



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APTB1612CGKQWDF

Green
White

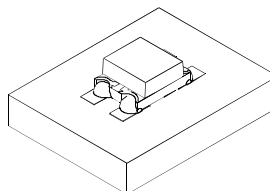
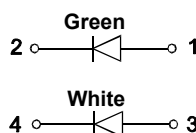
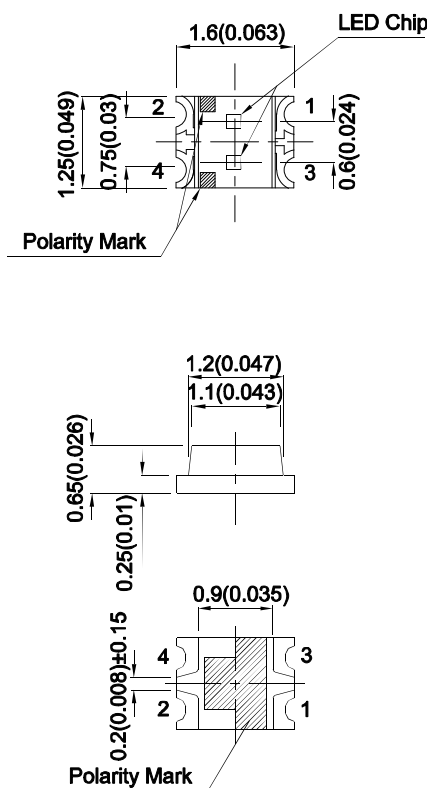
Features

- 1.6mmx1.25mm SMD LED, 0.65mm thickness.
- Bi-color, low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Descriptions

- The Green source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.
- The source color devices are made with InGaN 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.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.2(0.008)$ 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 No. | Emitting Color (Material) | Lens Type | Iv (mcd) [2] @ 20mA | | Viewing Angle [1] |
|-----------------|---------------------------|--------------------|------------------------|------|----------------------|
| | | | Min. | Typ. | 2θ1/2 |
| APT61612CGKQWDF | Green (AlGaInP) | Yellow Fluorescent | 20 | 50 | 160° |
| | White (InGaN) | | 120 | 250 | |

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: $\pm 15\%$.
3. Luminous intensity value is traceable to CIE127-2007 standards.

Electrical / Optical Characteristics at TA=25°C [Green]

| Symbol | Parameter | Emitting Color | Typ. | Max. | Units | Test Conditions |
|-----------------------|--------------------------|----------------|------|------|-------|---------------------------|
| λ_{peak} | Peak Wavelength | Green | 574 | | nm | I _F =20mA |
| λ_D [1] | Dominant Wavelength | Green | 570 | | nm | I _F =20mA |
| $\Delta\lambda_{1/2}$ | Spectral Line Half-width | Green | 20 | | nm | I _F =20mA |
| C | Capacitance | Green | 15 | | pF | V _F =0V;f=1MHz |
| V _F [2] | Forward Voltage | Green | 2.1 | 2.5 | V | I _F =20mA |
| I _R | Reverse Current | Green | | 10 | uA | V _R = 5V |

Notes:

1. Wavelength: $\pm 1nm$.
2. Forward Voltage: $\pm 0.1V$.
3. Wavelength value is traceable to CIE127-2007 standards.
4. Excess driving current and / or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

Electrical / Optical Characteristics at TA=25°C [White]

| Symbol | Parameter | Emitting Color | Typ. | Max. | Units | Test Conditions |
|--------------------|--------------------------|----------------|------|------|-------|---------------------------|
| V _F [1] | Forward Voltage | White | 3.3 | 4.0 | V | I _F =20mA |
| I _R | Reverse Current | White | | 50 | uA | V _R = 5V |
| x [2] | Chromaticity Coordinates | White | 0.31 | | | |
| y [2] | | | 0.31 | | | |
| C | Capacitance | White | 100 | | pF | V _F =0V;f=1MHz |

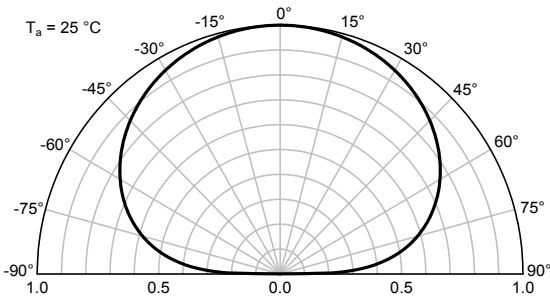
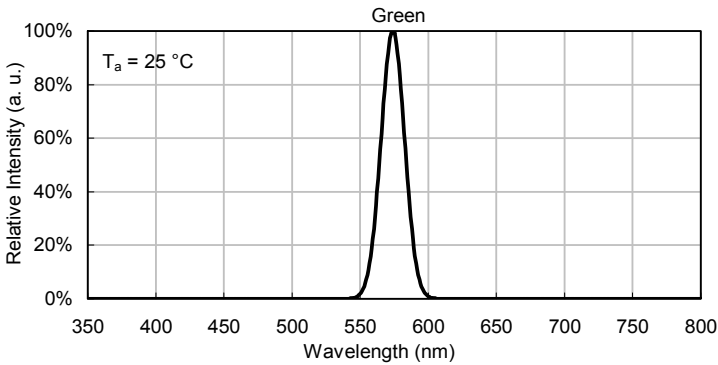
Notes:

1. Forward Voltage: $\pm 0.1V$.
2. Measurement Tolerance Of The Chromaticity Coordinates Is ± 0.01 .
3. Excess driving current and/or operating temperature higher than recommended conditions may result in severe light degradation or premature failure.

