



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: APTF1616SEEZGQBDC

Hyper Red
Green
Blue

Features

- 1.6mmX1.6mm SMT LED, 0.7mm thickness.
- Low power consumption.
- One red, one green and one blue chips in one package.
- Can produce any color in visible spectrum, including white light.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

Description

The Hyper Red source color devices are made with AlGaInP on GaAs substrate Light Emitting Diode.

The Green source color devices are made with InGaN on Sapphire Light Emitting Diode.

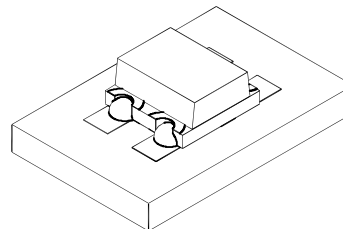
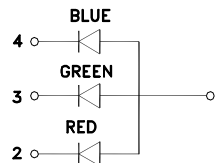
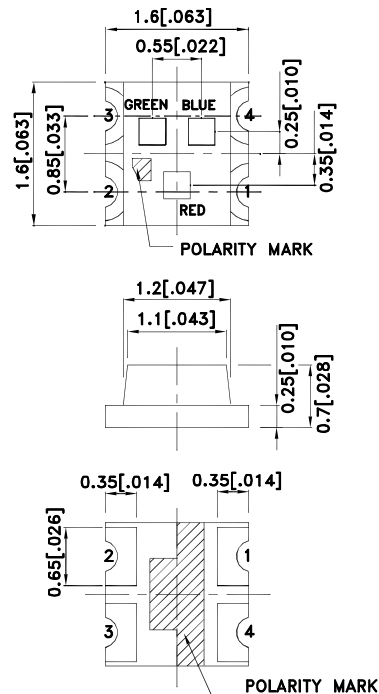
The Blue source color devices are made with InGaN Light Emitting Diode.

Static electricity and surge damage the LEDs.

It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery 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. | Dice | Lens Type | Iv (mcd) [2] @ 20mA | | Viewing Angle [1] |
|------------------|---------------------|-------------|------------------------|------|----------------------|
| | | | Min. | Typ. | 2θ1/2 |
| APTF1616SEEZQBDC | Hyper Red (AlGaInP) | WATER CLEAR | 180 | 400 | 120° |
| | Green (InGaN) | | 70 | 180 | |
| | Blue (InGaN) | | 36 | 100 | |

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%.

Electrical / Optical Characteristics at TA=25°C

| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|--------|--------------------------|----------------------------|-------------------|-----------------|-------|-----------------|
| λpeak | Peak Wavelength | Hyper Red Green Blue | 630 515 468 | | nm | If=20mA |
| λD [1] | Dominant Wavelength | Hyper Red Green Blue | 621 525 470 | | nm | If=20mA |
| Δλ1/2 | Spectral Line Half-width | Hyper Red Green Blue | 20 30 25 | | nm | If=20mA |
| C | Capacitance | Hyper Red Green Blue | 25 45 100 | | pF | Vf=0V;f=1MHz |
| Vf [2] | Forward Voltage | Hyper Red Green Blue | 2 3.3 3.3 | 2.5 4.1 4 | V | If=20mA |
| IR | Reverse Current | Hyper Red Green Blue | | 10 10 10 | uA | VR=5V |

Notes:

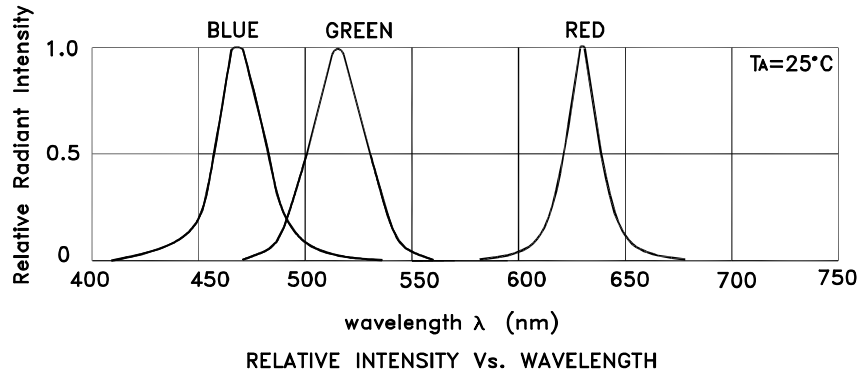
1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

