

PRELIMINARY SPEC

Part Number: APTD3216QWF/F

White



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

**Features**

- 3.2mmX1.6mm SMT LED, 1.8mm thickness.
- Low power consumption.
- Ideal for backlight and indicator.
- Various colors and lens types available.
- Package: 2000pcs / reel .
- Moisture sensitivity level : level 3.
- RoHS compliant.

**Description**

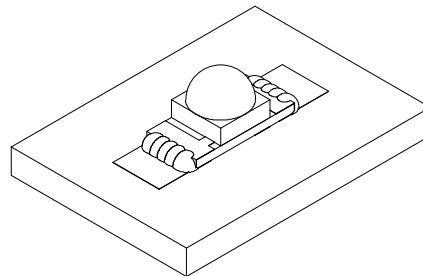
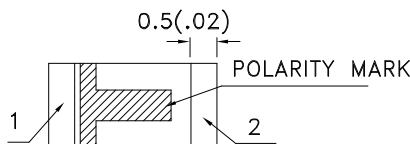
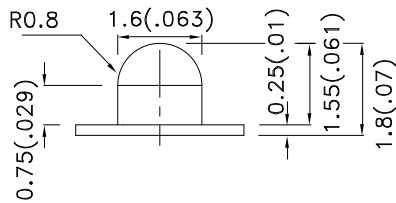
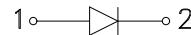
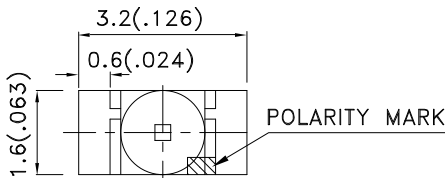
The source color devices are made with InGaN Light Emitting Diode.

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. Specifications are subject to change without 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]<br>@ 20mA |      | Viewing<br>Angle [1] |
|---------------|---------------|--------------------|------------------------|------|----------------------|
|               |               |                    | Min.                   | Typ. | 2θ1/2                |
| APTD3216QWF/F | White (InGaN) | YELLOW FLUORESCENT | 180                    | 370  | 175°                 |

Notes:

- θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 of the optical peak value.
- Luminous intensity/ luminous Flux: +/-15%.

## Electrical / Optical Characteristics at TA=25°C

| Symbol             | Parameter                | Device | Typ. | Max. | Units | Test Conditions           |
|--------------------|--------------------------|--------|------|------|-------|---------------------------|
| V <sub>F</sub> [1] | Forward Voltage          | White  | 3.3  | 4.0  | V     | I <sub>F</sub> =20mA      |
| I <sub>R</sub>     | Reverse Current          | White  |      | 10   | uA    | V <sub>R</sub> = 5V       |
| x [2]              | Chromaticity Coordinates | White  | 0.31 |      |       |                           |
| y [2]              |                          |        | 0.31 |      |       |                           |
| C                  | Capacitance              | White  | 100  |      | pF    | V <sub>F</sub> =0V;f=1MHz |

Notes:

- Forward Voltage: +/-0.1V.
- Measurement tolerance of the chromaticity coordinates is ±0.02.

## Absolute Maximum Ratings at TA=25°C

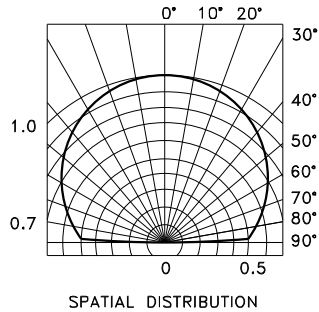
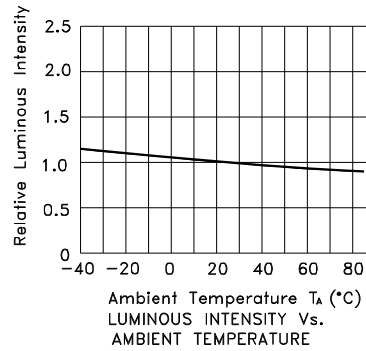
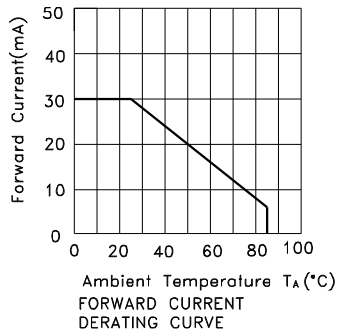
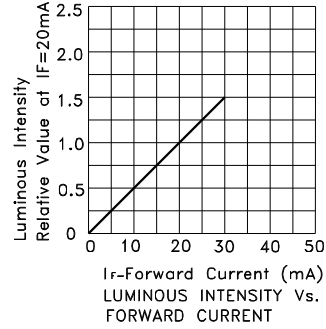
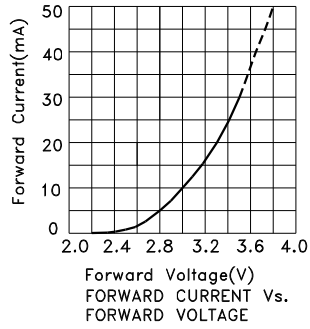
| Parameter                | White          | Units |
|--------------------------|----------------|-------|
| Power dissipation        | 120            | mW    |
| DC Forward Current       | 30             | mA    |
| Peak Forward Current [1] | 150            | mA    |
| Reverse Voltage          | 5              | V     |
| Operating Temperature    | -40°C To +85°C |       |
| Storage Temperature      | -40°C To +85°C |       |

