




**SPECIFICATION SHEET**

<b>SPECIFICATION SHEET NO.</b>	N0521-1615RGBBD168S1
<b>DATE</b>	May 21, 2021
<b>REVISION</b>	A0
<b>DESCRIPTION</b>	SMD LED 1615 series Dimensions: L1.6*W1.6*H0.6mm Color: Red/Green/Blue, White Diffused, Operating Temperature: -40 ~ 85°C Package: 4000pcs/Reel RoHS III and REACH Compliant
<b>CUSTOMER</b>	
<b>CUSTOMER PART NUMBER</b>	
<b>CROSS REF. PART NUMBER</b>	
<b>ORIGINAL PART NUMBER</b>	BND-1615RGB-BD-168
<b>PART CODE</b>	1615RGBBD168S1

<b>VENDOR APPROVE</b>			
Issued/Checked/Approved			
DATE: May 21, 2021			

<b>CUSTOMER APPROVE</b>	
DATE:	

**MAIN FEATURE**

- SMD LED 1615 series Dimensions: L1.6\*W1.6\*H0.6mm
- Wide Viewing Angle 120°
- Reflow Solderable
- High Luminous Intensity and Low Power Dissipation
- Cross main competitors parts
- RoHS/RoHS III compliant



**APPLICATION**

- Optical Indicator
- Indoor Display
- Backlighting in dashboard and switch
- Flat Backlighting for LCD, Symbol and Display

**PART CODE GUIDE**

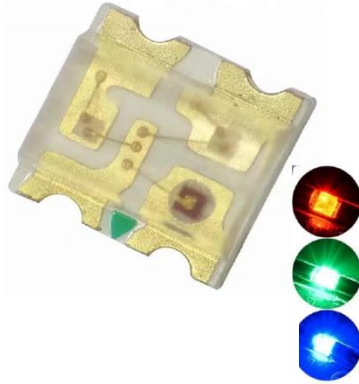
**RFQ**  
Request For Quotation

<b>1615</b>	<b>RGBBD168</b>	<b>S</b>	<b>1</b>
1	2	3	4

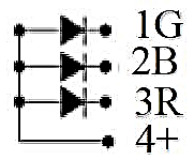
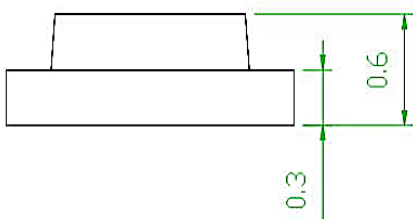
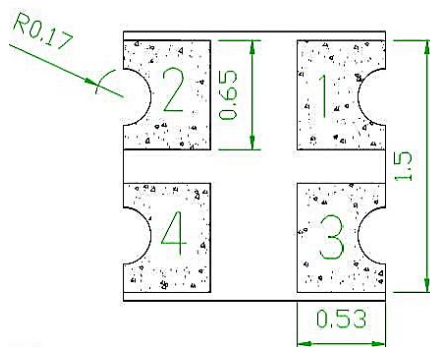
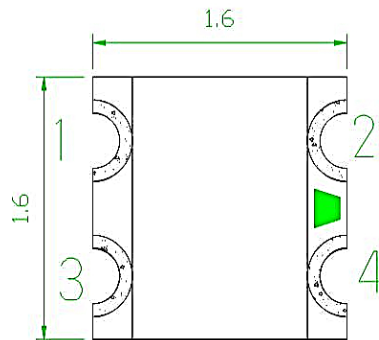
- 1) 1615: Part family Code for SMD LED 1615 series Dimensions: L1.6\*W1.6\*H0.6mm
- 2) RGBD168: Type code for original part number BND-1615RGB-BD-168
- 3) S: Tape/Reel, Package: 4000pcs/reel
- 4) 1: Internal control code, 1 letter (1 ~9) or digits (A~Z)

