# Kingbright

**4.5x2mm SMD CHIP LED LAMP**

APD2520MBC03          BLUE

## Features

● 4.5x2mm SMT LED,0.5mm THICKNESS.

● LOW POWER CONSUMPTION.

● IDEAL FOR BACKLIGHT AND INDICATOR.

● VARIOUS COLORS AND LENS TYPES AVAILABLE.
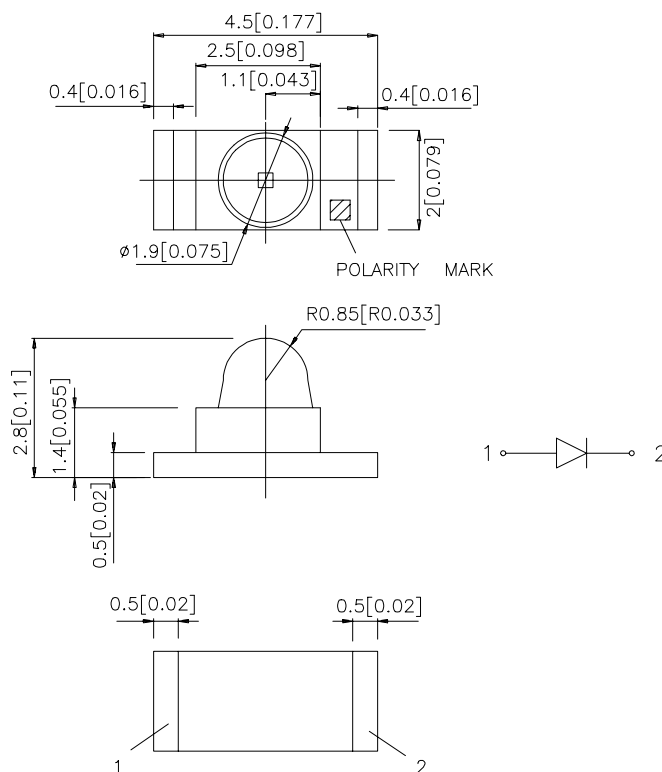
● PACKAGE : 1000PCS/REEL.

## Description

The Blue source color devices are made with GaN 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



4.5[0.177]
2.5[0.098]
1.1[0.043]
0.4[0.016]
0.4[0.016]
2[0.079]
φ1.9[0.075]
POLARITY   MARK

R0.85[R0.033]
2.8[0.11]
1.4[0.055]
0.5[0.02]

1        2

0.5[0.02]
0.5[0.02]

1        2

Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.2(0.008") unless otherwise noted.
3. Specifications are subject  to change without notice.

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## Selection Guide

| Part No. | Dice | Lens Type | Iv (mcd) @ 20 mA | | Viewing Angle |
| | | | Min. | Typ. | 2θ1/2 |
|---|---|---|---|---|---|
| APD2520MBC03 | BLUE  (GaN) | WATER CLEAR | 10 | 40 | 20° |

Note:
1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
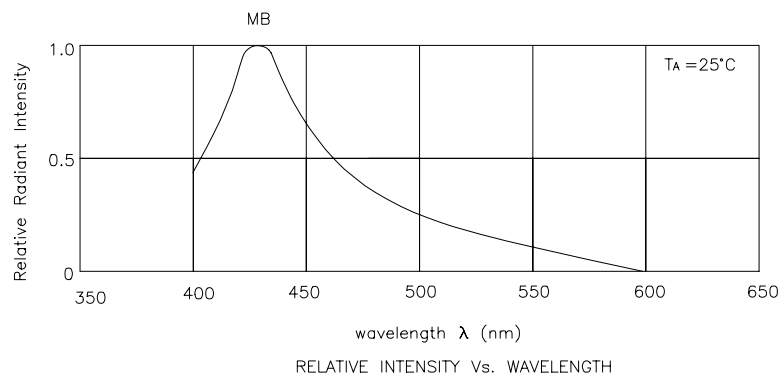
## Electrical / Optical Characteristics at $T_A$=25°C

