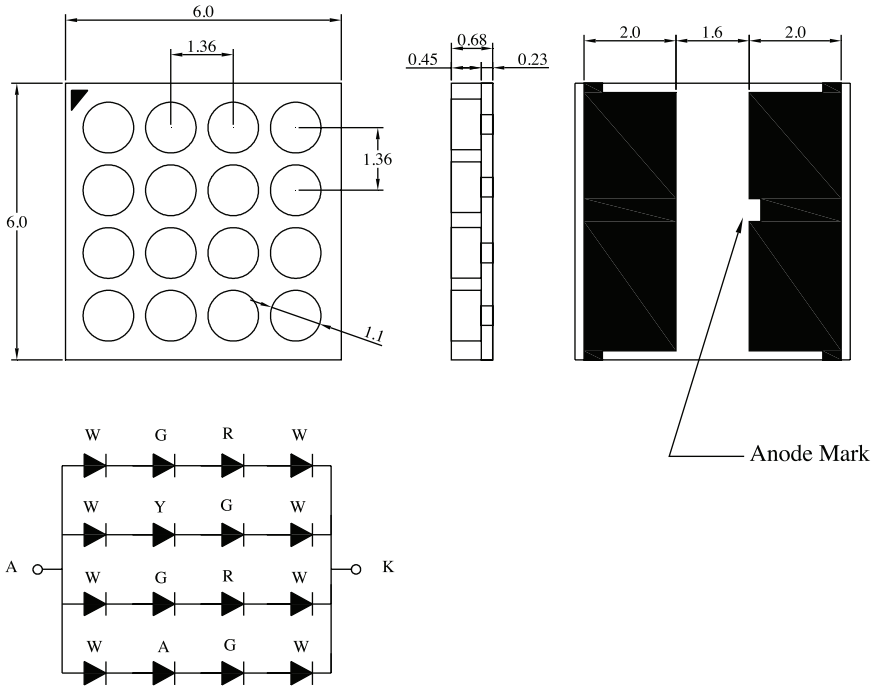
4 × 4 Ceramic SMD Type

RoHS Compliant

Package Dimensions:



All dimensions are in mm
Tolerance: ±0.25mm

Absolute Maximum Ratings at Ta=25°C

Parameter			Rating	Unit
Power Dissipation*	White & Green	P_D	120	mW
	Red & Yellow		78	
	Amber		72	
Reverse Voltage*		V_R	5	V
D.C. Forward Current*		If	350	mA
Pulsed Forward Current (tp ≤ 100μs, Duty Cycle = 0.005 × 1)*		If (Peak)	100	mA
Operating Temperature Range		Topr.	-40 to +100	°C
Storage Temperature Range		Tstg.	-40 to +100	°C
Soldering Temperature		Tsld.	Reflow Soldering: 260°C for 10sec.	
Electric Static Discharge (HBM)		ESD	300	V

Electrical & Optical Characteristics

Parameter		Symbol	Condition	Values			Unit
				Min.	Typ.	Max.	
Luminous Flux		Φv	If=80mA	10.7	20		lm
Forward Voltage		Vf	If=80mA		11.5	15	V
Corrleated Colour Temperature	Rank C9	CCT	If=80mA	5,500		6,000	K
	Rank C10			6,000		6,500	
	Rank C11			6,500		7,000	
Colour rendering Index		CRI	If=80mA		94		Ra
Reverse Current*		Ir	Vr=5V			50	μA
Viewing Angle		2 θ ½	If=80mA		120		deg

Notes : 1. The data is tested by an IS tester.
2. Customer's special requirements are also welcome.
3. * The values are based on 1 die performance.

Typical Electrical & Optical Characteristics Curves:

(25°C Ambient temperature unless otherwise noted)