**DIMENSION (Unit: mm, Tol: +/-0.2)**

Image for reference



**SMD 1615**



**GENERAL PARAMETERS**

Parameter	Part No. Symbol	Value
Original Manufacturer		Oriental Technology
Holder Type	1615	Dimensions L1.6*W1.6*H0.6mm
Dice	RGB	Red (AlGaInP)
		Green (InGan)
		Blue (InGan)
Lens Type		White Diffused
Internal Code	BD	QC Dept. code
Sources Code	168	For IC sources
Luminous Intensity (mcd) @10mA		160 ~220
		210 ~290
		85 ~125
Viewing Angle 2θ1/2		120
Package	S	Tape/Reel, Package: 4000pcs/reel
Internal Control Code	1	Code- 1 letter or digits
RoHS and REACH Status		RoHS III and REACH Compliant
Special code		The customer special requirement Blank: N/A

**Reminds**

- 2θ1/2 is the angle from optical centerline where the luminous intensity is 2θ1/2 the optical centerline value
- The above luminous intensity measurement allowance tolerance ±10%.

**ELECTRONICAL/OPTICAL CHARACTERISTICS @ Ta = 25 °C**

Parameter		Symbol	Unit	Value			Test Condition
				Min	Typ.	Max.	
Forward Voltage	Red	V <sub>F</sub>	V	1.6	-	2.4	I <sub>F</sub> = 20mA
	Green			2.5		3.0	
	Blue			2.5		3.0	
Reverse Current		I <sub>R</sub>	μA			10	V <sub>R</sub> = 5.0V
Dominate Wavelength	Red	λ <sub>d</sub>	nm	620		625	I <sub>F</sub> = 20mA
	Green			520		525	
	Blue			467		472	

