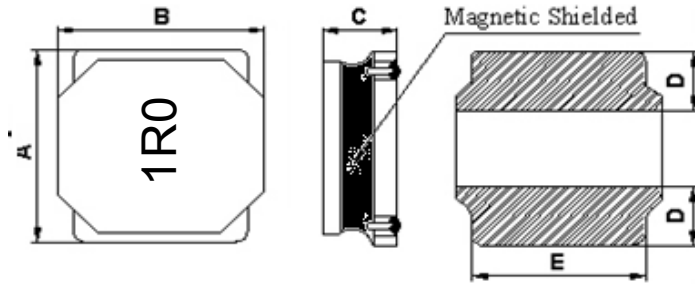


### 1. Dimension



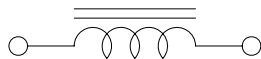
Series	A	B	C	D	E
BCNRL4012	4.0±0.2	4.0±0.2	1.1±0.1	1.3±0.3	3.6 Typ.

### 2. Part Numbering

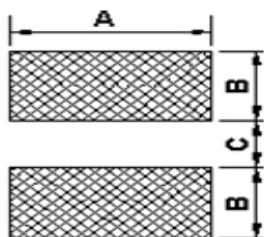
BCNRL 4012 - 1R0 N - NL  
 (1) (2) (3) (4) (5)

- (1) Product code
- (2) Dimension
- (3) Inductance            1R0=1.0uH
- (4) Inductance Tolerance    M=±20%, N=±30%
- (5) RoHS    Compliant

### 3. Schematic Diagram



### 4. Recommended Land Dimension



A	3.7
B	1.2
C	1.6

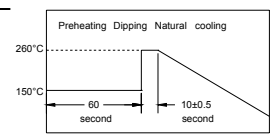
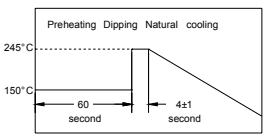
Unit:mm

## 5. Specification

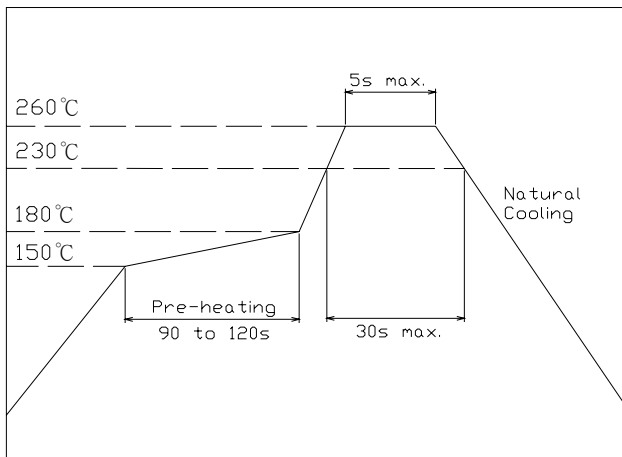
Part Number	Inductance (uH)	Tolerance	Test Frequency	DCR ( $\Omega$ ) $\pm 20\%$	Isat (A) max.	Irms (A) max.
BCNRL4012-1R0N-NL	1.0	$\pm 30\%$	100KHz/1V	0.06	1.50	2.50
BCNRL4012-2R2N-NL	2.2	$\pm 30\%$	100KHz/1V	0.09	1.20	1.65
BCNRL4012-3R3N-NL	3.3	$\pm 30\%$	100KHz/1V	0.13	0.98	1.20
BCNRL4012-4R7M-NL	4.7	$\pm 20\%$	100KHz/1V	0.15	0.96	1.05
BCNRL4012-6R8M-NL	6.8	$\pm 20\%$	100KHz/1V	0.18	0.84	0.90
BCNRL4012-100M-NL	10	$\pm 20\%$	100KHz/1V	0.34	0.74	0.80
<b>BCNRL4012-220M-NL</b>	<b>22</b>	<b><math>\pm 20\%</math></b>	<b>100KHz/1V</b>	<b>0.60</b>	<b>0.51</b>	<b>0.54</b>
BCNRL4012-330M-NL	33	$\pm 20\%$	100KHz/1V	0.82	0.40	0.42
BCNRL4012-470M-NL	47	$\pm 20\%$	100KHz/1V	1.00	0.35	0.37

1. All test data is referenced to 20°C ambient.
2. Isat: DC current at which the inductance drops approximate 30% from its value without current.
3. Irms: DC current that causes the temperature rise( $\Delta T=40^\circ\text{C}$ ) from 20°C ambient.

