



AAA3528ESGCT 3.5 x 2.8 mm Surface Mount LED Lamp

DESCRIPTIONS

- The High Efficiency Red source color devices are made with Gallium Arsenide Phosphide on Gallium Phosphide Orange Light Emitting Diode
- The Super Bright Green source color devices are made with Gallium Phosphide Green Light Emitting Diode

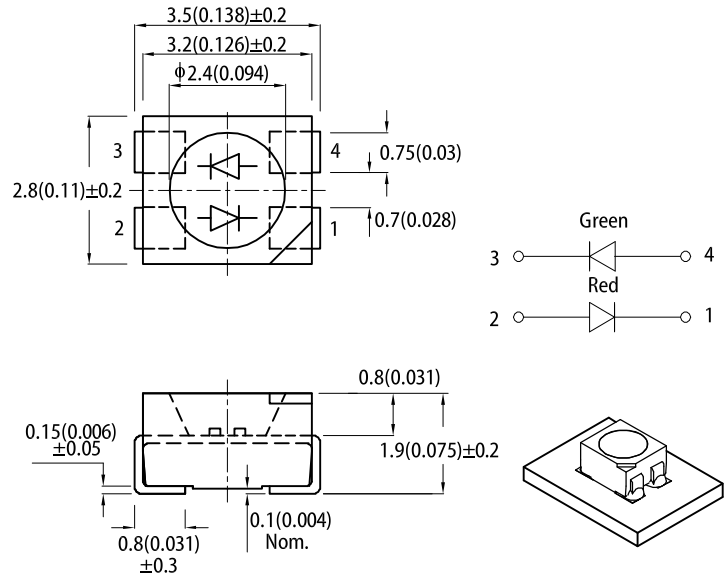
FEATURES

- Suitable for all SMD assembly and solder process
- Available on tape and reel
- Package: 2000 pcs / reel
- Moisture sensitivity level: 3
- Halogen-free
- RoHS compliant

APPLICATIONS

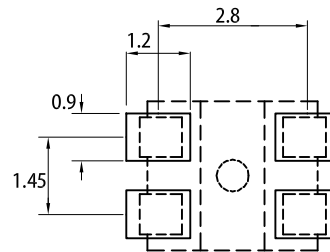
- Backlight
- Status indicator
- Home and smart appliances
- Wearable and portable devices
- Healthcare applications

PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN

(units : mm ; tolerance : ± 0.1)



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

SELECTION GUIDE

| Part Number | Emitting Color (Material) | Lens Type | Iv (mcd) @ 20mA ^[2] | | Viewing Angle ^[1] |
|--------------|---------------------------------|-------------|--------------------------------|------|------------------------------|
| | | | Min. | Typ. | 2θ1/2 |
| AAA3528ESGCT | High Efficiency Red (GaAsP/GaP) | Water Clear | 12 | 30 | 120° |
| | | | *8 | *15 | |
| | Super Bright Green (GaP) | | 12 | 30 | |
| | | | *12 | *30 | |

Notes:
 1. $\theta_{1/2}$ is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
 2. Luminous intensity / luminous flux: +/-15%.
 * Luminous intensity value is traceable to CIE127-2007 standards.