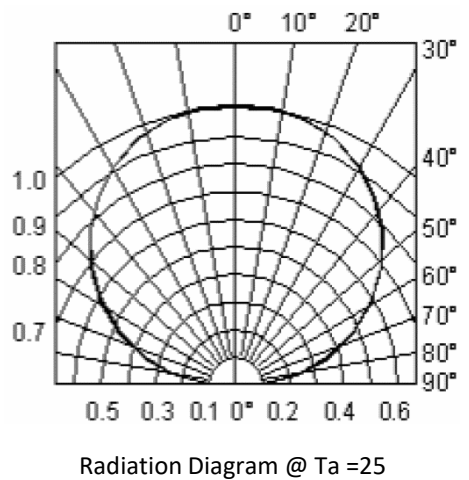
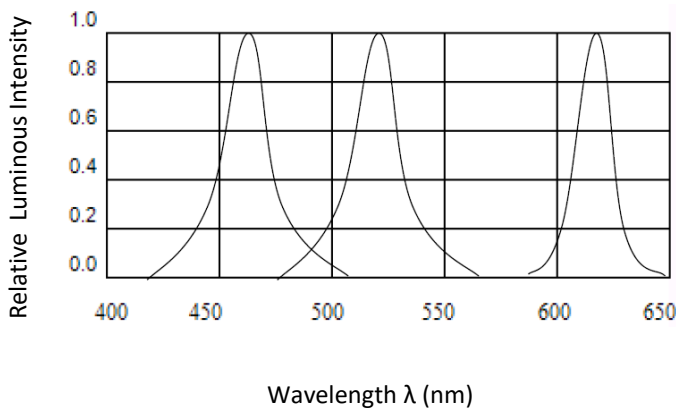
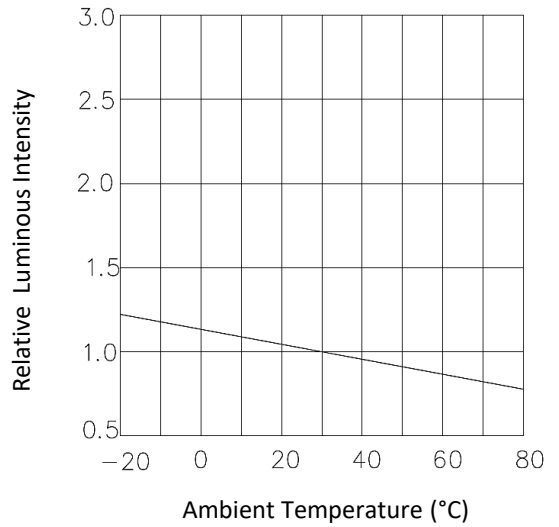
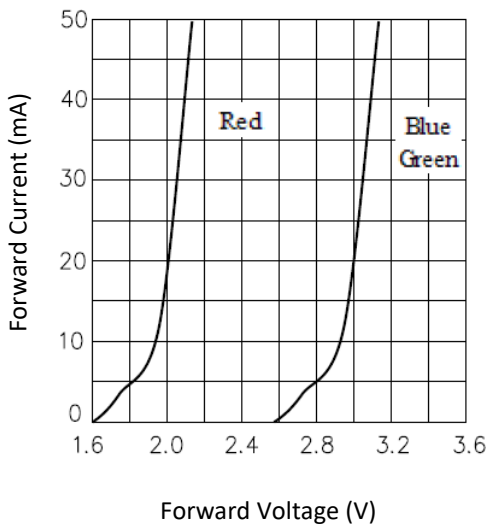
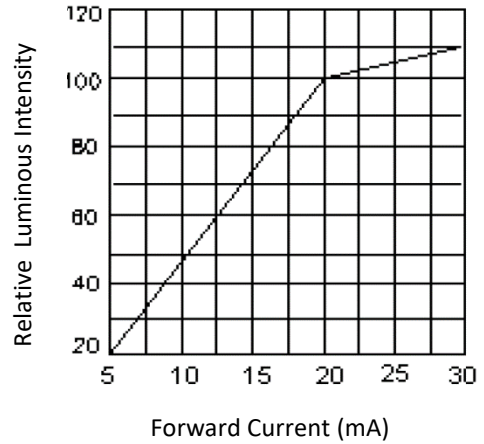
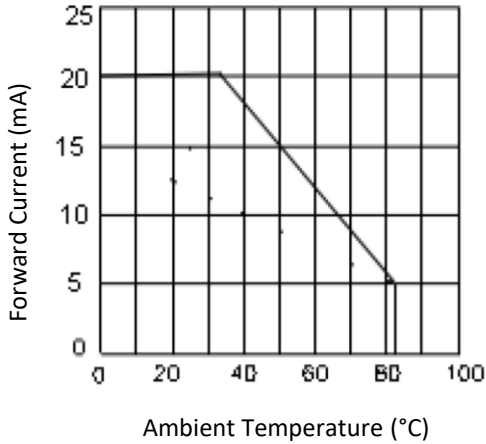
**ABSOLUTE MAXIMUM RATINGS @ Ta = 25 °C**

Parameter		Symbol	Unit	Value		
				Min	Typ.	Max.
Power Dissipation	Red	P <sub>d</sub>	mW		60	
	Green				90	
	Blue				90	
DC Forward Current		I <sub>F</sub>	mA		20	
Peak Forward Current		I <sub>FP</sub>	mA		40	
Reverse Voltage		V <sub>R</sub>	V		5	
Electrostatic Discharge (HBM)	Red	ESD	V		2000	
	Green				2000	
	Blue				2000	
Operating Temperature Range		T <sub>opr</sub>	°C	-40		+85
Storage Temperature Range		T <sub>stg</sub>	°C	-40		+100

**Reminds**

- 1/10 Dut cycle 0.1ms pulse width
- The above forward voltage measurement allowance tolerance ±0.1V.
- The tolerance of Wave Length: ±0.1V.

