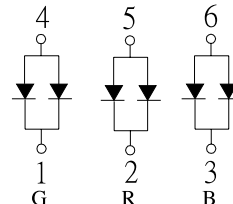
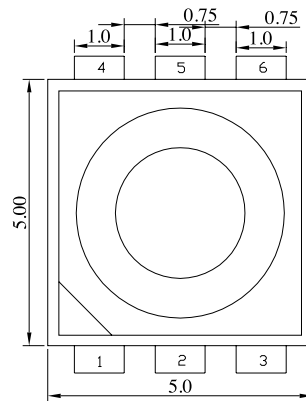
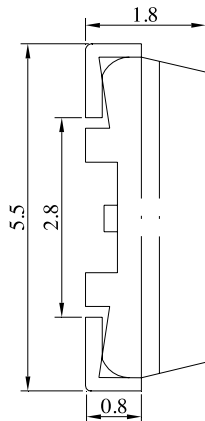


5mm × 5mm SMD Type



Package Dimensions:



All dimensions are in mm
Tolerance: $\pm 0.25\text{mm}$

Absolute Maximum Ratings at $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating			Unit
Power Dissipation*	P_D	R	G	B	mW
		72	120	120	
Reverse Voltage*	V_R	5			V
D.C. Forward Current*	I_F	30			mA
Pulsed Forward Current (1 / 10 Duty Cycle, 0.1ms Pulse Width)*	I_F (Peak)	100			mA
Operating Temperature Range	$T_{opr.}$	-40 to +100			$^\circ\text{C}$
Storage Temperature Range	$T_{stg.}$	-40 to +100			$^\circ\text{C}$
Soldering Temperature	$T_{sld.}$	Reflow Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.			
Electric Static Discharge Threshold (HBM)*	ESD	-	6,000	6,000	V

* The values are based on 1 die performance.

Electrical & Optical Characteristics:

Parameter	Symbol	Colour	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity *2	I_v	R	$I_f = 40\text{mA}^{*3}$	244	450	-	mcd
		G		500	1000	-	
		B		200	430	-	
Forward Voltage *3	V_f	R	$I_f = 40\text{mA}^{*3}$	-	1.9	2.4	V
		G & B		-	3.2	4.0	
Peak Wavelength *2	λ_p	R	$I_f = 40\text{mA}^{*3}$	-	632	-	nm
		G & B		-	-	-	

5mm × 5mm SMD Type



Parameter	Symbol	Colour	Condition	Min.	Typ.	Max.	Unit
Dominant Wavelength *2	λ_d	R	$I_f = 40\text{mA}^*3$	-	625	-	nm
		G		-	520	-	
		B		-	465	-	
Reverse Current *1	I_r	R	$V_r = 5\text{V}$	-	-	100	μA
		G & B		-	-	50	
Viewing Angle *2	$2\theta_{1/2}$		$I_f = 40\text{mA}^*3$	-	120	-	deg
Spectrum Line Halfwidth *2	$\Delta\lambda$	R	$I_f = 40\text{mA}^*3$	-	20	-	nm
		G		-	35	-	
		B		-	26	-	

Note : 1. The data is tested by an IS tester.

2. Customer's special requirements are also welcome.

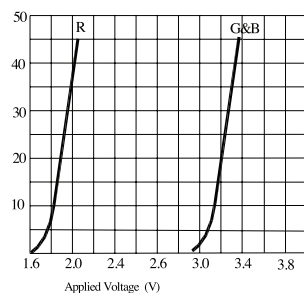
3. *1 For each die.

4. *2 When all LED dies are operated simultaneously.

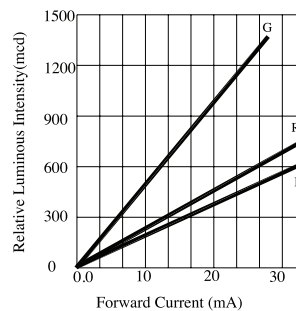
5. *3 For one circuit.

Typical Electrical & Optical Characteristics Curves:

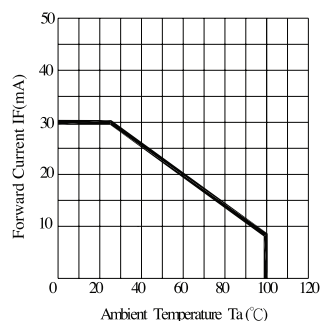
(25°C Ambient temperature unless otherwise noted)



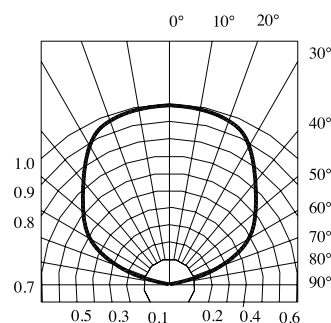
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Intensity



Ambient Temperature VS. Forward Current



Radiation Diagram

5mm × 5mm SMD Type



Recommended Storage Environment:

- Temperature: 5°C to 30°C (41°F to 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

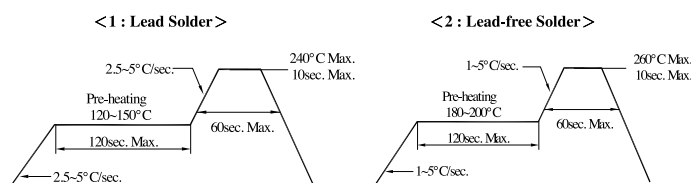
Soldering

Reflow Soldering			Hand Soldering	
	Lead Solder	Lead-free Solder		
Pre-heat	12°C ~ 150°C	180°C ~ 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.

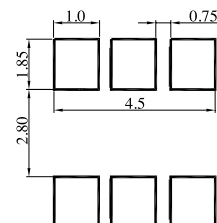
Temperature-profile (surface of circuit board)

Use the conditions shown under figure.



Recommended Soldering Pad Design

Use the conditions shown under figure.



Part Number Table

LED Chip		Lens Colour	Part Number
Material	Emitting Colour		
AlGaInP / GaAs	Hyper Red	Water Clear	703-1039
InGaN / Sapphire	True Green		
InGaN / Sapphire	Blue		

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