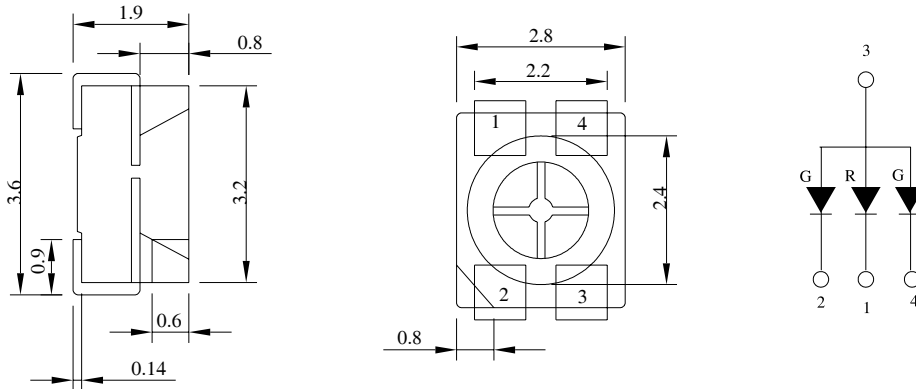


# 3.2mm × 2.8mm 0.06W SMD Type



## 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	$P_D$	72	$^\circ\text{C}$
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: $260^\circ\text{C}$ for 10sec. Hand Soldering: $350^\circ\text{C}$ for 3sec.	

## Electrical & Optical Characteristics: Hyper Red

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	$I_v$	$I_f = 20\text{mA}$	110	220	-	mcd
Forward Voltage	$V_f$	$I_f = 20\text{mA}$	-	1.9	2.4	V
Peak Wavelength	$\lambda_p$	$I_f = 20\text{mA}$	-	632	-	nm
Dominant Wavelength	$\lambda_d$	$I_f = 20\text{mA}$	-	625	-	nm
Reverse Current	$I_r$	$V_r = 5\text{V}$	-	-	100	$\mu\text{A}$
Viewing Angle	$2\theta_{1/2}$	$I_f = 20\text{mA}$	-	120	-	deg
Spectrum Line Halfwidth	$\Delta\lambda$	$I_f = 20\text{mA}$	-	20	-	nm

Note: 1. The data is tested by an IS tester  
2. Customer's special requirements are also welcome.

# 3.2mm × 2.8mm 0.06W SMD Type



## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Power Dissipation	P <sub>D</sub>	120	°C
Reverse Voltage	V <sub>R</sub>	5	V
D.C. Forward Current	I <sub>f</sub>	30	mA
Pulsed Forward Current (1 / 10 Duty Cycle, 0.1ms Pulse Width)	I <sub>f</sub> (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. Hand Soldering: 350°C for 3sec.	
Electric Static Discharge Threshold (HBM)	ESD	300	V

## Electrical & Optical Characteristics: True Green

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	I <sub>v</sub>	I <sub>f</sub> = 20mA	370	710	-	mcd
Forward Voltage	V <sub>f</sub>	I <sub>f</sub> = 20mA	-	3.2	4	V
Peak Wavelength	λ <sub>p</sub>	I <sub>f</sub> = 20mA	-	-	-	nm
Dominant Wavelength	λ <sub>d</sub>	I <sub>f</sub> = 20mA	-	520	-	nm
Reverse Current	I <sub>r</sub>	V <sub>r</sub> = 5V	-	-	50	μA
Viewing Angle	2θ ½	I <sub>f</sub> = 20mA	-	120	-	deg
Spectrum Line Halfwidth	Δλ	I <sub>f</sub> = 20mA	-	35	-	nm

- Note: 1. The data is tested by an IS tester  
2. Customer's special requirements are also welcome.

## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Power Dissipation	P <sub>D</sub>	120	°C
Reverse Voltage	V <sub>R</sub>	5	V
D.C. Forward Current	I <sub>f</sub>	30	mA
Pulsed Forward Current (1 / 10 Duty Cycle, 0.1ms Pulse Width)	I <sub>f</sub> (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. Hand Soldering: 350°C for 3sec.	
Electric Static Discharge Threshold (HBM)	ESD	300	V

# 3.2mm × 2.8mm 0.06W SMD Type



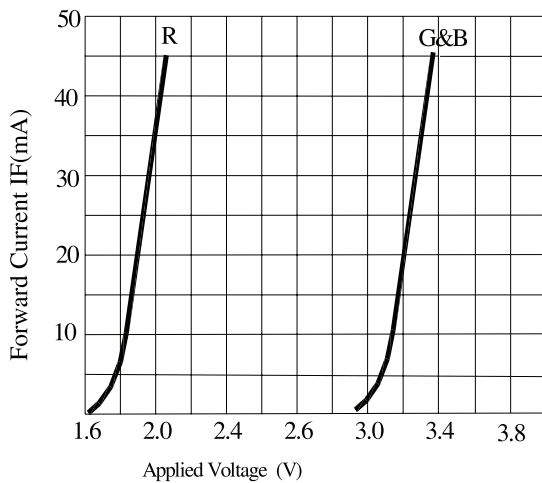
## Electrical & Optical Characteristics: Blue

