

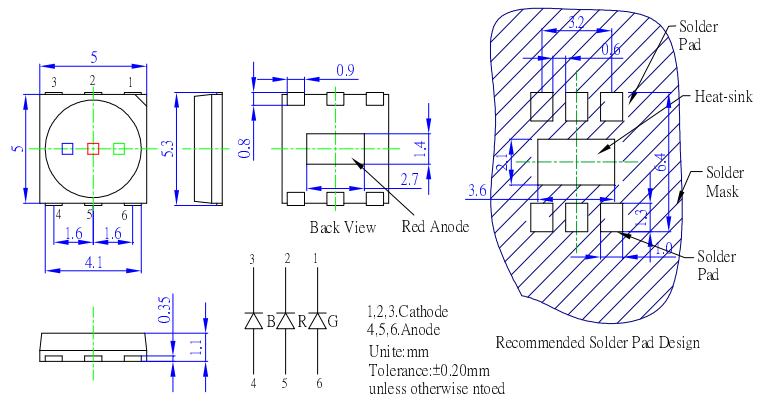
■Features

- Highest Luminous Flux
- Super Energy Efficiency
- Long Lifetime Operation
- Superior UV Resistance
- Water Clear Type

■Applications

- Mobile Phone Flash
- Automotive Interior/Exterior Lighting / Signal Lighting
- Architectural Lighting
- LCD TV / Monitor Backlight
- Projector Light Source / Traffic Signals / Task Lighting
- Decorative / Pathway Lighting / Household Applications

■Outline Dimension



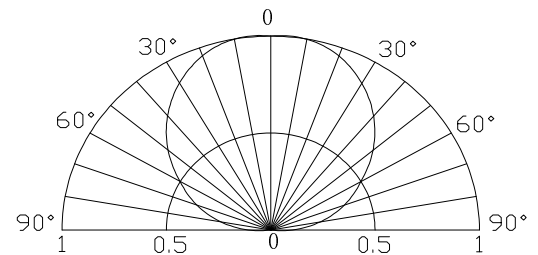
■Absolute Maximum Rating

(Ta=25°C)

Item	Symbol	Value		Unit
		Red	Green/Blue	
DC Forward Current	I _F	200	200	mA
Pulse Forward Current*	I _{FP}	250	250	mA
Reverse Voltage	V _R	5	5	V
Power Dissipation	P _D	600	800	mW
Operating Temperature	Topr	-30 ~ +85		°C
Storage Temperature	Tstg	-40 ~ +100		°C
Lead Soldering Temperature	Tsol	260°C/10sec		-

*Pulse width Max.10ms Duty ratio max 1/10

■Directivity



■Electrical -Optical Characteristics

(Ta=25°C)

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Voltage	V _F (R)	I _F =150mA	2.0	2.5	3.0	V
	V _F (B/G)	I _F =150mA	3.0	3.3	4.0	V
DC Reverse Current	I _R	V _R =5V	-	-	10	μA
Domi. Wavelength	λ _D (Red)	I _F =150mA	620	625	630	nm
	λ _D (Green)	I _F =150mA	520	525	535	nm
	λ _D (Blue)	I _F =150mA	460	465	475	nm
Luminous Flux	Φ _v (Red)	I _F =150mA	15	20	-	lm
	Φ _v (Green)	I _F =150mA	20	30	-	lm
	Φ _v (Blue)	I _F =150mA	5	10	-	lm
50% Power Angle	2θ _{1/2}	I _F =150mA	-	120	-	deg

