

RF Inductor



BWLD Series



Overview

Wire-wound RF inductors are electronic components designed to store energy in a magnetic field when electrical current passes through them. They are constructed by winding a conductive wire (usually copper or gold-plated) around a core material such as air, ceramic, or ferrite.

This configuration allows them to provide high inductance values with minimal power loss, especially at high frequencies.

Benefits

1. High Q-Factor (Quality Factor)
2. Low DC resistance design
3. High Current Handling
4. Can maintain excellent thermal stability at different temperatures

Applications

1. Industrial and Medical Equipmen: RFID systems and medical imaging equipment.
2. Data Centers
3. Networking
4. Base Station
5. Consumer Electronics
6. Security system

Product Information

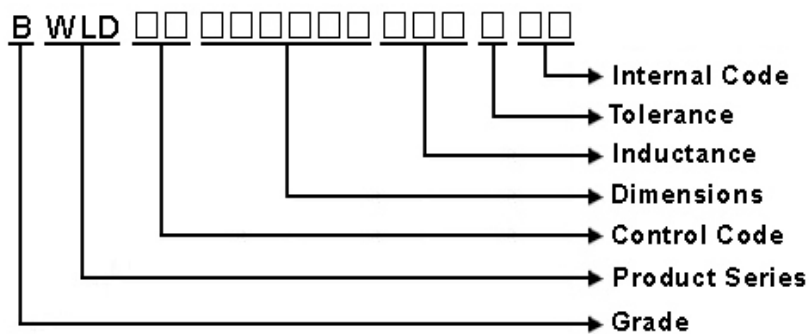
Series	Size Code (JIS/EIA)	Inductance (nH)
BWLD	1608/0603	0.9 ~ 100
	2012/0805	
	2520/1008	



BWLD00302522 Series Specification

1 Scope: This specification applies to Wire Wound Ferrite Chip Inductors

2 Part numbering:

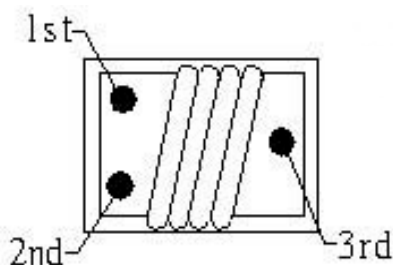


3 Rating:

Operating Temperature: - 40°C ~ 105°C
(Including self - temperature rise)

Storage Temperature: - 40°C ~ 105°C
(The storage temperature range is for after the assembly)

4 Marking:



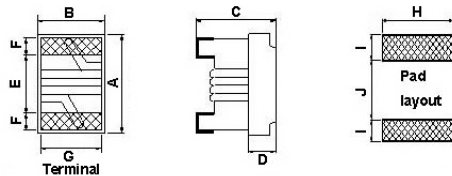
EX Marking: 1st→WHITE
2st→GRAY
3st→RED

5 Standard Testing Condition

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35°C)	20 to 30°C
Humidity	Ordinary Humidity(25 to 85% RH)	50 to 80 %RH

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6 Configuration and Dimensions and Unit Weight:



Dimensions in mm

TYPE	A	B	C	D	E	F	G	H	I	J
302522	2.99Max.	2.5Max.	2.2Max.	0.70	1.52	0.51	2.03	2.54	1.02	1.27

7 Electrical Characteristics:

Part No.	Inductance (uH)	L/Q Test Freq. (MHz)	Q Typ.	SRF (MHz)Min.	RDC (Ω)Max.	IDC (mA)Typ.	Irms (mA)Max.	Tolerance (±%)	Color Code		
									1st	2nd	
BWLD00302522R8□00	0.82	2.5	25	300	0.1	1400	1300	5,10	WHT	GRY	RED
BWLD00302522R90□00	0.9	2.5	25	300	0.1	1400	1300	10	WHT	BLK	BRN
BWLD003025221R1□00	1.1	2.5	24	275	0.105	1300	1200	10	BRN	BRN	RED
BWLD003025221R3□00	1.3	2.5	24	220	0.11	1200	1100	5,10	BRN	ORN	RED
BWLD003025221R5□00	1.5	2.5	22	210	0.125	1100	1000	5,10	BRN	YEL	RED
BWLD003025221R9□00	1.9	2.5	22	165	0.14	1000	1000	5,10	BRN	WHT	RED
BWLD003025222R2□00	2.2	2.5	21	75	0.155	950	950	5,10	RED	RED	RED
BWLD003025222R7□00	2.7	2.5	22	57	0.19	800	900	5,10	RED	VIO	RED
BWLD003025223R3□00	3.3	2.5	21	54	0.21	750	800	5,10	ORN	ORN	RED
BWLD003025223R9□00	3.9	2.5	21	50	0.22	700	800	5,10	ORN	WHT	RED
BWLD003025224R7□00	4.7	2.5	27	48	0.435	700	650	5,10	YEL	VIO	RED
BWLD003025225R8□00	5.8	2.5	21	33	0.28	550	750	5,10	GRN	GRY	RED
BWLD003025226R8□00	6.8	2.5	20	28	0.315	500	700	5,10	BLU	GRY	RED
BWLD003025228R2□00	8.2	2.5	20	24	0.395	500	650	5,10	GRY	RED	RED
BWLD00302522100□00	10	2.5	22	20	0.48	450	550	5,10	BRN	BLK	ORN

