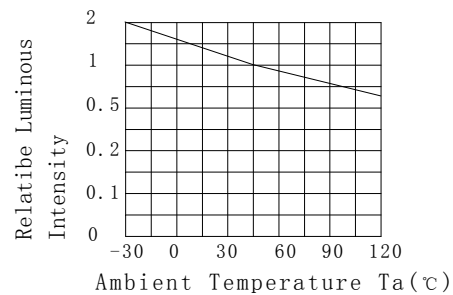
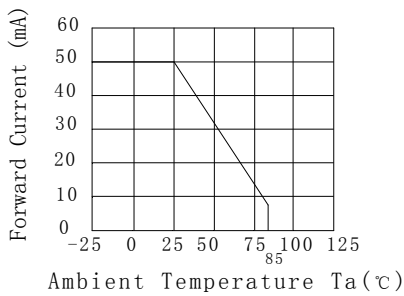
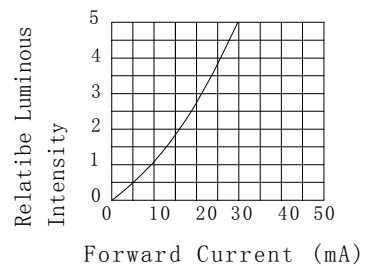
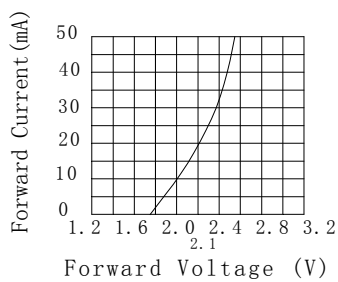
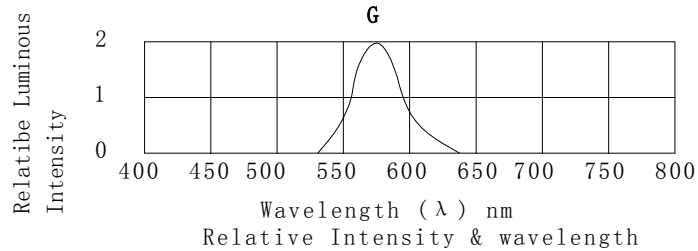
1. 1/10DutyCycle, 0.1ms Pulse Width

**Electrical Optical Characteristics Curves At Ta=25°C**



Radiation Diagram

**Electrical Optical Characteristics Curves At Ta=25°C**



Radiation Diagram

**Notes:**

1. The LEDs should be used within a year.
2. The LEDs should be kept in 5~30°C and 60% RH for less.
3. The LEDs should be used within 24 hours, or else should be kept a 5~30°C and 30% RH or less. And LEDs should be used within 7 days after opening the package.

**Reliability Test Items Conditions**

Classification	Test Item	Test Conditions	Test hours	Result
Endurance Test	Opertion Life	Connect with a power if=20mA Ta=Under room temperature	1000Hrs	0/20
	Hige Temperature High Humidity	Ta=+ 65°C±5°C RH=90%-95%	240Hrs	0/20
	Hige Temperature Storage	High Ta=+ 85°C±5°C	1000Hrs	0/20
	Low Temperature Storage	Low Ta=-35°C±5°C Test time=1000hrs	1000Hrs	0/20
Environmental Test	Temperature Cycling	-45°C ~+105°C 15min 5min 15min	300 Cycles	0/20
	Thermal Shock	-35°C ~±5°C ~+85°C ~±5°C 5min 10sec 5min	300 Cycles	0/20
	Solder Resistance	Preheating: 120°C-150°C,within 2 minutes. Operation heating : 260°C (Max.),within5 seconds(Max.)	5Cycles	0/20

**Judgment criteria of fialure for the reliability**

Measuring items	Symbol	Measuring conditions	Judement criteria for failure
Forward voltage	V <sub>F</sub> (V)	I <sub>F</sub> =20mA	Over U×1.2
Rvevrse current	I <sub>R</sub> (μA)	V <sub>R</sub> =5V	Over U×2
Luminous intensity	I <sub>v</sub> (mcd)	I <sub>F</sub> =20mA	Below S×0.5

Note: 1.U means the upper limit of specified characteristics. S means initial value.

2.Meansurment shall be taken between 2 hours after the test pieces have been returnde to normal ambient cnditions after completion of each test.