Note:

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

White

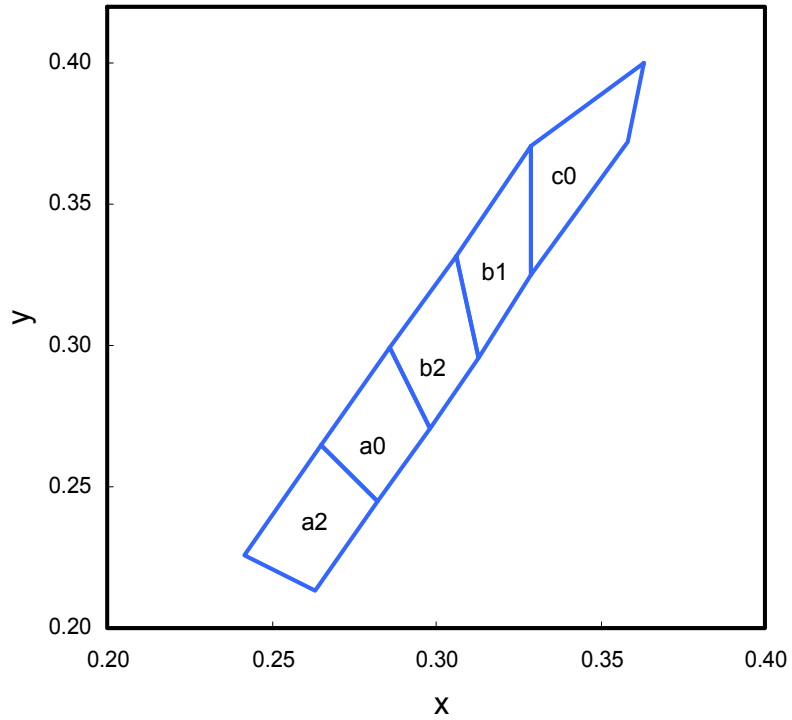
APTD3216QWF/F



White

APTD3216QWF/F

## White CIE

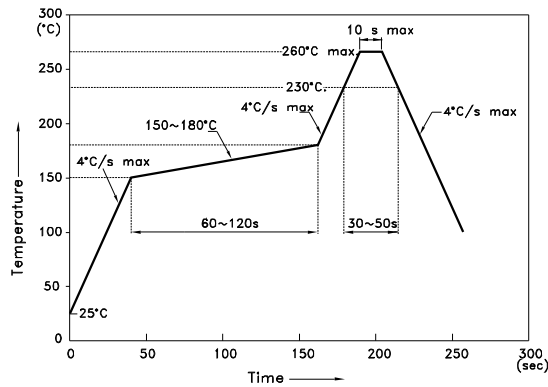


|    | x     | y     |    | x     | y     |    | x     | y     |
|----|-------|-------|----|-------|-------|----|-------|-------|
| a2 | 0.263 | 0.213 | a0 | 0.282 | 0.245 | b2 | 0.298 | 0.271 |
|    | 0.282 | 0.245 |    | 0.298 | 0.271 |    | 0.313 | 0.296 |
|    | 0.265 | 0.265 |    | 0.286 | 0.299 |    | 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 |    |       |       |

## APTD3216QWF/F

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.

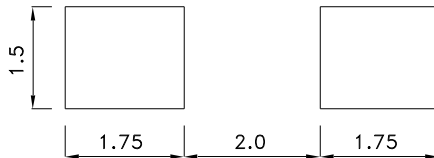
Reflow Soldering Profile For Lead-free SMT Process.