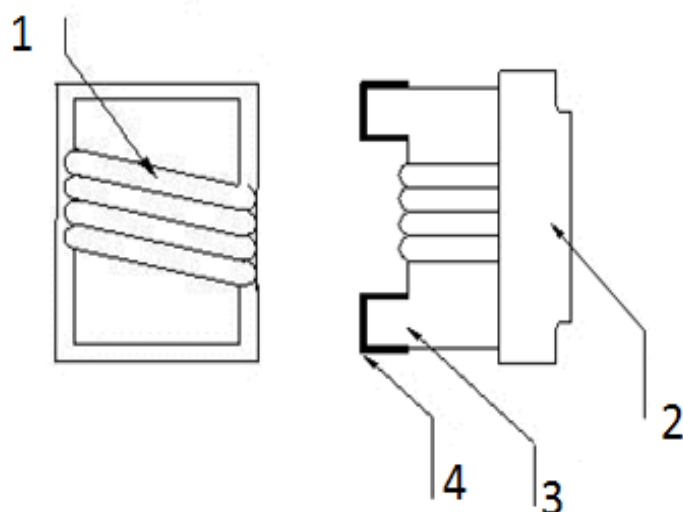
NOTE: □-tolerance J=±5% / K=±10% / G=±0.2%

1. Operating temperature range - 2 5 °C ~ 1 0 5 °C(Including self - temperature rise)
2. L/Q Test OSC @200mV.
3. IDC for Inductance drop 10% from its value without current.
4. Irms for a 40°C temperature rise from 25°C ambient.

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8.1 Construction::



8.2 Material List:

NO	PART	MATERIAL
1	WIRE	COPPER 180
2	EPOXY	UV GLUE
3	CORE	FERRITE
4	TERMINAL	Ag/Cu/Ni/Sn

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9 Reliability Of Ferrite Wire Wound Chip Inductor/FERRITE SERIES