**6. Reliability and Test Condition**

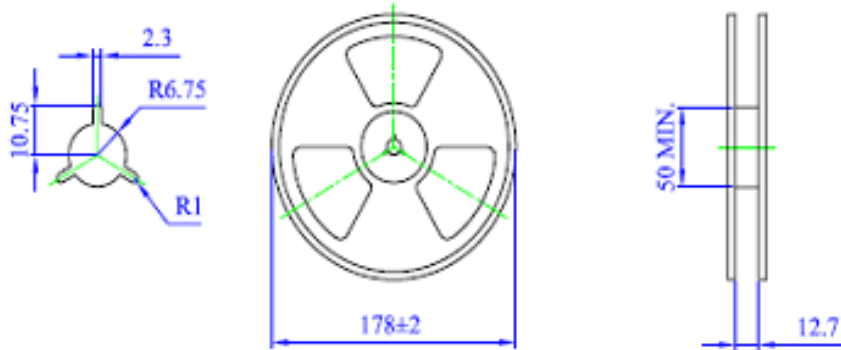
Item	Performance	Test Condition															
Operating Temperature	-40~+125°C																
Storage temperature	-40~+125°C																
Rated Current	Base on temp. rise & $\Delta L/LOA \leq 35\%$																
Temperature Rise Test	40°C typ. ( $\Delta t$ )																
Solder heat Resistance	Appearance: No significant abnormality. Inductance change: Within $\pm 20\%$ .	 <p>Preheat: 150°C, 60sec. Solder : Sn-Ag3.0-Cu0.5 Solder temperature: 260±5°C Flux: rosin Dip time: 10±0.5sec.</p>															
Solderability	More than 90% of the terminal electrode should be covered with solder.	 <p>Preheat: 125±25°C, 60sec. Solder : Sn-Ag3.0-Cu0.5 Solder temperature: 245±5°C Flux: rosin Dip time: 4±1sec.</p>															
Thermal shock	Appearance: no damage. Inductance: within ±20% of initial value.	<table border="1"> <thead> <tr> <th>Phase</th> <th>Temperature(°C)</th> <th>Time(min)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-25±2°C</td> <td>30±3</td> </tr> <tr> <td>2</td> <td>Room Temp.</td> <td>15</td> </tr> <tr> <td>3</td> <td>+85±2°C</td> <td>30±3</td> </tr> <tr> <td>4</td> <td>Room Temp.</td> <td>15</td> </tr> </tbody> </table> <p>For SSL Condition for 1 cycle Step1: -25±2°C 30±3 min. Step2: Room temperature 15 min. Step3: +85±2°C 30±3 min. Step4: Room temperature 15 min. Number of cycles: 50</p> <p>Measured: 50 times</p>	Phase	Temperature(°C)	Time(min)	1	-25±2°C	30±3	2	Room Temp.	15	3	+85±2°C	30±3	4	Room Temp.	15
Phase	Temperature(°C)	Time(min)															
1	-25±2°C	30±3															
2	Room Temp.	15															
3	+85±2°C	30±3															
4	Room Temp.	15															
Humidity Resistance Test	Appearance: no damage. Inductance: within ±20% of initial value.	Temperature: 40±2°C. Applied current: rated current. Duration: 500 hrs. Humidity: 90~95%															
High Temperature Resistance Test	Appearance: no damage. Inductance: within ±20% of initial value.	Temperature: 85±2°C. Applied current: rated current. Duration: 500 hrs.															
Random Vibration Test	Appearance: Cracking, shipping and any other defects harmful to the characteristics should not be allowed. Impedance: within ±30%	Frequency: 10-55-10Hz for 1 min. Amplitude: 1.52mm Directions and times: X, Y, Z directions for 2 hours. A period of 2 hours in each of 3 mutually perpendicular directions (Total 6 hours).															

**7. Recommended IR Reflow**



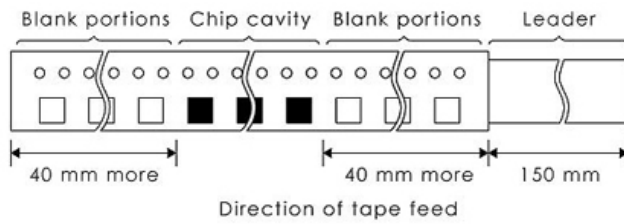
### 8. Packaging

#### 8-1 Reel Dimension

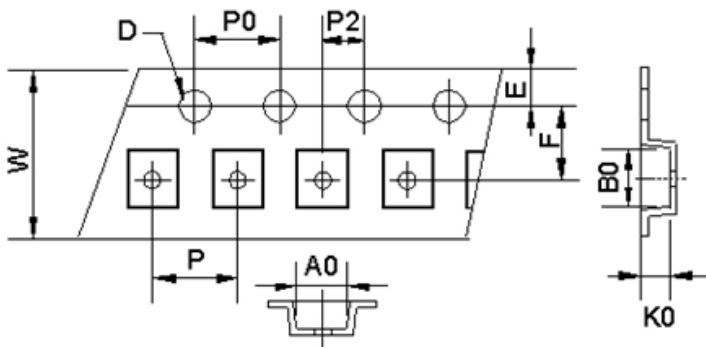


Unit:mm

#### 8-2 Leader and Black Portion



#### 8-3 Taping Dimension



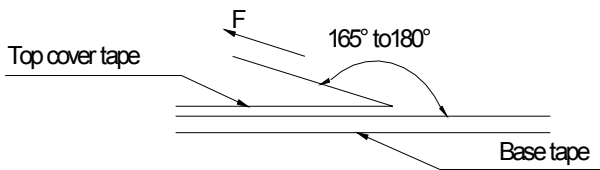
TYPE	BCNRL4012
W	12± 0.1
AO	4.25± 0.1
BO	4.25 ± 0.1
KO	1.3 ± 0.1
D	1.55 ± 0.05
E	1.75 ± 0.1
F	5.5 ± 0.1
P	8 ± 0.1
PO	4.00 ± 0.1
P2	2.0 ± 0.1

Unit:mm

8-4 Packaging Quantity

P/N	Reel(Pcs)
BCNRL4012	4500

8-5 Tearing Off Force



The force tearing off cove tape is 15 to 60 grams			
in the arrow direction under the following conditions			
Room Temp ( $^{\circ}\text{C}$ )	Room Humidity (%)	Room atrn (hPa)	Teaming Speed (mm/min)
5~35	45~85	860~1060	300.0