*1 Tolerance of measurements of dominant wavelength is ±1nm

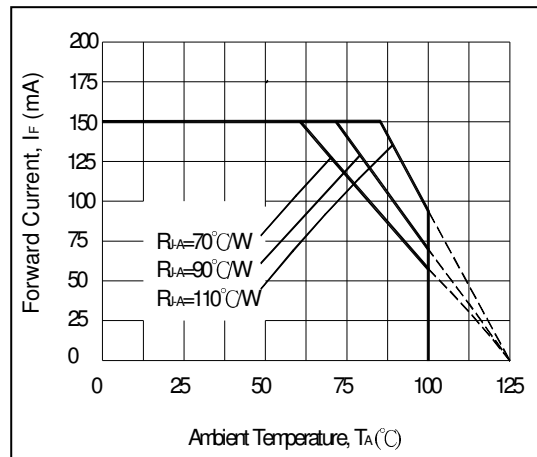
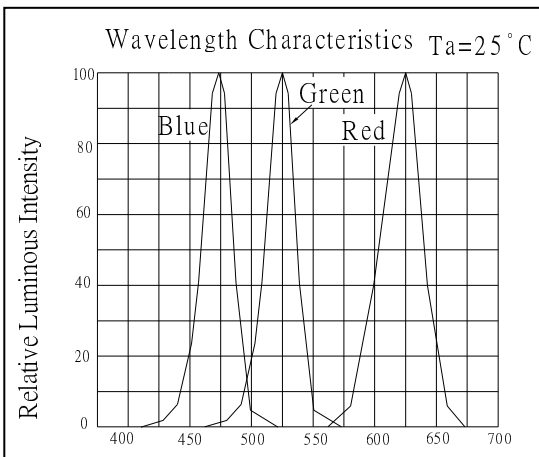
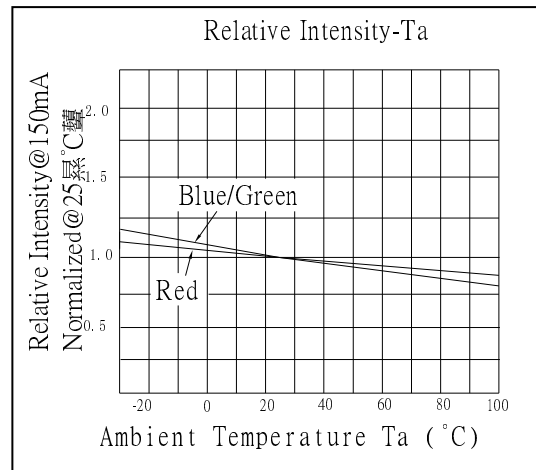
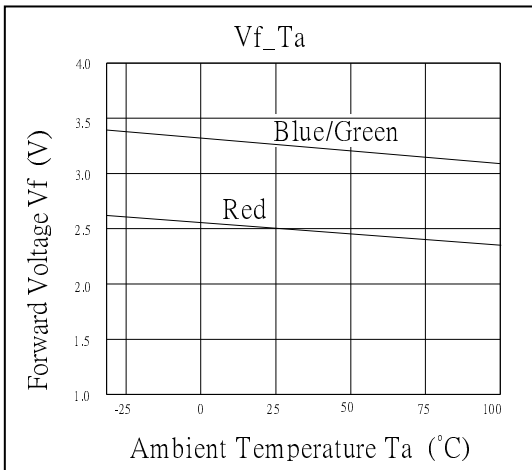
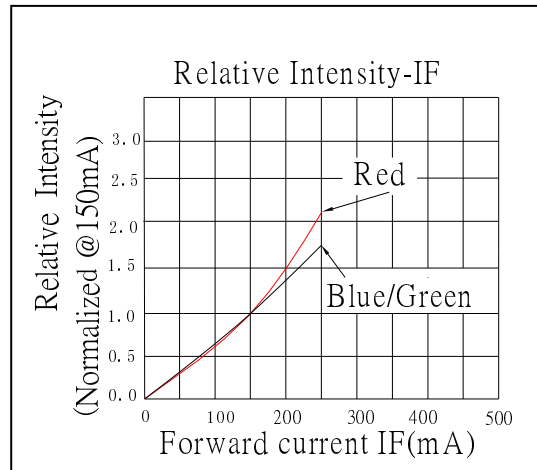
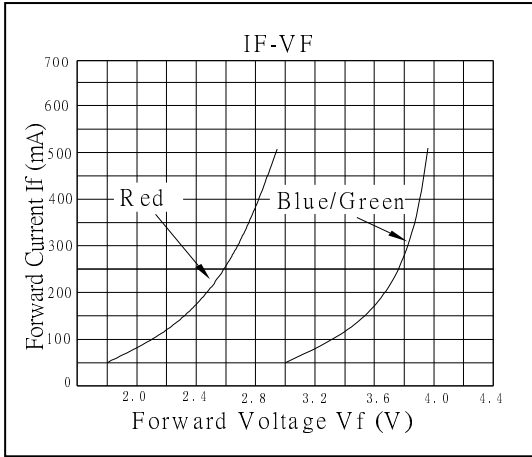
*2 Tolerance of measurements of luminous intensity is ±15%

*3 Tolerance of measurements of forward voltage is ±0.1V

Note: Don't drive at rated current more than 5s without heat sink for Tops H Power emitter series.