Absolute Maximum Ratings at TA=25°C

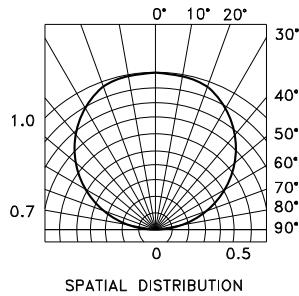
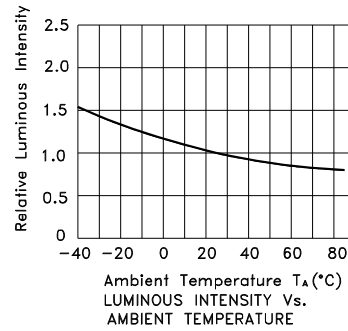
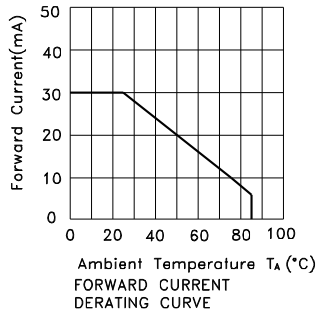
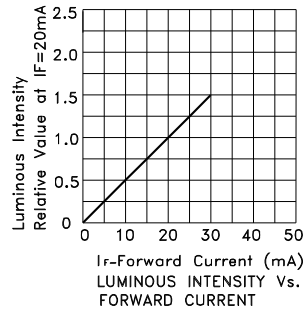
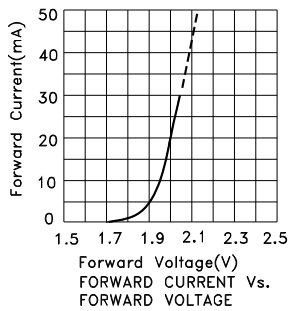
| Parameter | Hyper Red | Green | Blue | Units |
|--------------------------|----------------|-------|------|-------|
| Power dissipation | 75 | 102.5 | 120 | mW |
| DC Forward Current | 30 | 25 | 30 | mA |
| Peak Forward Current [1] | 195 | 150 | 150 | mA |
| Reverse Voltage | 5 | | | V |
| Operating Temperature | -40°C To +85°C | | | |
| Storage Temperature | -40°C To +85°C | | | |

Note:

1. 1/10 Duty Cycle, 0.1ms Pulse Width.

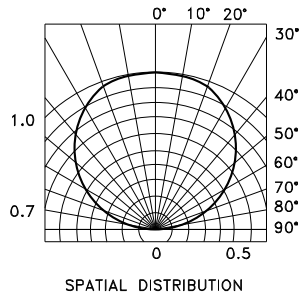
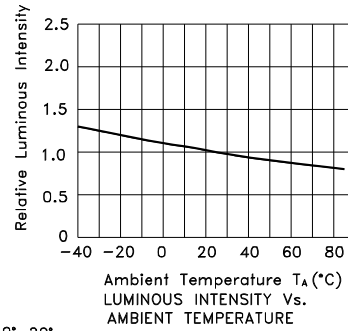
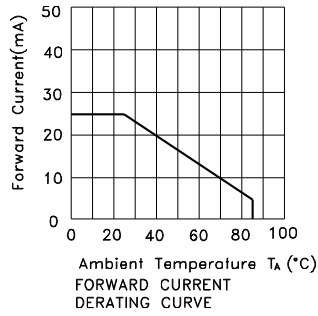
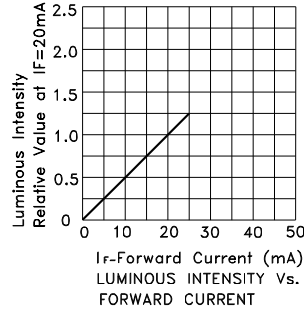
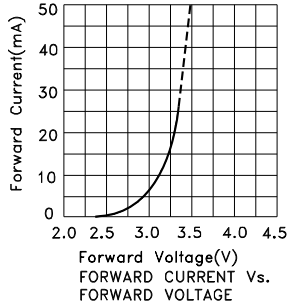


