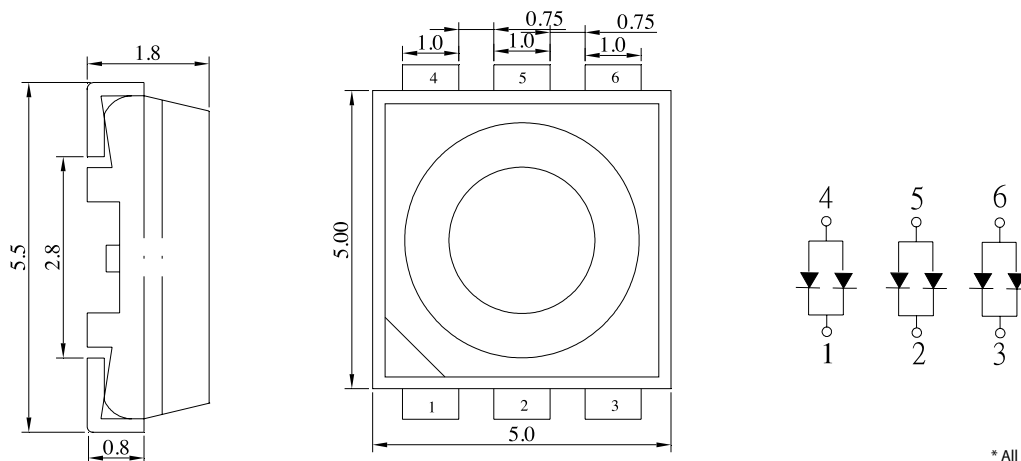


5.0 x 5.0mm SMD Type



Package Dimensions:



* All dimensions are in mm
* Tolerance: ± 0.25 mm

| Ant Part No. | LED Chip | | Lens Colour |
|--------------|------------------|-----------------|-----------------|
| | Material | Emitting Colour | |
| 703-1043 | InGaN / Sapphire | Warm white | Yellow diffused |

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5.0 x 5.0mm SMD Type



Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Unit |
|--|-----------------------|---|------|
| Power Dissipation* | P _D | 120 | °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 | 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 | 6000 | V |

* The values are based on 1 die performance.

Electrical & Optical Characteristics: Hyper Red

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit | |
|---|-------------------|------------------------------------|------------------------------------|-------|------|------|---|
| Luminous Intensity* ² | I _v | I _f =20mA* ¹ | 2750 | 6020 | | mcd | |
| Luminous Flux* ² | Φ _v | I _f =20mA* ¹ | | 13700 | | lm | |
| Forward Voltage* ¹ | V _f | I _f =20mA* ¹ | | 3.2 | 4.0 | V | |
| Correlated Colour Temperature* ² | WA | CCT | I _f =20mA* ¹ | 5000 | | 5250 | K |
| | WB | | | 5250 | | 5500 | |
| | WC | | | 5500 | | 5750 | |
| | WD | | | 5750 | | 6000 | |
| Colour Rendering Index (Ra) | CRI | I _f =20mA* ¹ | | 64 | | Ra | |
| Reverse Current* ¹ | I _r | V _r =5V* ¹ | | | 50 | μA | |
| Viewing Angle* ² | 2θ _{1/2} | I _f =20mA* ¹ | | 120 | | deg | |

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

2. Customer's special requirements are also welcome.

3. * For each die.

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

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www.element14.com

www.farnell.com

www.newark.com



5.0 x 5.0mm SMD Type



Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Rating | Unit |
|---|-----------------------|---|------|
| Power Dissipation | P _D | 120 | °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 | 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: Blue

| Parameter | Symbol | Condition | Min. | Typ. | Max. | Unit |
|-------------------------|-------------------|----------------------|------|------|------|------|
| Luminous Flux | I _v | I _f =20mA | 110 | 230 | | mcd |
| Forward Voltage | V _f | I _f =20mA | | 3.2 | 4.0 | V |
| Peak Wavelength | λ _p | I _f =20mA | | | | nm |
| Dominant Wavelength | λ _d | I _f =20mA | | 465 | | nm |
| Reverse Current | I _r | V _r =5V | | | 50 | μA |
| Viewing Angle | 2θ _{1/2} | I _f =20mA | | 120 | | deg |
| Spectrum Line Halfwidth | Δλ | I _f =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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5.0 x 5.0mm SMD Type