InGaN AND AlInGaP LED

TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES



RELIABILITY TEST REPORT

CLASSIFICATION	TEST ITEM	TEST CONDITION
ENDURANCE TEST	ROOM TEMPERATURE OPERATION LIFE	If: 150mA Ta: 25 ± 5 °C TEST TIME=1000HRS
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	R.H: 90~95% Ta: 65 ± 5 °C TEST TIME=240HRS(+2HRS)
	HIGH TEMPERATURE STORAGE	Ta: 100 °C TEST TIME=500HRS(-24HRS,+48HRS)
	LOW TEMPERATURE STORAGE	Ta: -40 °C TEST TIME=500HRS(-24HRS,+48HRS)
ENVIRONMENTAL TEST	TEMPERATURE CYCLING	-40 °C ~ 25 °C ~ 100 °C ~ 25 °C 30min 5min 30min 5min 20cycles
	RESISTANCE TO SOLDERING HEAT	Ta: 260 ± 5 °C TEST TIME=10 ± 1sec
	SOLDERABILITY	Ta: 245 ± 5 °C TEST TIME=5 ± 1sec

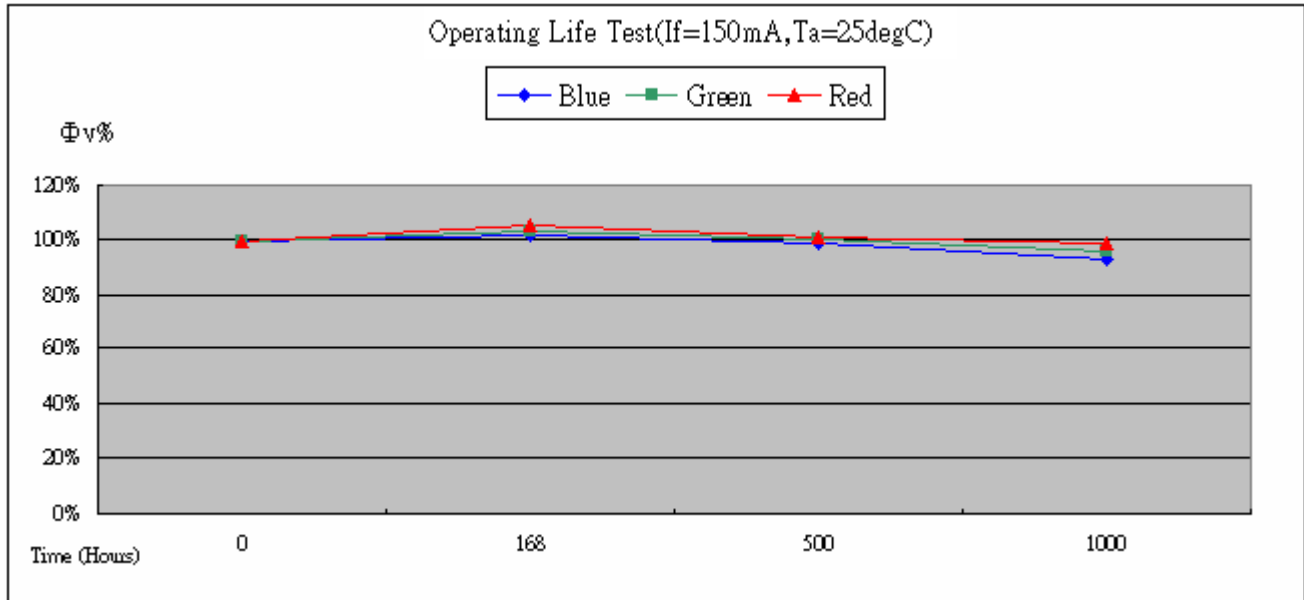
JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