APTF1616SEEZGQBC
Hyper Red



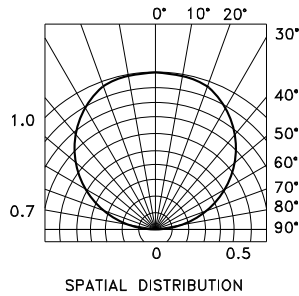
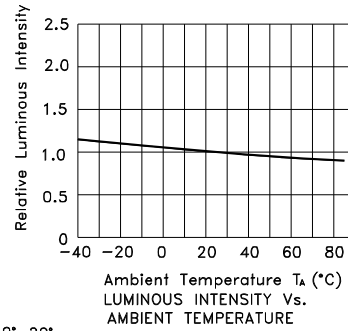
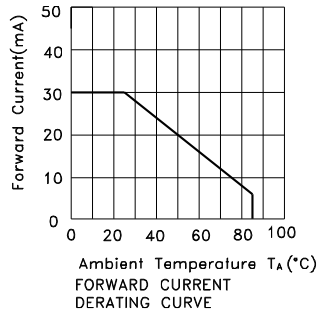
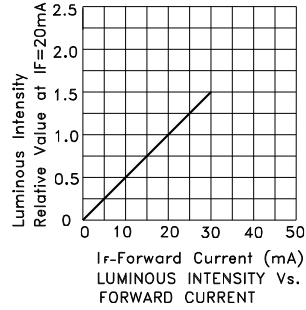
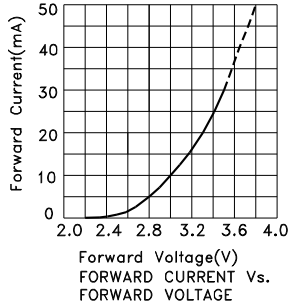
Kingbright

Green



Kingbright

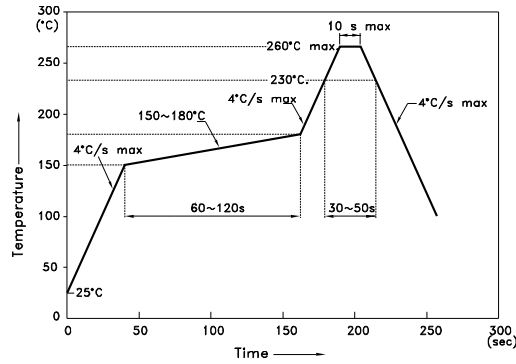
Blue



APTF1616SEEZGQBC

Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

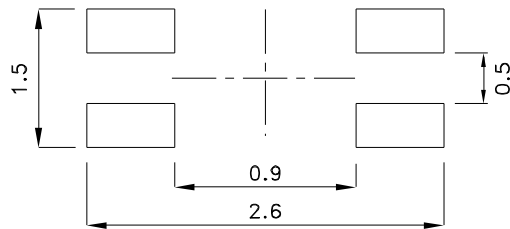
Reflow Soldering Profile For Lead-free SMT Process.



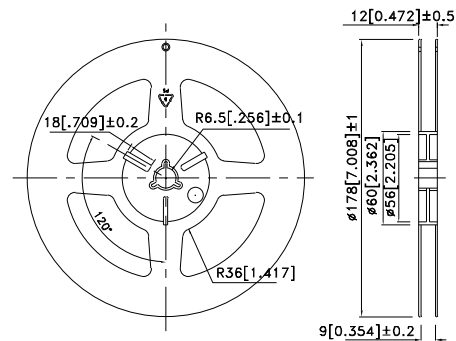
NOTES:

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

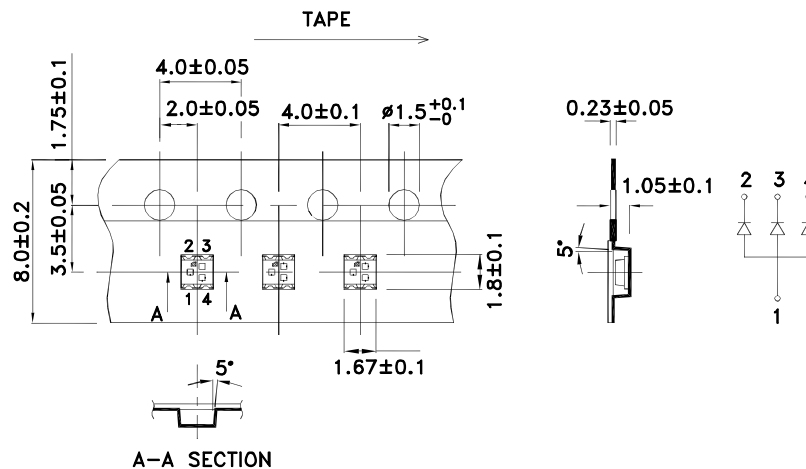
Recommended Soldering Pattern (Units : mm; Tolerance: ± 0.1)



Reel Dimension



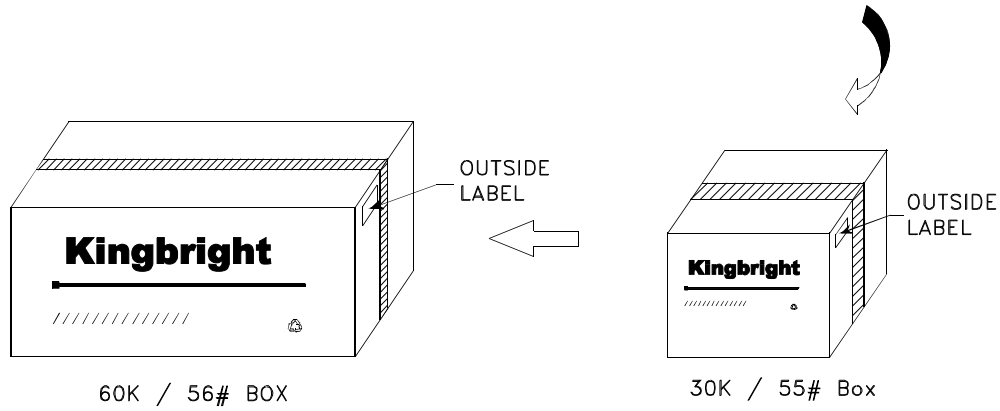
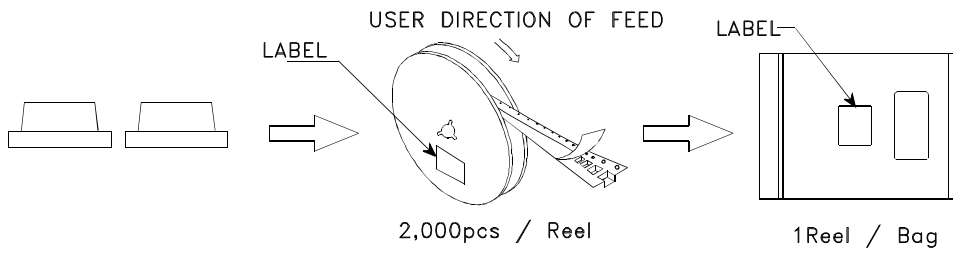
Tape Dimensions (Units : mm)




Kingbright

PACKING & LABEL SPECIFICATIONS

APTF1616SEEZQBDC



| | | | | |
|---|--|-----|------------|--------|
| Kingbright | | | | |
| P/NO: APTF1616xxx | | | | |
| QTY: 2,000 pcs | Q.C. <table border="1"><tr><td>Q C</td></tr><tr><td>XX XX XXXX</td></tr><tr><td>PASSED</td></tr></table> | Q C | XX XX XXXX | PASSED |
| Q C | | | | |
| XX XX XXXX | | | | |
| PASSED | | | | |
| S/N: XXXX | | | | |
| CODE: XXX | | | | |
| LOT NO: | | | | |
|  | | | | |
| RoHS Compliant | | | | |