**TYPICAL OPTICAL CHARACTERISTICS CURVES**



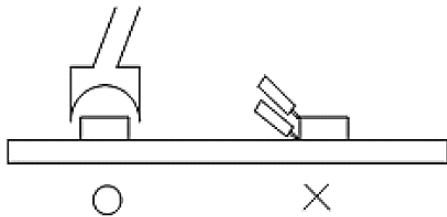


**RELIABILITY TEST ITEMS AND CONDITION**

Test Items	Test Conditions	Requirement
<b>Solderability</b>	Solder Temperature : 240 °C Solder Duration:3.5 +/-0.5 sec.	Solderable Area over 95%
<b>Thermal Shock Followed by High Temperature &amp; High Humidity Cyclic</b>	-40° → 10min. 5 Cycles ↑ ↓ Shift (2~3) min 100 °C → 10min 25 °C ~55 °C ( 90%~ 95%) RH 2 Cycles for 48 hours. Recover for 2 hours.	C = 0 & I **
<b>Resistance for Soldering Heat</b>	Reflow Solder	
<b>DC Operating Life</b>	1000 hours Forward Current: 20 mA	
<b>High Temperature Storage</b>	100 °C → 1000 hrs.	
<b>High Temperature &amp; Humidity Cyclic</b>	25 °C ~55 °C ( 90%~ 95%) RH 6 Cycles for 144 hours. Recover for 2 hours.	

**Reminds**

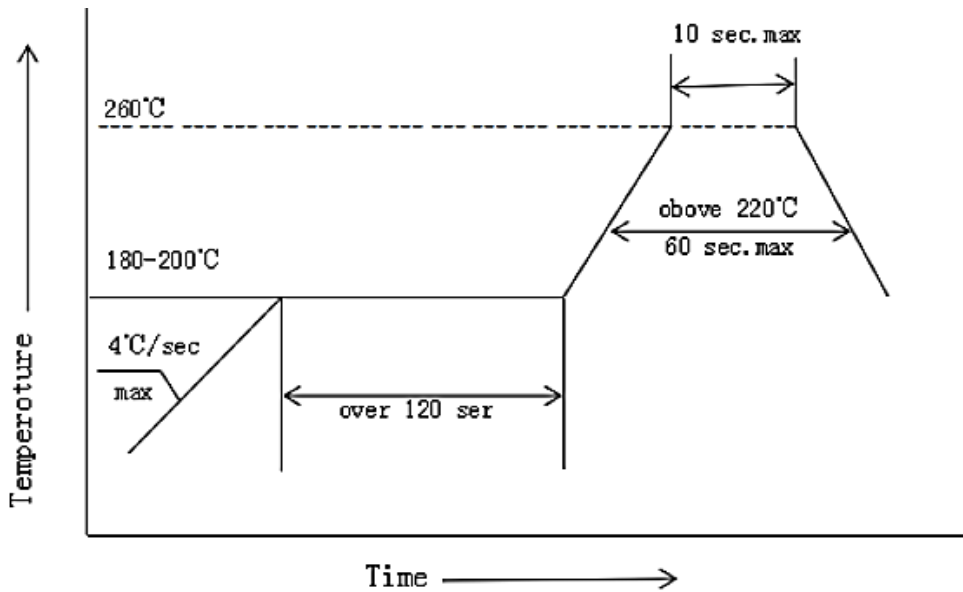
1. The reliability of products shall be satisfied with items listed above
2. Confidence level: 90%; LTPD:10%
3. The technical information shown in the data sheets are limited to the typical characteristics and related circuit samples.

**NOTICE CONDITION**

Items	Test Conditions
<p><b>Soldering by Iron</b></p>	<ol style="list-style-type: none"> <li>1. The temperature of Iron must be lower than 300 °C, 3 second by hand soldering</li> <li>2. The hand solder should be done only one times</li> </ol>
<p><b>Repairing</b></p>	<p>Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed before if the characteristics of LEDS will or not be damaged by repair</p> 
<p><b>Storage</b></p>	<ol style="list-style-type: none"> <li>1. Package is sealed: Recommended storage condition @ 5°C ~30°C and Humidity 90% RH Max. for 24 months</li> <li>2. Package is opened: Recommended storage condition @ 5°C ~30°C and Humidity 60% RH Max. for 1 months</li> </ol>
<p><b>Caution</b></p>	<ol style="list-style-type: none"> <li>1. Don't stack together assembled PCBs containing LEDs. Impact may scratch the silicone lens or damage            </li> <li>2. Not available in the situation of Acidity for PH            </li> </ol>