MEASURING ITEM	SYMBOL	CONDITIONS	FAILURE CRITERIA
LUMINOUS INTENSITY	IV	IF=150mA	IV < 0.5 * L.S.L
FORWARD VOLTAGE	VF	IF=150mA	VF > 1.2 * U.S.L
REVERSE CURRENT	IR	Vr=5V	IR > 2 * U.S.L
SOLDERABILITY	-	-	LESS THAN 95% SOLDER COVERAGE

U.S.L : Upper Specification Limit

L.S.L : Lower Specification Limit

OPERATION LIFE TEST LUMINANCE RATE CURVE

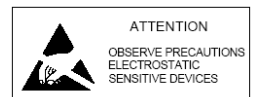


Emit Light)

*The Projected Data is Base on The Feature of LED Itself Under Normal Operation Conditions.

*Any Improper Circuit Design or External Factors Might Cause a Different Result.

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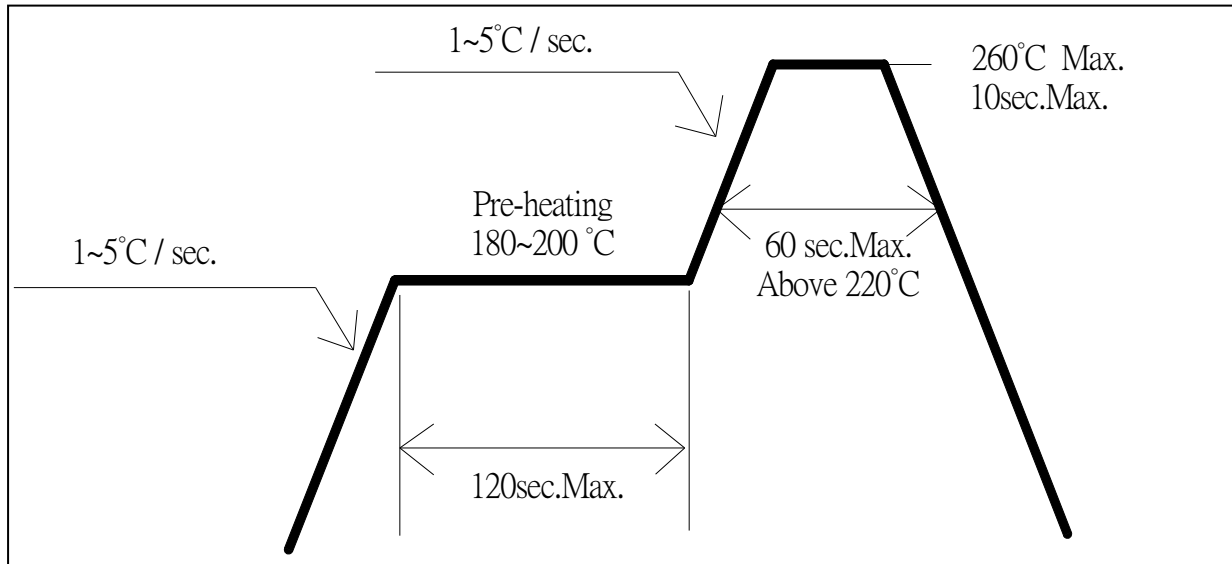


■ Soldering Conditions

Reflow Soldering	Hand Soldering
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Pre-Heat	180 ~ 200°C	Temperature Soldering time	350°C Max. 3 sec. Max. (one time only)
Pre-Heat Time	120 sec. Max.		
Peak temperature	260°C Max.		
Dipping Time	10 sec. Max.		
Condition	Refer to Temperature-profile		

• Reflow Soldering Condition(Lead-free Solder)



*Recommended soldering conditions vary according to the type of LED

*Although the recommended soldering conditions are specified in the above table, reflow, or hand soldering at the lowest possible temperature is desirable for the LEDs.

*A rapid-rate process is not recommended for cooling the LEDs down from the peak temperature.

- All SMD LED products are pb-free soldering available.
- Occasionally there is a brightness decrease caused by the influence of heat or ambient atmosphere during air reflow. It is recommended that the User use the nitrogen reflow method.
- Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.
- Reflow soldering should not be done more than two times.
- When soldering, do not put stress on the LEDs during heating.
- After soldering, do not warp the circuit board.

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