## ATTENTION

OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

## Features

$\bullet 3.2 \mathrm{~mm} \times 1.6 \mathrm{~mm}$ SMT LED, 1.05 mm thickness.

- Low power consumption.
- Wide viewing angle.
- Ideal for backlight and indicator.
- Vavrious colors and lens types available.
-Package : 2000pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.


## Description

The Blue source color devices are made with InGaN on SiC 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



$$
1 \circ-2
$$



## 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.

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## Selection Guide

| Part No. | Dice | Lens Type | Iv (mcd) [2] <br> @ 20mA |  | Viewing <br> Angle [1] |
| :--- | :--- | :--- | :---: | :---: | :---: |
|  |  |  |  | Min. | Typ. |
| 201/2 |  |  |  |  |
| APTR3216PBC/A | Blue (InGaN) | WATER CLEAR | 18 | 60 | $120^{\circ}$ |

Notes:

1. $\theta 1 / 2$ is the angle from optical centerline where the luminous intensity is $1 / 2$ the optical centerline value.
2. Luminous intensity/ luminous Flux: $+/-15 \%$.

Electrical / Optical Characteristics at TA=25 ${ }^{\circ} \mathrm{C}$

| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\lambda$ peak | Peak Wavelength | Blue | 468 |  | nm | $\mathrm{IF}=20 \mathrm{~mA}$ |
| $\lambda \mathrm{D}[1]$ | Dominant Wavelength | Blue | 470 |  | nm | $\mathrm{IF}=20 \mathrm{~mA}$ |
| $\Delta \lambda 1 / 2$ | Spectral Line Half-width | Blue | 21 |  | nm | $\mathrm{IF}=20 \mathrm{~mA}$ |
| C | Capacitance | Blue | 100 |  | pF | $\mathrm{VF}=0 \mathrm{~V} ; \mathrm{f}=1 \mathrm{MHz}$ |
| $\mathrm{VF}[2]$ | Forward Voltage | Blue | 3.2 | 4 | V | $\mathrm{IF}=20 \mathrm{~mA}$ |
| IR | Reverse Current | Blue |  | 10 | uA | $\mathrm{VR}=5 \mathrm{~V}$ |

Notes:

1. Wavelength: $+/-1 \mathrm{~nm}$.
2. Forward Voltage: $+/-0.1 \mathrm{~V}$.

Absolute Maximum Ratings at $\mathrm{TA}=25^{\circ} \mathrm{C}$

| Parameter | Blue | Units |
| :--- | :--- | :---: |
| Power dissipation | 120 | mW |
| DC Forward Current | 30 | mA |
| Peak Forward Current [1] | 100 | mA |
| Reverse Voltage | 5 | V |
| Operating Temperature | $-40^{\circ} \mathrm{C} \mathrm{To}+85^{\circ} \mathrm{C}$ |  |
| Storage Temperature | $-40^{\circ} \mathrm{C} \mathrm{To}+85^{\circ} \mathrm{C}$ |  |

Note:

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

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RELATIVE INTENSITY Vs. WAVELENGTH

## Blue

APTR3216PBC/A


FORWARD CURRENT Vs
FORWARD VOLTAGE





SPATIAL DISTRIBUTION

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## APTR3216PBC/A

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 $245^{\circ} \mathrm{C}\left(+/-5^{\circ} \mathrm{C}\right)$. The maximum soldering temperature should be limited to $260^{\circ} \mathrm{C}$.
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: $\pm \mathbf{0 . 1}$ )


Tape Dimensions
(Units : mm)

TAPE


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PACKING \& LABEL SPECIFICATIONS
APTR3216PBC/A


## Kingbright

P/NO: APTR3216xxx