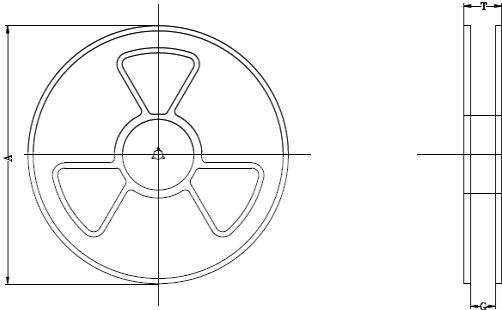
**RECOMMENDED REFLOW SOLDERING**



**Reminds**

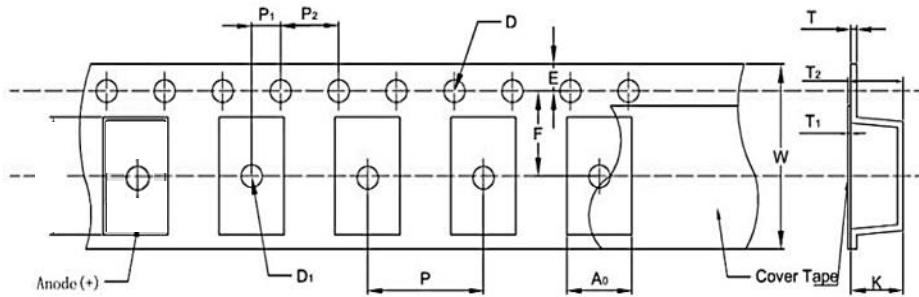
- 1. The times of Reflow Soldering don't exceed 1 times.
- 2. Don't stress on the LEDs during heating

**REEL 7"/180MM DIMENSION (Unit: mm, 4000pcs/Reel)**

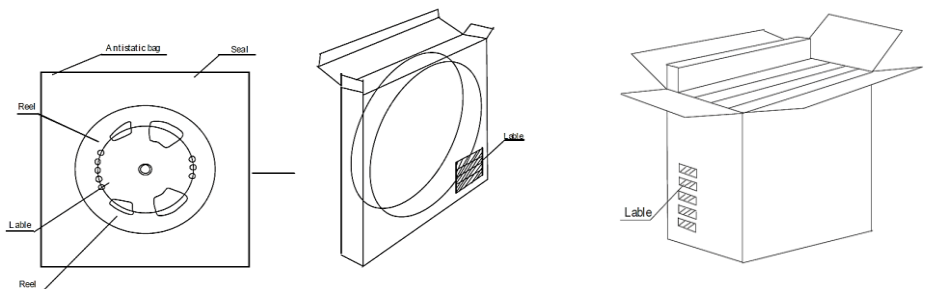
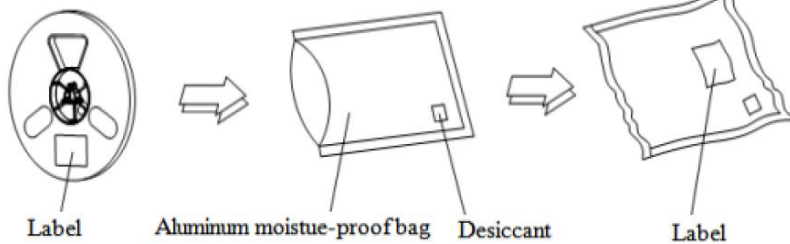


Code	Dimension
A	178.0+/-1.0
T	0.30+/-1.0

**TAPE WIDE 8MM DIMENSION (Unit: mm)**



Code	Dimension
A 0	0.90+/-0.10
K	0.70+/-0.10
W	8.00+/-0.10
E	1.75+/-0.10
F	3.50+/-0.05
P	4.00+/-0.10
P 1	2.00+/-0.05
P2	4.00+/-0.10
D	1.50+/-0.20
D 1	1.10+/-0.10



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