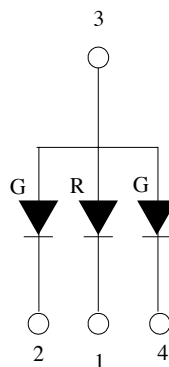
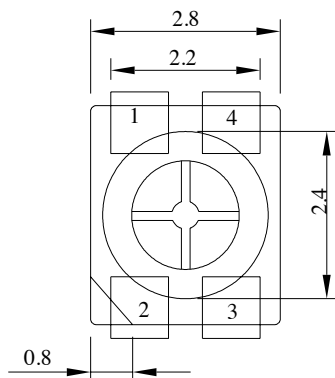
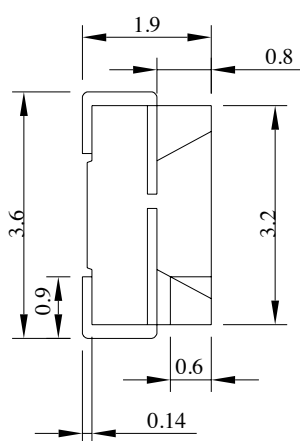


# 3.2 x 2.8mm SMD Type



## Package Dimensions:



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

Ant Part No.	LED Chip		Lens Colour
	Material	Emitting Colour	
703-1030	AlGaInP / GaAs	Hyper red	Water clear
	InGaN / Sapphire	True green	
	InGaN / Sapphire	Blue	

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# 3.2 x 2.8mm SMD Type



## Absolute Maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Power Dissipation	P <sub>D</sub>	72	°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	T <sub>opr.</sub>	-40 to +100	°C
Storage Temperature Range	T <sub>stg.</sub>	-40 to +100	°C
Soldering Temperature	T <sub>slid.</sub>	Reflow Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.	

## Electrical & Optical Characteristics: Hyper Red

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	I <sub>v</sub>	I <sub>f</sub> =20mA	110	220		mcd
Forward Voltage	V <sub>f</sub>	I <sub>f</sub> =20mA		1.9	2.4	V
Peak Wavelength	λ <sub>p</sub>	I <sub>f</sub> =20mA		632		nm
Dominant Wavelength	λ <sub>d</sub>	I <sub>f</sub> =20mA		625		nm
Reverse Current	I <sub>r</sub>	V <sub>r</sub> =5V			100	μA
Viewing Angle	2θ <sub>1/2</sub>	I <sub>f</sub> =20mA		120		deg
Spectrum Line Halfwidth	Δλ	I <sub>f</sub> =20mA		20		nm

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

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# 3.2 x 2.8mm 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	T <sub>opr.</sub>	-40 to +100	°C
Storage Temperature Range	T <sub>stg.</sub>	-40 to +100	°C
Soldering Temperature	T <sub>sld.</sub>	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	4.0	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 <sub>1/2</sub>	I <sub>f</sub> =20mA		120		deg
Spectrum Line Halfwidth	Δλ	I <sub>f</sub> =20mA		35		nm

- Notes: 1. The data is tested by an IS tester.  
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# 3.2 x 2.8mm 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	T <sub>opr.</sub>	-40 to +100	°C
Storage Temperature Range	T <sub>stg.</sub>	-40 to +100	°C
Soldering Temperature	T <sub>sld.</sub>	Reflow Soldering: 260°C for 10sec. Hand Soldering: 350°C for 3sec.	
Electric Static Discharge Threshold (HBM)	ESD	300	V

## Electrical & Optical Characteristics: Blue

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Flux	I <sub>v</sub>	I <sub>f</sub> =20mA	110	230		mcd
Forward Voltage	V <sub>f</sub>	I <sub>f</sub> =20mA		3.2	4.0	V
Peak Wavelength	λ <sub>p</sub>	I <sub>f</sub> =20mA				nm
Dominant Wavelength	λ <sub>d</sub>	I <sub>f</sub> =20mA		465		nm
Reverse Current	I <sub>r</sub>	V <sub>r</sub> =5V			50	μA
Viewing Angle	2θ <sub>1/2</sub>	I <sub>f</sub> =20mA		120		deg
Spectrum Line Halfwidth	Δλ	I <sub>f</sub> =20mA		26		nm