ELECTRICAL / OPTICAL CHARACTERISTICS at $T_A=25^\circ\text{C}$

| Parameter | Symbol | Emitting Color | Value | | Unit |
|--|-------------------------------------|---|--------------|------------|----------------------|
| | | | Typ. | Max. | |
| Wavelength at Peak Emission $I_F = 20\text{mA}$ | λ_{peak} | High Efficiency Red Super Bright Green | 627 565 | - | nm |
| Dominant Wavelength $I_F = 20\text{mA}$ | $\lambda_{\text{dom}}^{[1]}$ | High Efficiency Red Super Bright Green | 617 568 | - | nm |
| Spectral Bandwidth at 50% Φ REL MAX $I_F = 20\text{mA}$ | $\Delta\lambda$ | High Efficiency Red Super Bright Green | 45 30 | - | nm |
| Capacitance | C | High Efficiency Red Super Bright Green | 15 15 | - | pF |
| Forward Voltage $I_F = 20\text{mA}$ | $V_F^{[2]}$ | High Efficiency Red Super Bright Green | 2.0 2.2 | 2.5 2.5 | V |
| Reverse Current ($V_R = 5\text{V}$) | I_R | High Efficiency Red Super Bright Green | - | 10 10 | μA |
| Temperature Coefficient of λ_{peak} $I_F = 20\text{mA}$, $-10^\circ\text{C} \leq T \leq 85^\circ\text{C}$ | $\text{TC}_{\lambda_{\text{peak}}}$ | High Efficiency Red Super Bright Green | 0.13 0.12 | - | nm/ $^\circ\text{C}$ |
| Temperature Coefficient of λ_{dom} $I_F = 20\text{mA}$, $-10^\circ\text{C} \leq T \leq 85^\circ\text{C}$ | $\text{TC}_{\lambda_{\text{dom}}}$ | High Efficiency Red Super Bright Green | 0.06 0.08 | - | nm/ $^\circ\text{C}$ |
| Temperature Coefficient of V_F $I_F = 20\text{mA}$, $-10^\circ\text{C} \leq T \leq 85^\circ\text{C}$ | TC_V | High Efficiency Red Super Bright Green | -1.9 -2.0 | - | mV/ $^\circ\text{C}$ |

Notes:

- The dominant wavelength (λ_d) above is the setup value of the sorting machine. (Tolerance $\lambda_d : \pm 1\text{nm}$.)
- Forward voltage: $\pm 0.1\text{V}$.
- Wavelength value is traceable to CIE127-2007 standards.
- Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

ABSOLUTE MAXIMUM RATINGS at $T_A=25^\circ\text{C}$

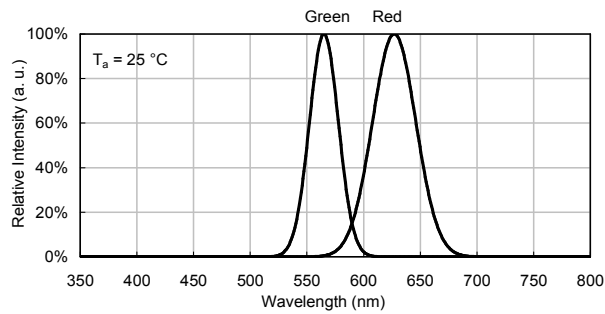
| Parameter | Symbol | Value | | Unit |
|--|--------------------------|---------------------|--------------------|--------------------|
| | | High Efficiency Red | Super Bright Green | |
| Power Dissipation | P_D | 75 | 62.5 | mW |
| Reverse Voltage | V_R | 5 | 5 | V |
| Junction Temperature | T_J | 125 | 110 | $^\circ\text{C}$ |
| Operating Temperature | T_{op} | -40 To +85 | | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -40 To +85 | | $^\circ\text{C}$ |
| DC Forward Current | I_F | 30 | 25 | mA |
| Peak Forward Current | $I_{\text{FM}}^{[1]}$ | 160 | 140 | mA |
| Electrostatic Discharge Threshold (HBM) | - | 8000 | 8000 | V |
| Thermal Resistance (Junction / Ambient) | $R_{\text{th JA}}^{[2]}$ | 430 | 460 | $^\circ\text{C/W}$ |
| Thermal Resistance (Junction / Solder point) | $R_{\text{th JS}}^{[2]}$ | 260 | 300 | $^\circ\text{C/W}$ |

Notes:

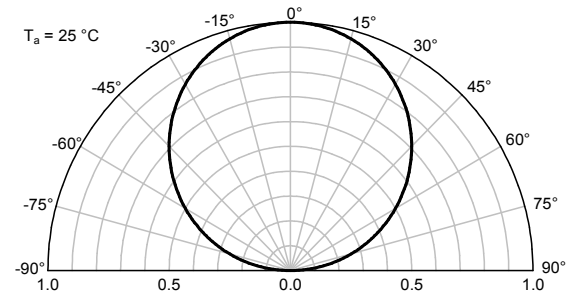
- 1/10 Duty Cycle, 0.1ms Pulse Width.
- $R_{\text{th JA}}$, $R_{\text{th JS}}$ Results from mounting on PC board FR4 (pad size $\geq 16\text{mm}^2$ per pad).
- Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.