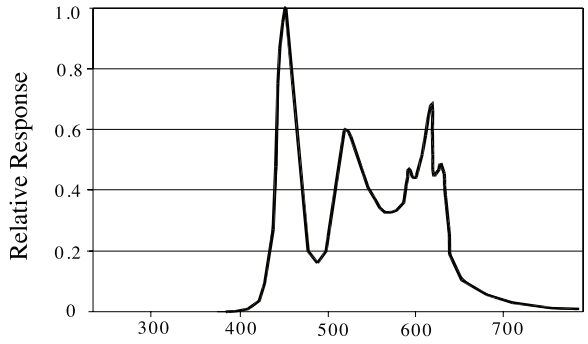
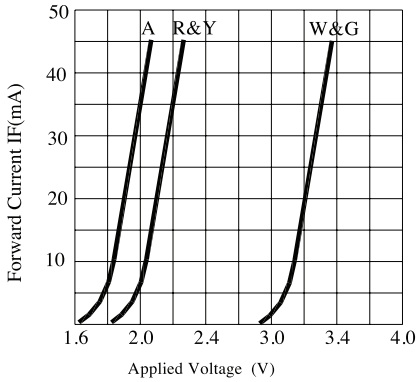
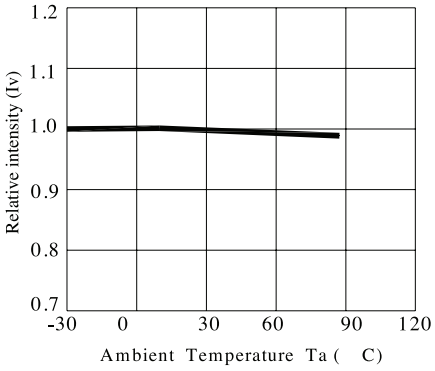


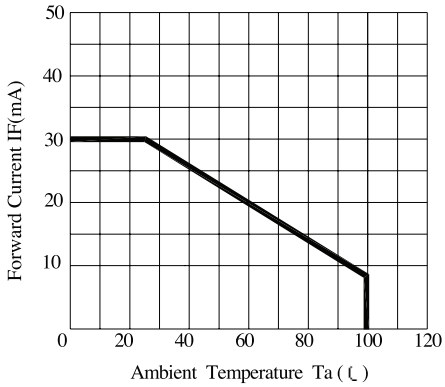
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



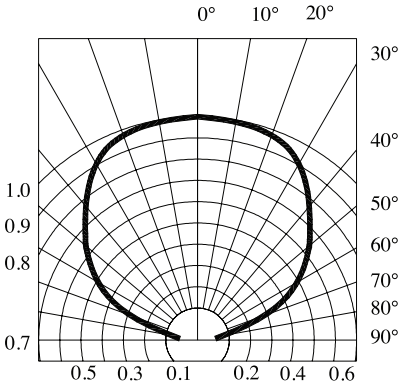
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Intensity



Ambient Temperature VS. Forward Current



Radiation Diagram

Recommended Storage Environment:

- Temperature: 5°C ~ 30°C (41°F ~ 86°F)
- Humidity: 60% RH Max.
- Use within 7 days after opening of sealed vapour/ESD barrier bags.
- If moisture absorbent material (silica gel) has faded away or LEDs have exceeded the storage time, baking treatment should be performed using the following conditions:
- Baking Treatment: 60 ± 5°C for 24 hours
- Fold the opened bag firmly and keep in dry environment.

Soldering

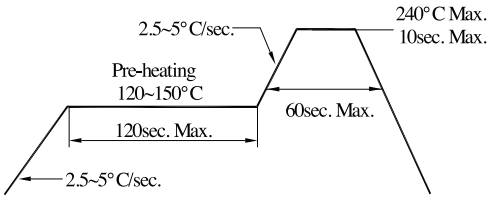
Reflow Soldering				
	Lead Solder	Lead-free Solder		
Pre-heat	120 ~ 150°C	180 ~ 200°C	Temperature	350°C max.
Pre-heat Time	120sec. max.	120sec. max.	Soldering time	3sec max. (one time only)
Peak Temperature	240°C max.	260°C max.		
Soldering Time	10sec. max.	10sec. max.		
Condition	Refer to temperature-profile 1	Refer to temperature-profile 2		

*After reflow soldering rapid cooling should be avoided.

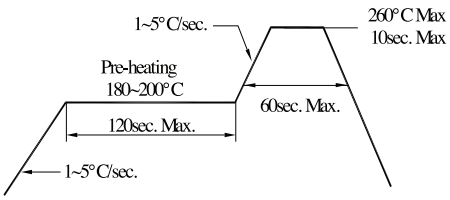
Temperature-profile (surface of circuit board):

Use the conditions shown under figure.

<1 : Lead Solder>

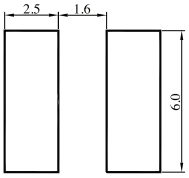


<2 : Lead-free Solder>



Recommended Soldering Pad Design:

Use the following conditions shown in figure.



Part Number Table

LED Chip			Lens Colour	Part Number
Material		Emitting Colour		
White & Green	InGaN / Sapphire	Warm White	Water clear	703-0154
Red & Yellow	AlGaInP / Si			
Amber	AlGaUnP / GaAs			