



APG015CGKKC-TT

0.45 x 0.25 x 0.2 mm SMD Chip LED Lamp

DESCRIPTIONS

- The Green source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode
- Electrostatic discharge and power surge could damage the LEDs
- It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs
- All devices, equipments and machineries must be electrically grounded

FEATURES

- 0.45 mm x 0.25 mm SMD LED, 0.2 mm thickness
- Low power consumption
- Wide viewing angle
- Compatible with automatic placement equipment
- Package: 4000 pcs / reel
- Moisture sensitivity level: 2
- Halogen-free
- RoHS compliant

APPLICATIONS

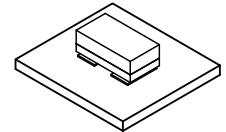
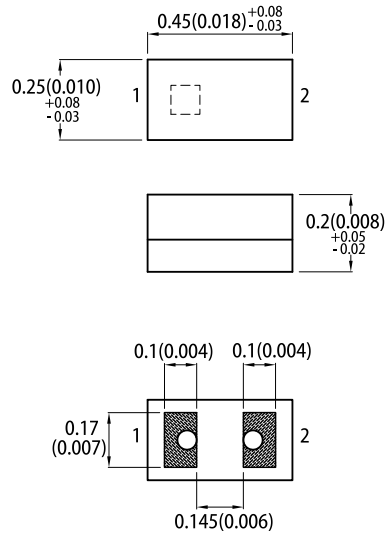
- Backlight
- Status indicator
- Home and smart appliances
- Wearable and portable devices
- Healthcare applications

ATTENTION

Observe precautions for handling electrostatic discharge sensitive devices

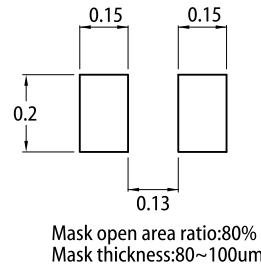


PACKAGE DIMENSIONS



RECOMMENDED SOLDERING PATTERN

(units : mm; tolerance : ± 0.02)



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.02(0.001") 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) @ 10mA ^[2] | | Viewing Angle ^[1] |
|----------------|--|-------------|--------------------------------|------|------------------------------|
| | | | Min. | Typ. | 2θ1/2 |
| APG015CGKKC-TT | ■ Green (AlGaInP) | Water Clear | 6 | 15 | 140° |

- Notes:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
 2. Luminous intensity / luminous flux: +/-15%.
 3. Luminous intensity value is traceable to CIE127-2007 standards.

ELECTRICAL / OPTICAL CHARACTERISTICS at T_A=25°C

| Parameter | Symbol | Emitting Color | Value | | Unit |
|---|--|----------------|-------|------|---------|
| | | | Typ. | Max. | |
| Wavelength at Peak Emission I _F = 10mA | λ_{peak} | Green | 573 | - | nm |
| Dominant Wavelength I _F = 10mA | λ_{dom} ^[1] | Green | 571 | - | nm |
| Spectral Bandwidth at 50% Φ REL MAX I _F = 10mA | $\Delta\lambda$ | Green | 15 | - | nm |
| Forward Voltage I _F = 10mA | V _F ^[2] | Green | 2.1 | 2.35 | V |
| Reverse Current (V _R = 5V) | I _R | Green | - | 10 | μ A |
| Temperature Coefficient of λ_{peak} I _F = 10mA, -10°C ≤ T ≤ 85°C | TC _{λ_{peak}} | Green | 0.12 | - | nm/°C |
| Temperature Coefficient of λ_{dom} I _F = 10mA, -10°C ≤ T ≤ 85°C | TC _{λ_{dom}} | Green | 0.09 | - | nm/°C |
| Temperature Coefficient of V _F I _F = 10mA, -10°C ≤ T ≤ 85°C | TC _V | Green | -1.9 | - | mV/°C |

Notes:

- The dominant wavelength (λ_d) above is the setup value of the sorting machine. (Tolerance λ_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°C

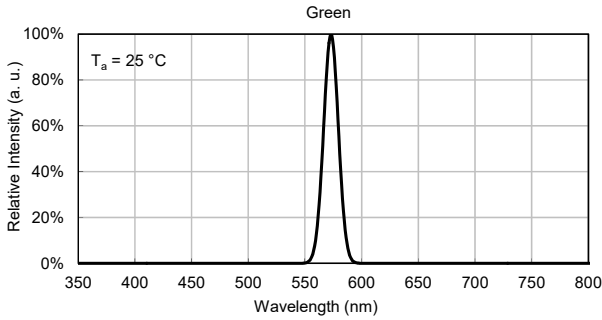
| Parameter | Symbol | Value | Unit |
|--|-----------------------------------|------------|------|
| Power Dissipation | P _D | 24 | mW |
| Reverse Voltage | V _R | 5 | V |
| Junction Temperature | T _j | 115 | °C |
| Operating Temperature | T _{op} | -40 to +85 | °C |
| Storage Temperature | T _{stg} | -40 to +85 | °C |
| DC Forward Current | I _F | 10 | mA |
| Peak Forward Current | I _{FP} ^[1] | 40 | mA |
| Electrostatic Discharge Threshold (HBM) | - | 3000 | V |
| Thermal Resistance (Junction / Ambient) | R _{th JA} ^[2] | 650 | °C/W |
| Thermal Resistance (Junction / Solder point) | R _{th JS} ^[2] | 460 | °C/W |