TECHNICAL DATA

RELATIVE INTENSITY vs. WAVELENGTH

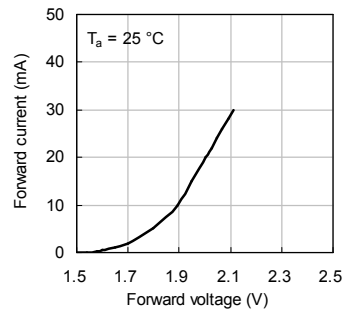


SPATIAL DISTRIBUTION

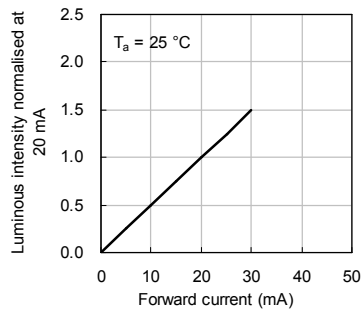


HIGH EFFICIENCY RED

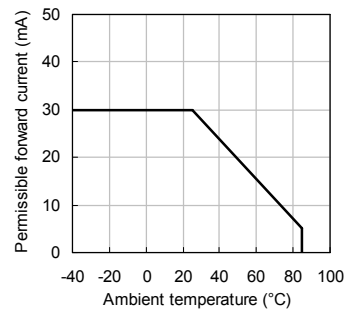
Forward Current vs. Forward Voltage



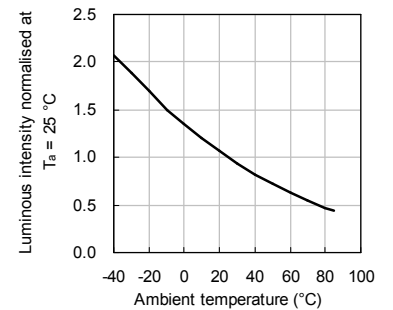
Luminous Intensity vs. Forward Current



Forward Current Derating Curve

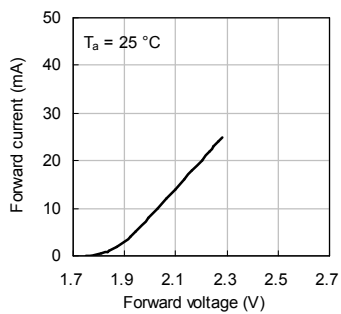


Luminous Intensity vs. Ambient Temperature

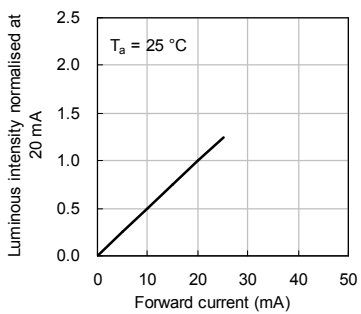


SUPER BRIGHT GREEN

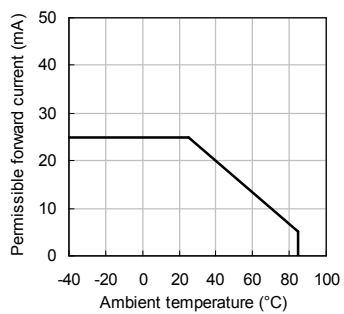
Forward Current vs. Forward Voltage



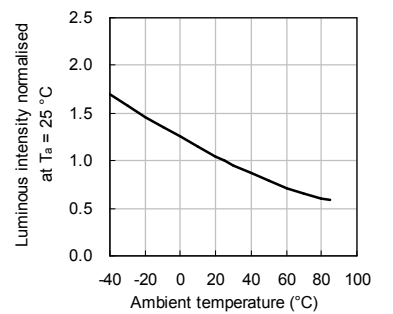
Luminous Intensity vs. Forward Current



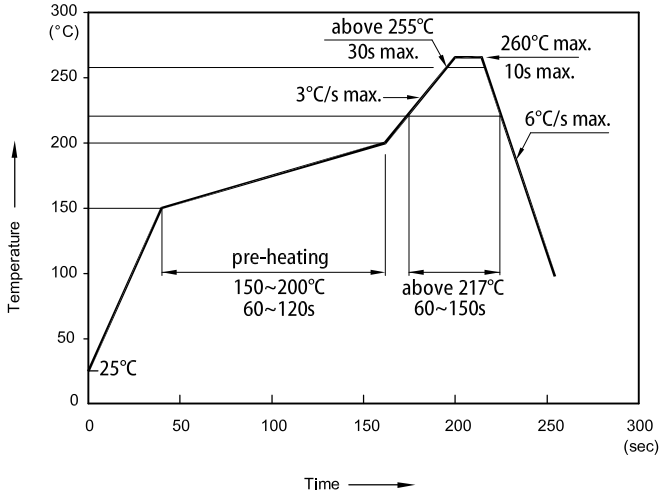
Forward Current Derating Curve



Luminous Intensity vs. Ambient Temperature

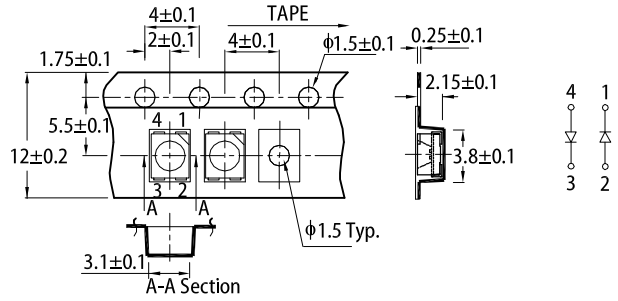


REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS

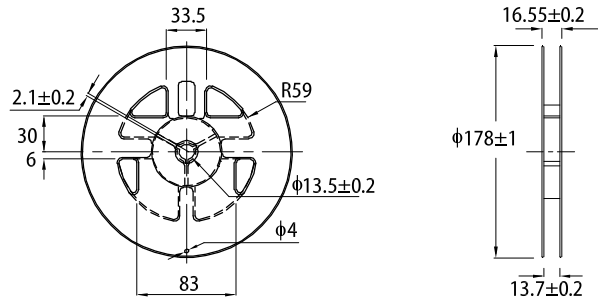


- Notes:
1. Don't cause stress to the LEDs while it is exposed to high temperature.
 2. The maximum number of reflow soldering passes is 2 times.
 3. Reflow soldering is recommended. Other soldering methods are not recommended as they might cause damage to the product.

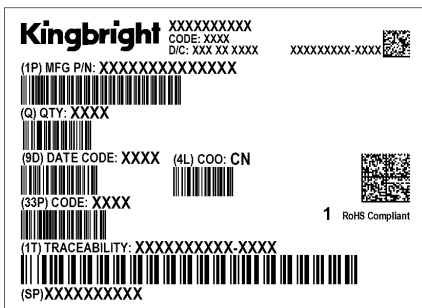
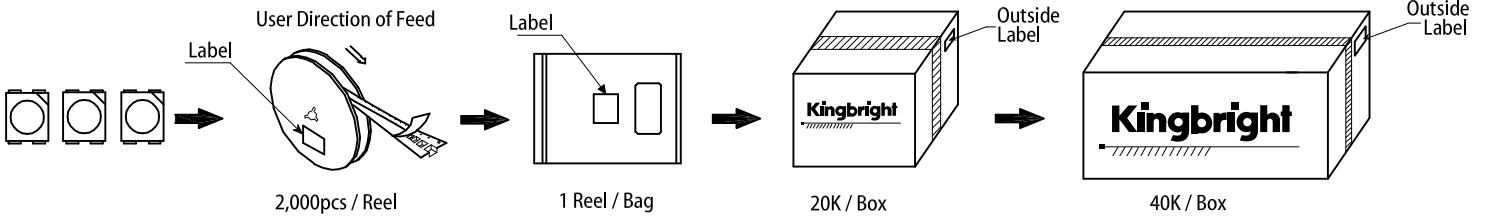
TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



PACKING & LABEL SPECIFICATIONS



PRECAUTIONARY NOTES

1. The information included in this document reflects representative usage scenarios and is intended for technical reference only.
2. The part number, type, and specifications mentioned in this document are subject to future change and improvement without notice. Before production usage customer should refer to the latest datasheet for the updated specifications.
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- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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