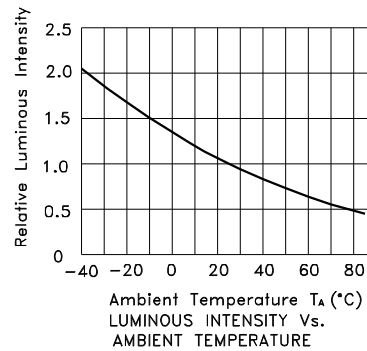
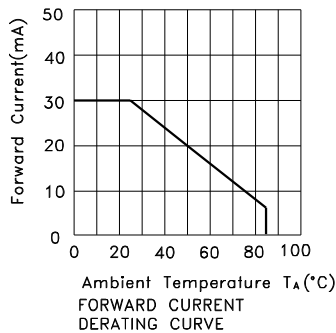
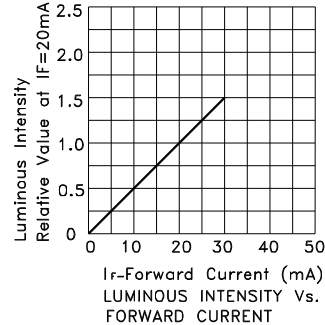
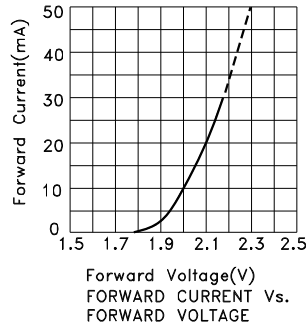
Absolute Maximum Ratings at TA=25°C

| Parameter | Green | White | Units |
|---|----------------|-------|-------|
| Power dissipation | 75 | 120 | mW |
| DC Forward Current | 30 | 30 | mA |
| Peak Forward Current [1] | 150 | 150 | mA |
| Electrostatic Discharge Threshold (HBM) | 3000 | 250 | V |
| Reverse Voltage | 5 | | V |
| Operating Temperature | -40°C To +85°C | | |
| Storage Temperature | -40°C To +85°C | | |

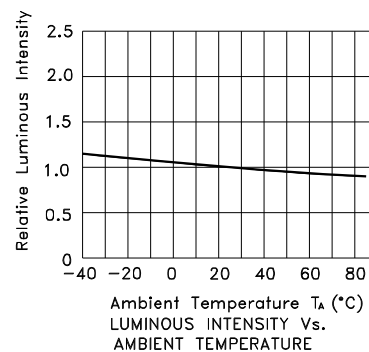
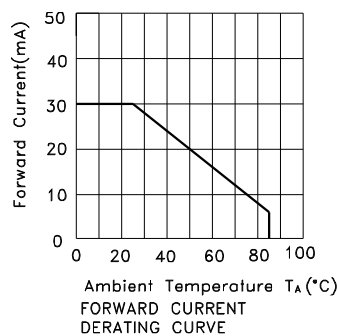
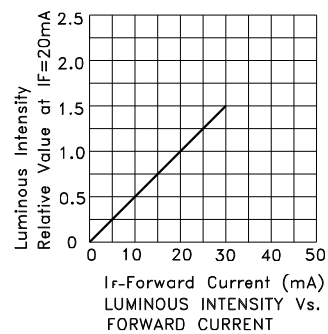
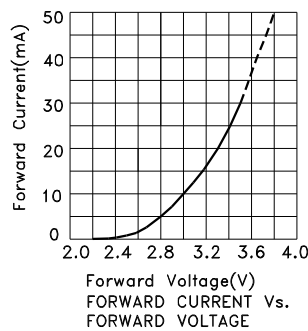
Notes:
1. 1/10 Duty Cycle, 0.1ms Pulse Width.
2. Relative humidity levels maintained between 40% and 60% in production area are recommended to avoid the build-up of static electricity – Ref JEDEC/JESD625-A and JEDEC/J-STD-033.