Notes:

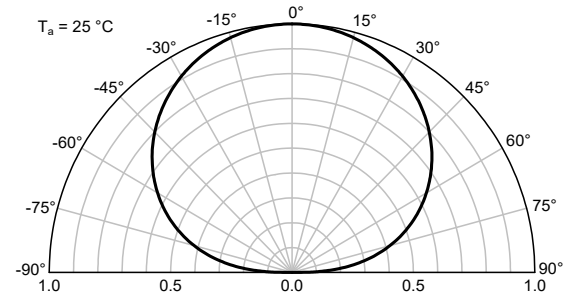
- 1/10 Duty Cycle, 0.1ms Pulse Width.
- R_{th JA}, R_{th JS} Results from mounting on PC board FR4 (pad size $\geq 16\text{ mm}^2$ per pad).
- Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and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

TECHNICAL DATA

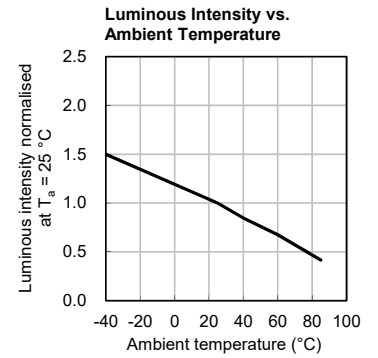
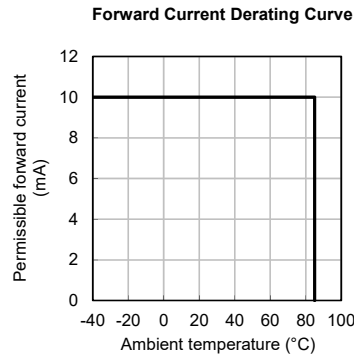
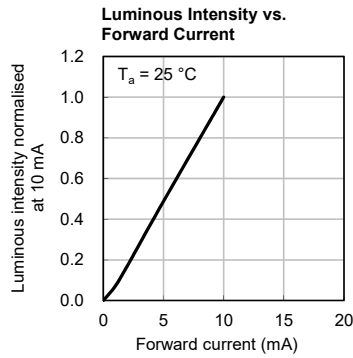
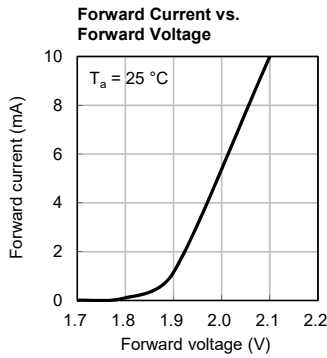
RELATIVE INTENSITY vs. WAVELENGTH



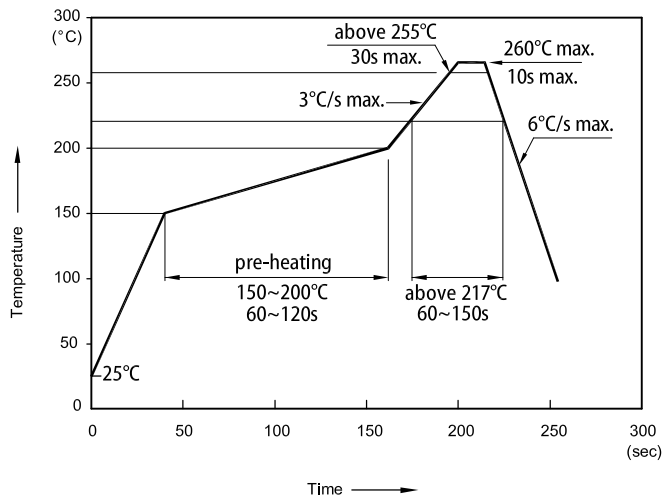
SPATIAL DISTRIBUTION



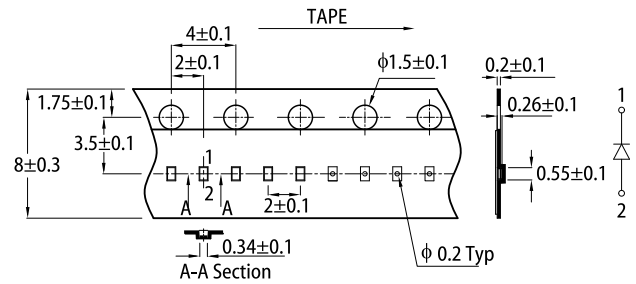
GREEN



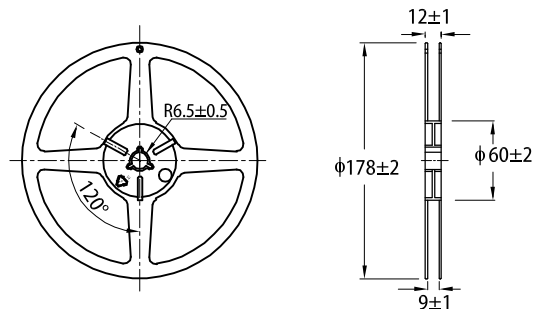
REFLOW SOLDERING PROFILE for LEAD-FREE SMD PROCESS



TAPE SPECIFICATIONS (units : mm)



REEL DIMENSION (units : mm)



- 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.

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