

# SHENZHEN BOND OPTOELECTRONICS CO., LTD.

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## SPECIFICATION FOR APPROVAL

Customer: \_\_\_\_\_

Description:           SMD  LED          

Model:                   BDS-0603QBC                  

No.:                           SD0001                          

Date:                           2006.04.06                          

Enclosure is the specification

SHENZHEN BOND OPTOELECTRONICS CO., LTD.			
Production Dept.	Quality Dept.	Engineering Dept.	Marketing Dept.

APPROVED SIGNATURES			

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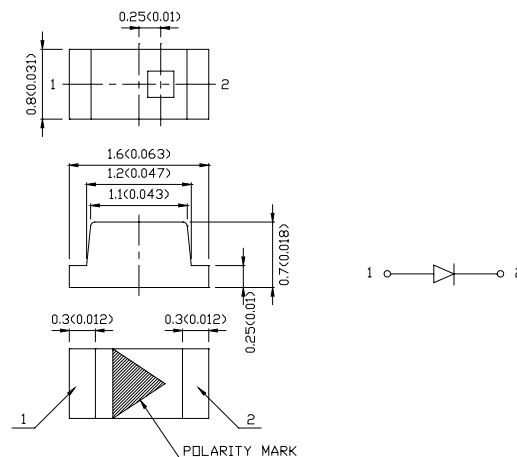
Website: <http://www.Bond-led.com>

**BDS-0603QBC BLUE****Features**

- 1)1.6mmx0.8mm SMT LED, 0.7mm THICKNESS.
- 2)LOW POWER CONSUMPTION.
- 3)WIDE VIEWING ANGLE.
- 4)IDEAL FOR BACKLIGHT AND INDICATOR.
- 5)VARIOUS COLORS AND LENS TYPES AVAILABLE.
- 6)PACKAGE: 3000PCS/REEL.

**Description**

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

**Package Dimensions****Notes:**

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.1$  ( 0.004" ) unless otherwise noted.
3. Specifications are subject to change without notice.

**Selection Guide**

Part No.	Device	Lens Type	Iv (mcd) @20mA		Viewing Angle
			Min.	Typ.	2 $\theta$ 1/2
BDS-0603QBC	BLUE <GaN>	Water Clear	70	130	120°

Note:

1.  $\theta$  1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.

**Electrical / Optical Characteristics at T<sub>A</sub>=25° C**

Symbol	Parameter	Device	Typ.	Max.	Units	Test Conditions
$\lambda$ peak	Peak Wavelength	BLUE	475		nm	I <sub>F</sub> =20mA
$\lambda$ D	Dominate Wavelength	BLUE	472		nm	I <sub>F</sub> =20mA
$\Delta \lambda$ 1/2	Spectral Line Half-width	BLUE	25		nm	I <sub>F</sub> =20mA
C	Capacitance	BLUE	105		P <sub>F</sub>	V <sub>F</sub> =0V;f=1MHz
V <sub>F</sub>	Forward	BLUE	3.1	3.3	V	I <sub>F</sub> =20mA
I <sub>R</sub>	Reverse Current	BLUE		10	uA	V <sub>R</sub> =5V

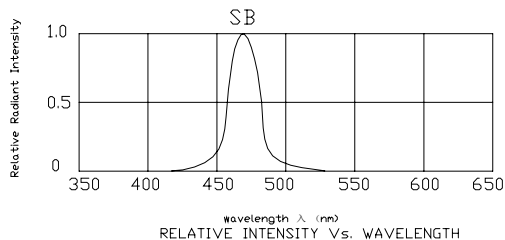
**Absolute Maximum Ratings at T<sub>A</sub>=25° C**

Parameter	BLUE	Units
Power dissipation	105	mW
DC Forward Current	30	mA
Peak Forward Current (1)	120	mA
Reverse Voltage	5	V
Operating/Storage Temperature	-40° C To +85° C	