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

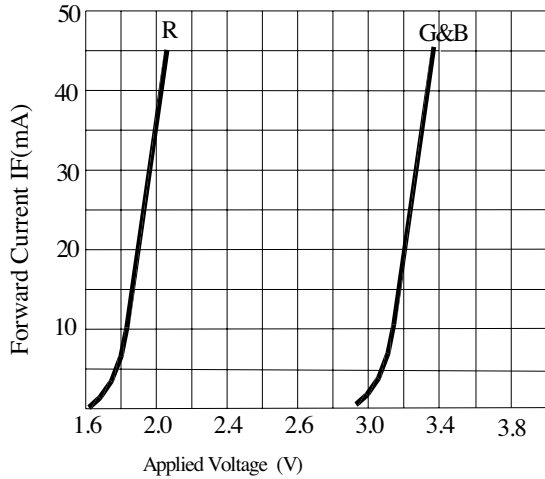
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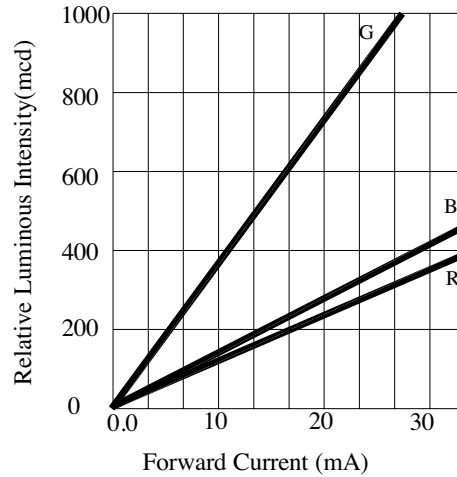
# 3.2 x 2.8mm SMD Type



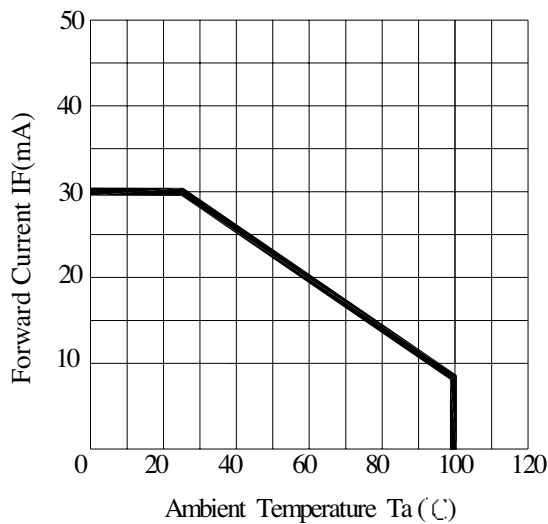
## Typical Electrical & Optical Characteristics Curves: (25°C Ambient temperature unless otherwise noted)



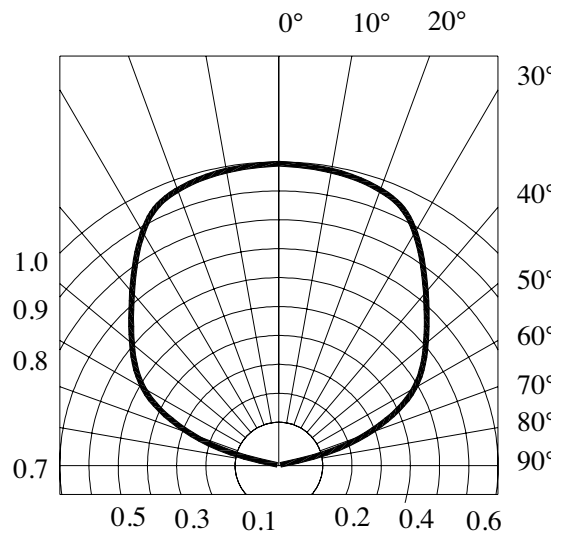
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Intensity



Ambient Temperature VS. Forward Current



Radiation Diagram

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# 3.2 x 2.8mm SMD Type



### 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

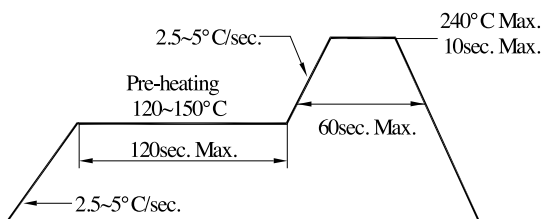
Reflow Soldering			Hand Soldering	
	Lead Solder	Lead-free Solder		
Pre-heat	12 ~ 150°C	180 ~ 200°C	Temperature	350°C Max.
Pre-heat Time	120sec. Max.	120sec. Max	Soldering Time	3sec. Max (one time only)
Peak Temperature	240°C Max.	260°C Max.		
Soldering Time	10sec Max.	10sec. Max		
Condition	Refer to Temperature profile 1	Refer to Temperature profile 2		

\*After reflow soldering rapid cooling should be avoided.

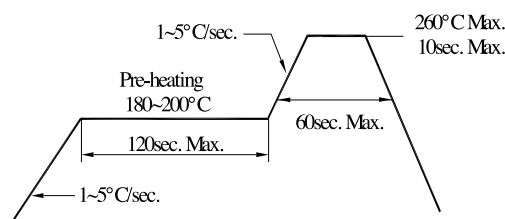
### Temperature-profile (surface of circuit board)

Use the conditions shown under figure.

< 1 : Lead Solder >

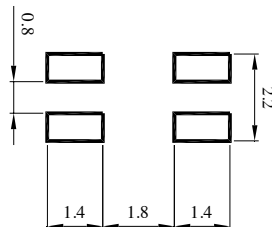


< 2 : Lead-free Solder >



### Recommended Soldering Pad Design

Use the conditions shown under figure.



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