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

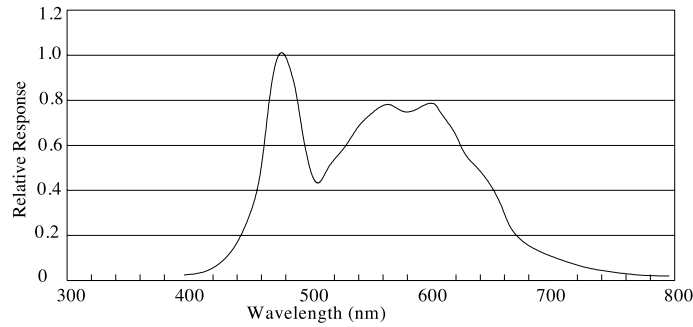
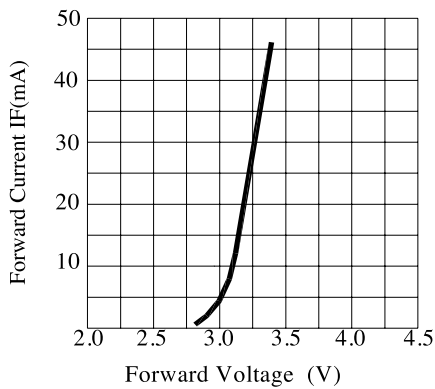
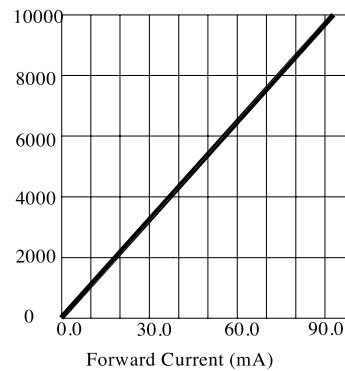


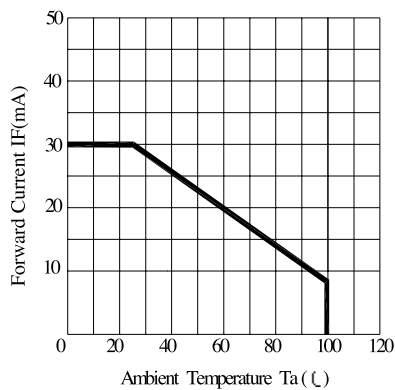
Fig.1 WHITE LED Spectrum VS. WAVELENGTH



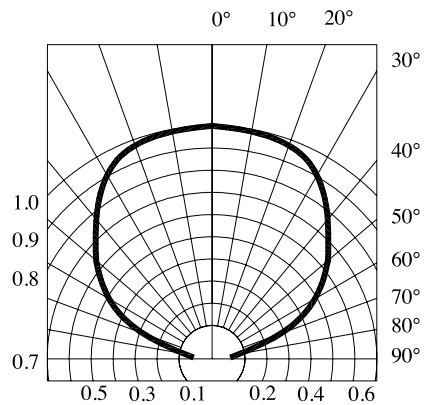
Forward Current VS. Applied Voltage



Forward Current VS. Luminous Intensity



Ambient Temperature VS. Forward Current



Radiation Diagram

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5.0 x 5.0mm 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

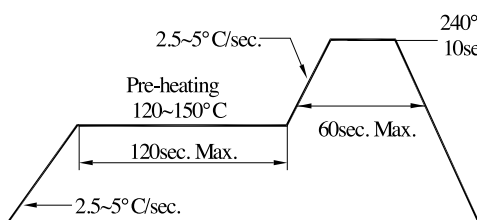
| Reflow Soldering | | | Hand Soldering | |
|------------------|--------------------------------|--------------------------------|----------------|------------------------------|
| | Lead Solder | Lead-free Solder | | |
| Pre-heat | 12 ~ 150°C | 180 ~ 200°C | Temperature | 350°C Max. |
| Pre-heat Time | 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.

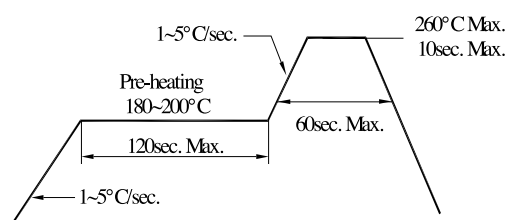
Temperature-profile (surface of circuit board)

Use the conditions shown under figure.

< 1 : Lead Solder >

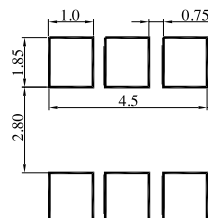


< 2 : Lead-free Solder >



Recommended Soldering Pad Design

Use the conditions shown under figure.



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