| Symbol | Parameter | Device | Typ. | Max. | Units | Test Conditions |
|---|---|---|---|---|---|---|
| λpeak | Peak  Wavelength | Blue | 430 | | nm | $I_F$=20mA |
| λ D | Dominate Wavelength | Blue | 466 | | nm | $I_F$=20mA |
| Δλ1/2 | Spectral Line  Half-width | Blue | 60 | | nm | $I_F$=20mA |
| C | Capacitance | Blue | 100 | | pF | $V_F$=0V;f=1MHz |
| $V_F$ | Forward Voltage | Blue | 3.8 | 4.5 | V | $I_F$=20mA |
| $I_R$ | Reverse Current | Blue | | 10 | uA | $V_R$ = 5V |

## Absolute Maximum Ratings at $T_A$=25°C

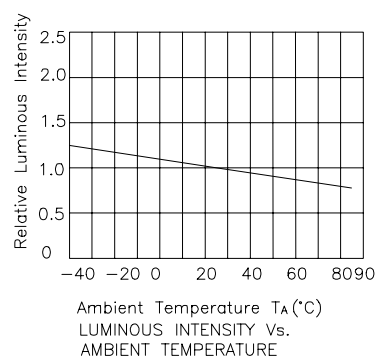| Parameter | Blue | Units |
|---|---|---|
| Power dissipation | 105 | mW |
| DC Forward Current | 30 | mA |
| Peak Forward Current [1] | 150 | mA |
| Reverse Voltage | 5 | V |
| Operating /Storage Temperature | -40°C To +85°C | |

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

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MB

RELATIVE INTENSITY Vs. WAVELENGTH

(Chart: Relative Radiant Intensity vs. wavelength λ (nm), TA = 25°C)

**Blue**       **APD2520MBC03**

FORWARD CURRENT Vs.
FORWARD VOLTAGE

(Chart: Forward Current (mA) vs. Forward Voltage(V))

LUMINOUS INTENSITY Vs.
FORWARD CURRENT

(Chart: Luminous Intensity Relative Value at IF=20mA vs. IF—Forward Current (mA))

FORWARD CURRENT
DERATING CURVE

(Chart: Forward Current (mA) vs. Ambient Temperature TA (°C))

LUMINOUS INTENSITY Vs.
AMBIENT TEMPERATURE

(Chart: Relative Luminous Intensity vs. Ambient Temperature TA (°C))

SPATIAL DISTRIBUTION

(Polar chart: 0°, 10°, 20°, 30°, 40°, 50°, 60°, 70°, 80°, 90°)

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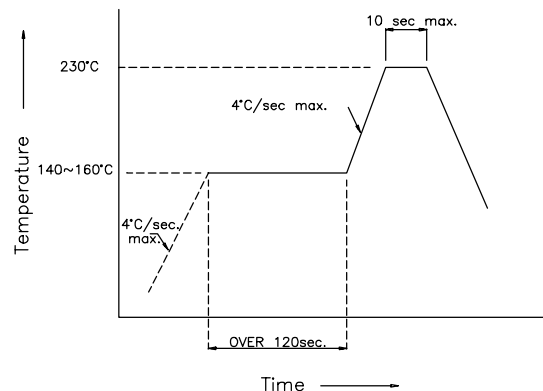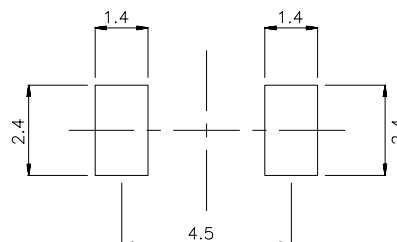## APD2520MBC03
## SMT Reflow Soldering Instructions

Number of reflow process shall be less than 2 times and cooling
process to normal temperature is required between first and
second soldering process.



## Recommended Soldering Pattern
## (Units : mm)



## Tape Specifications
## (Units : mm)