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	$I_v$	$I_f = 20\text{mA}$	110	230	-	mcd
Forward Voltage	$V_f$	$I_f = 20\text{mA}$	-	3.2	4	V
Peak Wavelength	$\lambda_p$	$I_f = 20\text{mA}$	-	-	-	nm
Dominant Wavelength	$\lambda_d$	$I_f = 20\text{mA}$	-	465	-	nm
Reverse Current	$I_r$	$V_r = 5\text{V}$	-	-	50	$\mu\text{A}$
Viewing Angle	$2\theta_{1/2}$	$I_f = 20\text{mA}$	-	120	-	deg
Spectrum Line Halfwidth	$\Delta\lambda$	$I_f = 20\text{mA}$	-	26	-	nm

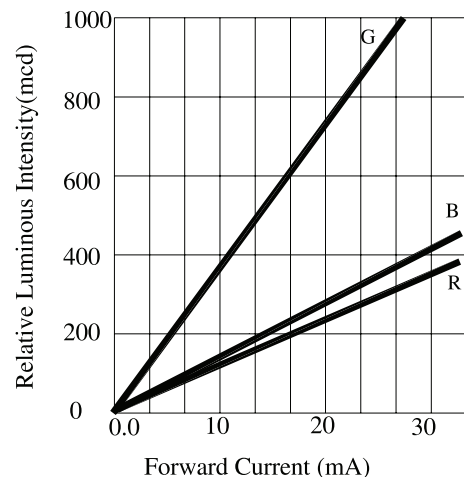
Note: 1. The data is tested by an IS tester  
2. Customer's special requirements are also welcome.

## Typical Electrical & Optical Characteristics Curves:

(25°C Ambient temperature unless otherwise noted)



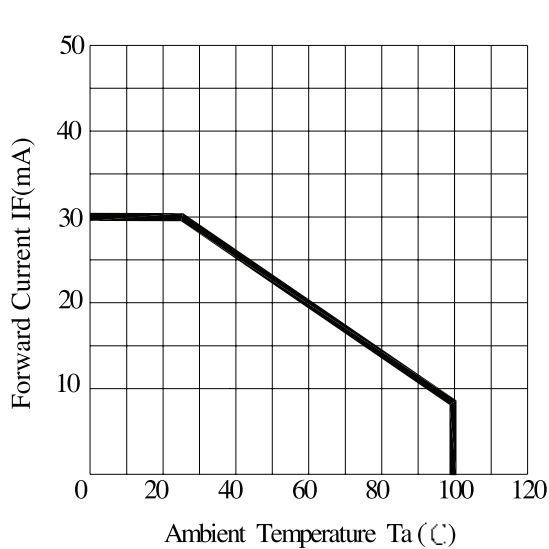
Forward Current VS. Applied Voltage



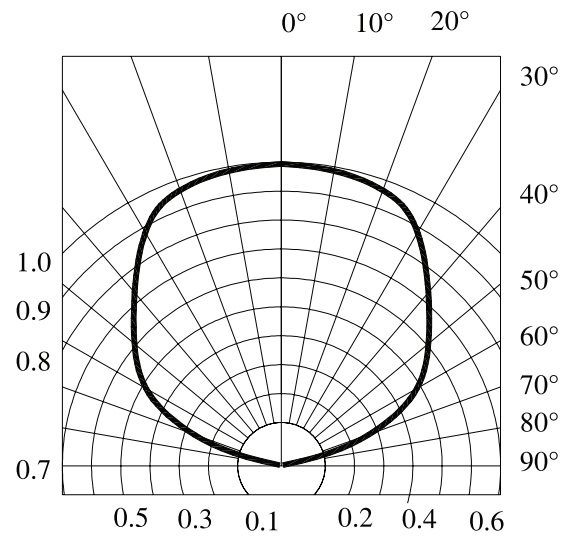
Forward Current VS. Luminous Intensity



# 3.2mm × 2.8mm 0.06W SMD Type



Ambient Temperature VS. Forward Current



Radiation Diagram

## 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 1		

\*After reflow soldering rapid cooling should be avoided.

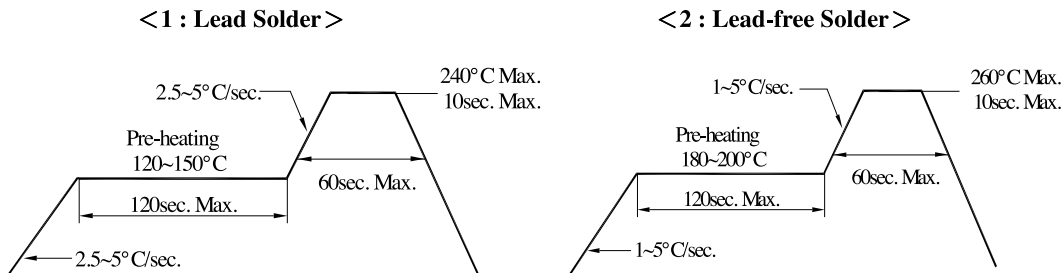


# 3.2mm × 2.8mm 0.06W SMD Type



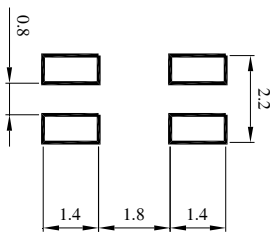
## Temperature-profile (surface of circuit board)

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	703-1028
InGaN / Sapphire	True Green		
InGaN / Sapphire	Blue		

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