APTB1612CGKQWDF Green

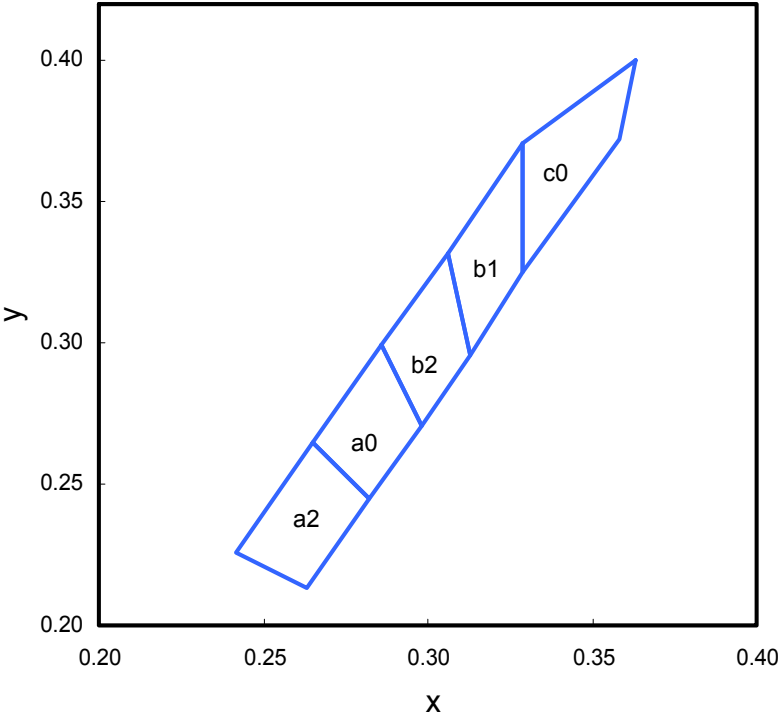


White



APT B1612CGKQWDF

White CIE

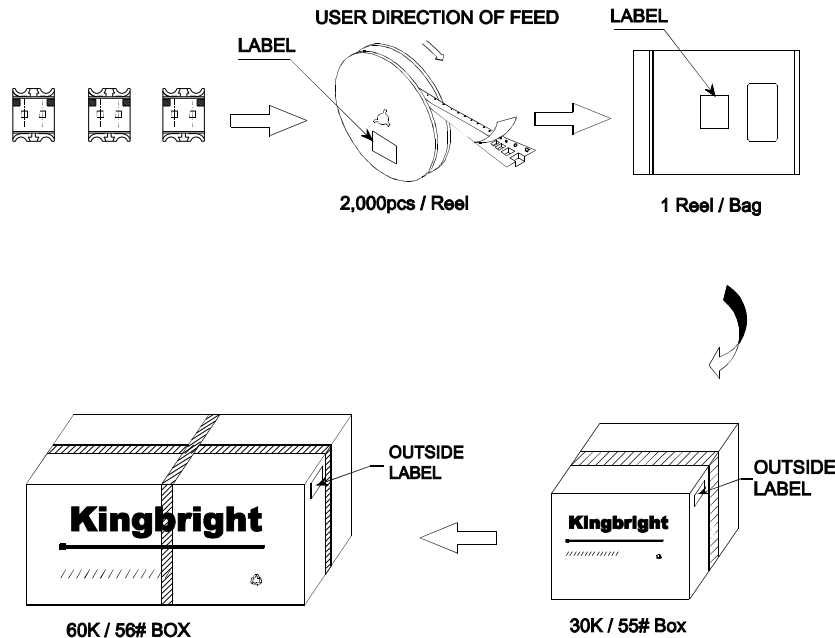




| x y | | | x y | | | x y | | |
|-----|-------|-------|-----|-------|-------|-----|-------|-------|
| a2 | 0.263 | 0.213 | a0 | 0.282 | 0.245 | b2 | 0.298 | 0.271 |
| | 0.282 | 0.245 | | 0.298 | 0.271 | | 0.313 | 0.296 |
| | 0.265 | 0.265 | | 0.286 | 0.299 | | 0.306 | 0.332 |
| | 0.242 | 0.226 | | 0.265 | 0.265 | | 0.286 | 0.299 |
| b1 | 0.313 | 0.296 | c0 | 0.329 | 0.325 | | | |
| | 0.329 | 0.325 | | 0.358 | 0.372 | | | |
| | 0.329 | 0.371 | | 0.363 | 0.400 | | | |
| | 0.306 | 0.332 | | 0.329 | 0.371 | | | |

Notes:
Shipment may contain more than one chromaticity regions.
Orders for single chromaticity region are generally not accepted.
Measurement tolerance of the chromaticity coordinates is ±0.01.

PACKING & LABEL SPECIFICATIONS

APTB1612CGKQWDF



| | | | |
|---|--|-----------------------------|---|
| Kingbright | | XXXXXXXXXX-XXXX |  |
| P/NO: XXXXXXXX | | | |
| QTY: XXXXpcs | | | |
| S/N: XXXX | | | |
| CODE: XXX | | | |
| COUNTRY: CN | | QC DATE: XXX XX XXXX PASSED | |
| LOT NO: | | | |
|  | | | |
| XXXXXXXXXX-XXXX | | | |
| | | | 1 RoHS Compliant |

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