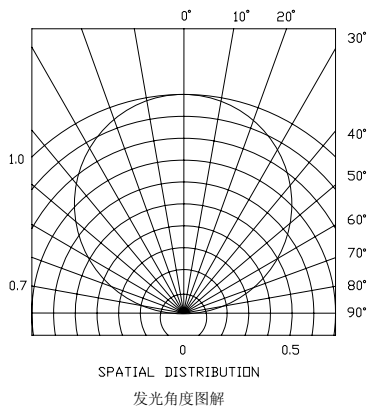
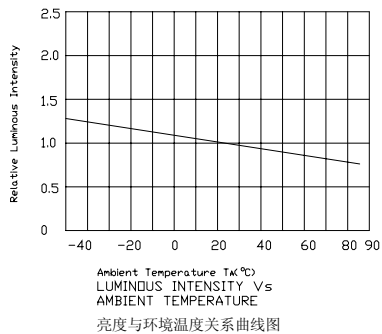
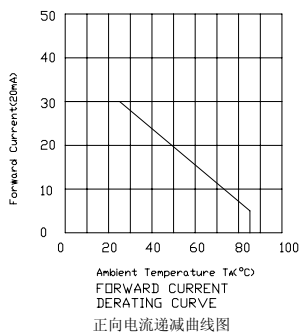
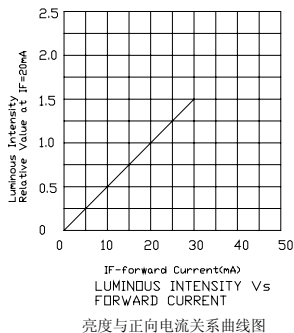
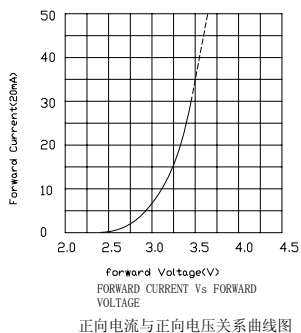
Note:

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

Relative Intensity Vs Wavelength Chart



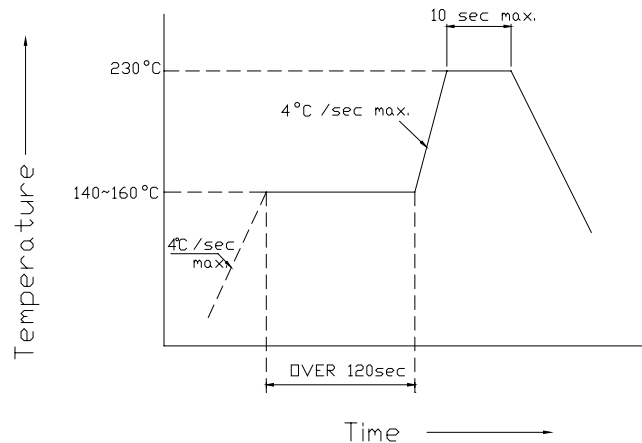
BDS-0603QBC



**BDS-0603QBC**

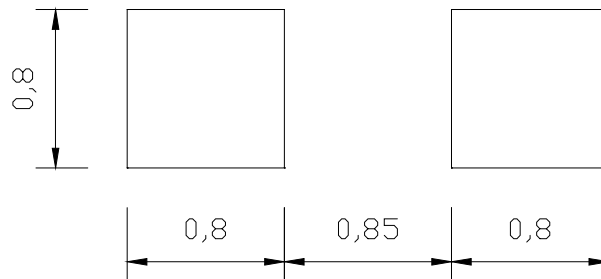
**SMT Reflow Soldering Instructions**

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



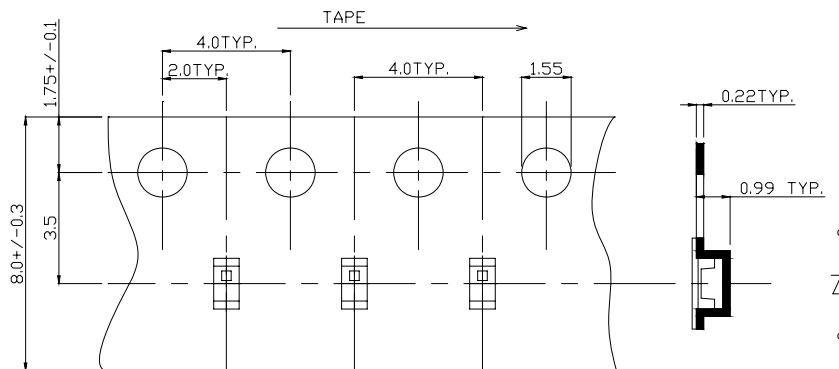
**Recommended Soldering Pattern**

<Units:mm>



**Tape Specifications**

<Units:mm>



**RELIABILITY****(1) TEST ITEMS AND RESULTS**

Test Item	Standard Test Method	Test Conditions	Note	Number of Damaged
Resistance to Soldering Heat (Reflow Soldering)	JEITA ED-4701 300 301	Tsld=260°C, 10sec. (Pre treatment 30°C,70%,168hrs)	2 times	0/50
Solderability (Reflow Soldering)	JEITA ED-4701 300 303	Tsld=215±5°C, 3sec. (Leader Solder)	1 time over 95%	0/50
Thermal Shock	JEITA ED-4701 300 307	-40°C~100°C 5min. 5min.	100cycles	0/50
Temperature Cycle	JEITA ED-4701 100 105	-40°C~25°C~100°C~25°C 30min. 5min. 30min. 5min.	100cycles	0/50
Moisture Resistance Cycle	JEITA ED-4701 200 203	25°C~65°C~-10°C 90%RH 24hrs./1cycle	10 cycles	0/50
High Temperature Storage	JEITA ED-4701 200 201	Ta=100°C	1000 hrs	0/50
Temperature Humidity Storage	JEITA ED-4701 100 103	Ta=60°C, 90%RH	1000 hrs	0/50
Low Temperature Storage	JEITA ED-4701 200 202	Ta=-40°C	1000 hrs	0/50
Steady State Operating Life		Ta=25°C, If=20mA	1000 hrs	0/50
Steady State Operating Life of High Temperature		Ta=85°C, If=5mA	1000 hrs	0/50
Steady State Operating Life of High Humidity Heat		60°C, 90%RH, If=15mA	500 hrs	0/50
Steady State Operating Life of Low Temperature		Ta=-30°C, If=20mA	1000 hrs	0/50
Drop		H=75cm	3 cycles	0/50
Substrate Bending	JEITA ED-4702	3mm, 5 ± 1 sec.	1 time	0/50
Stick	JEITA ED-4702	5N, 10 ± 1 sec.	1 time	0/50

**(2) CRITERIA FOR JUDGING THE DAMAGE**

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	V <sub>F</sub>	If=20mA	-	U.S.L.*)X1.1
Reverse Current	I <sub>R</sub>	VR=5V	-	U.S.L.*)X2.0
Luminous Intensity	I <sub>V</sub>	If=20mA	L.S.L.***)X0.7	-

\*) U.S.L.: Upper Standard Level

\*\*) L.S.L.: Lower Standard Level

**Intensity And Color Bin Limits**

**(1) Intensity Bin Limits (If=20mA)**

SELECTION CODE FOR SUPER BRIGHT LEDS		
Group	Light intensity in mcd(20mA) BLUE	
	Min.	Max.
G	36	60
M	50	90
N	70	130
H	110	220
P	180	320

Tolerance for each Bin limit is ±0.15.

**(2) Color Bin Limits (If=20mA)**

COLOR CODE FOR BLUE LEDS + DISPLAYS					
Group	Dom. WaveLength (nm)		Group	Dom. WaveLength (nm)	
	min.	max.		min.	max.
1	460	462	6	472	475
2	462	465	7	475	478
3	465	468	8	478	480
4	468	470	9	480	482
5	470	472	10	482	485

Tolerance for each Bin limit is ±0.15.