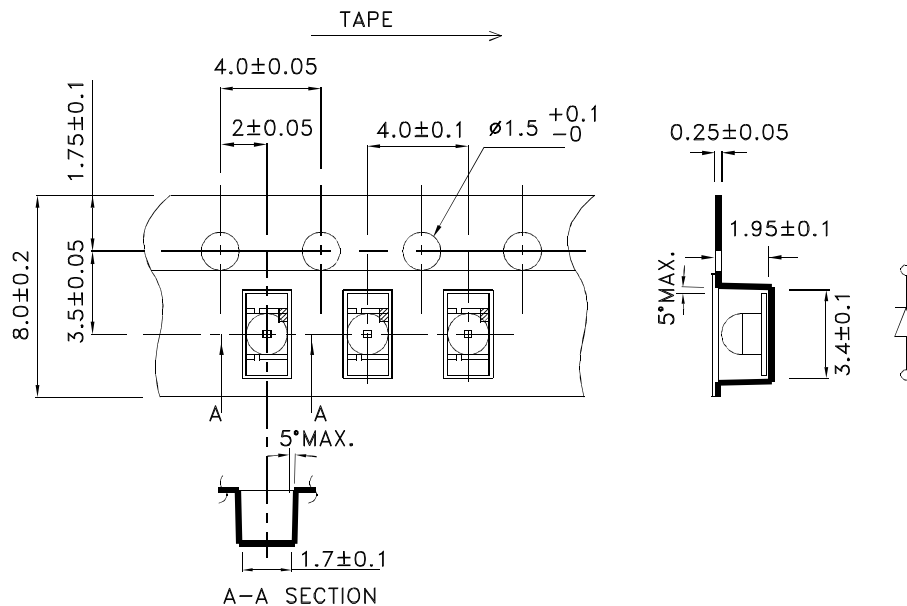
NOTES:

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)



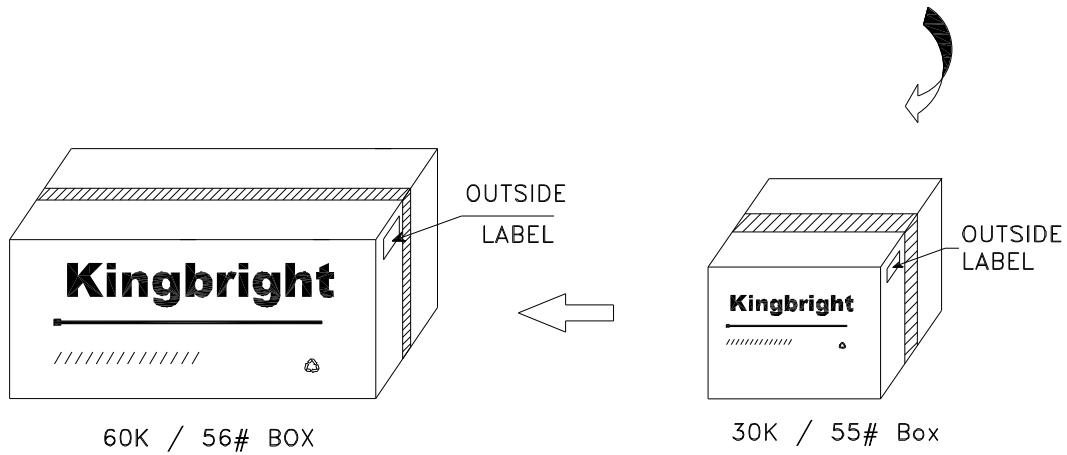
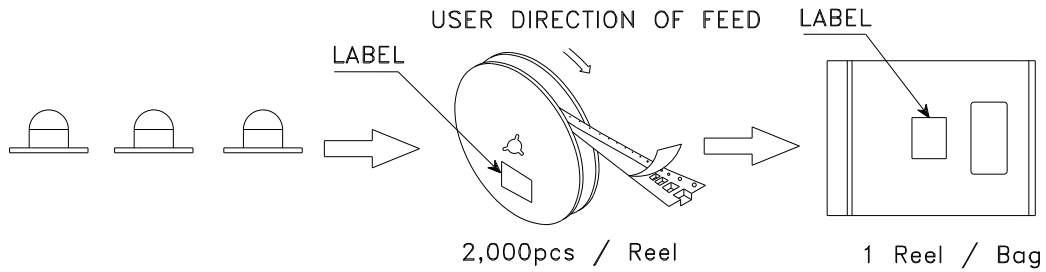
### Tape Dimensions (Units : mm)




# Kingbright

## PACKING & LABEL SPECIFICATIONS

APTD3216QWF/F



|  |  |
|--|--|
| <h1>Kingbright</h1>  |  |
| P/NO: APTD3216xxx  |  |
| QTY: 2,000 pcs   | Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Q C<br/>xx xx xxxx<br/>PASSED</span> |
| S/N: XXXX  |  |
| CODE: XXX  |  |
| LOT NO:  |  |
| <br>xxxxxxxxxxxxxxxxxxxxxxxxxxxx |  |
| RoHS Compliant   |  |