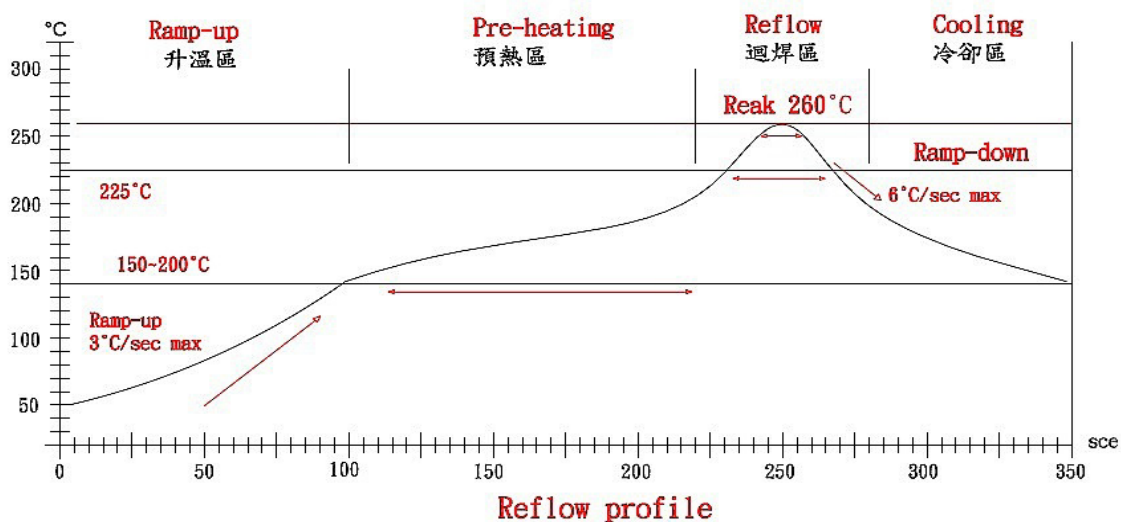
1-1.Environmental Performance

No	Item	Specification	Test Method															
1-1-1	Temperature Cycle	Appearance: No Damage Inductance:within±10% of initial value Q change:within±30% of initial value	One cycle: <table><tr><th>Step</th><th>Temperature (°C)</th><th>Time (min)</th></tr><tr><td>1</td><td>-40±3</td><td>30</td></tr><tr><td>2</td><td>25±2</td><td>3</td></tr><tr><td>3</td><td>105±3</td><td>30</td></tr><tr><td>4</td><td>25±2</td><td>3</td></tr></table>	Step	Temperature (°C)	Time (min)	1	-40±3	30	2	25±2	3	3	105±3	30	4	25±2	3
Step	Temperature (°C)	Time (min)																
1	-40±3	30																
2	25±2	3																
3	105±3	30																
4	25±2	3																
1-1-2	High Temperature Resistance		Total: 5 cycles Measured After Exposure in The Room Condition For 1hrs Temperature: 105±3℃ Time: 1000Hrs Measured After Exposure In The Room Condition For 1Hrs															
1-1-3	Low Temperature Resistance		Temperature: -40±3℃ Time: 1000Hrs Measured After Exposure In The Room Condition For 1Hrs															
1-1-4	Humidity Load Life		Temperature: 40±2℃ Relative Humidity: 90~95% Load: Allowed DC Current Time: 96Hrs															

1-2.Mechanical Performance

No	Item	Specification	Test Method
1-2-1	Resistance TO Soldering Heat	Appearance: No Damage	1. The device should be reflow soldered on PCB (peak $260^{\circ}\text{C} \pm 5^{\circ}\text{C}$ for 10 seconds) 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Test time: 6 minutes
1-2-2	Solder ability	The Electrodes Shall Be At Least 95% Covered With New Solder Coating	1. Pre-Heating: 150°C , 1min. 2. Solder Composition: Sn/Ag3.0/Cu0.5 3. Solder Temperature: $245 \pm 5^{\circ}\text{C}$. 4. Immersion Time: 4 ± 1 sec.
1-2-3	Component Adhesion (Push Test)	1 Lbs. For 0402 1 Lbs. For 0603 2 Lbs. For 0805 4 Lbs. For The Rest	The device should be reflow soldered ($245 \pm 5^{\circ}\text{C}$ For 10 seconds) to a tinned copper substrate. A force gauge should be applied to the side of the component. The device must withstand a minimum force of 1or2or4 pounds without a failure of the termination attached to component

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Lead-Free(LF)標準溫度分析範圍

Refer to J-STD-020C

管制項目 Item.	升溫區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp.scope	R.T ~ 150°C	150°C ~ 200°C	Above 217°C	260±5°C	Peak Temp.~150°C
標準時間 Time spec.	-	60 ~ 180 sec	60 ~ 150 sec	20 ~ 40 sec	-
實際時間 Time result	-	75 ~ 100 sec	90 ~ 120 sec	20 ~ 35 sec	-

NOTE:

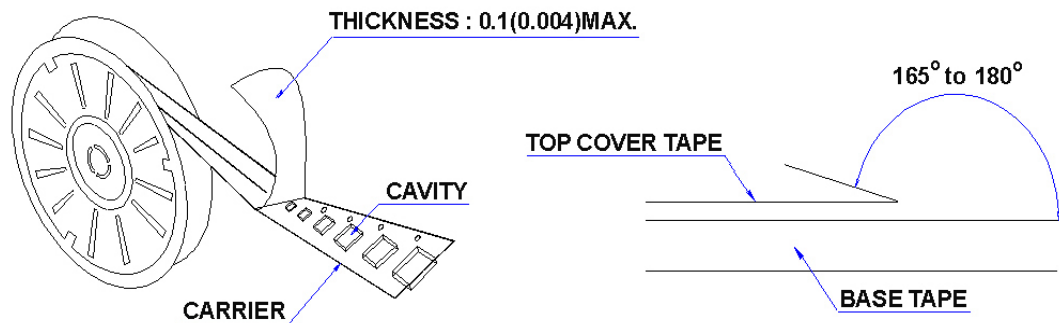
- 1.Re-flow possible times : within 3 times
- 2.Nitrogen adopted is recommends while in re-flow
- 3.Products can only be soldered with reflow

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10 Packaging:

10.1 Packaging -Cover Tape

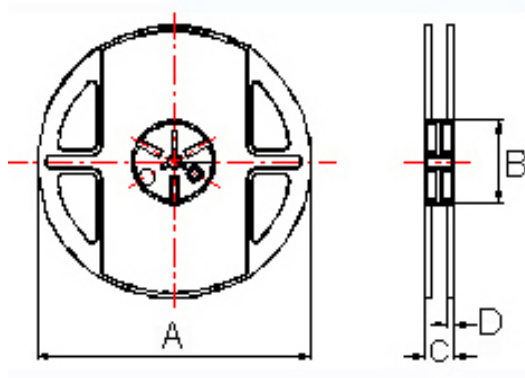
The force for tearing off cover tape is 10 to 100 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
302522	2000

10.3 Reel Dimensions



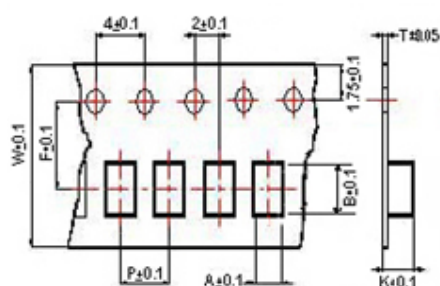
Dimensions in mm

TYPE	A	B	C	D
302522	178±1	60±0.5	12±0.5	1.5±0.5

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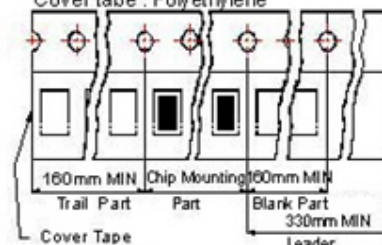
10 Packaging:

10.4 Tape Dimensions in mm



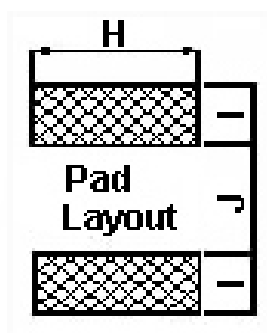
Tape Material

Carrier tape : Polycarbonate
Cover tape : Polyethylene



TYPE	A	B	T	W	P	F	K
302522	2.40	2.93	0.3	8	4	3.5	2.25

11 Recommended Land Pattern:



Dimensions in mm

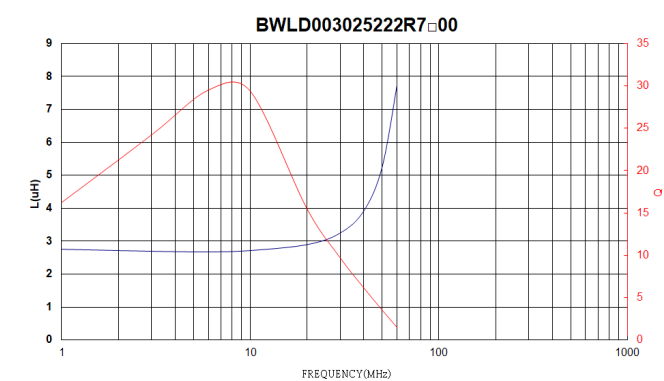
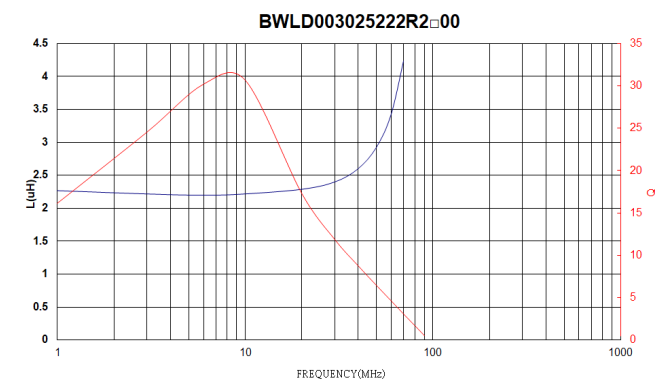
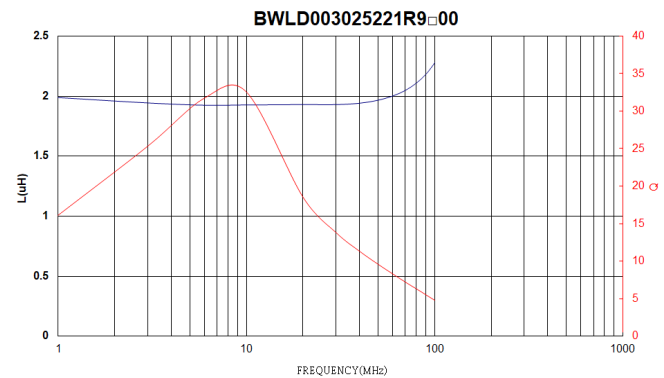
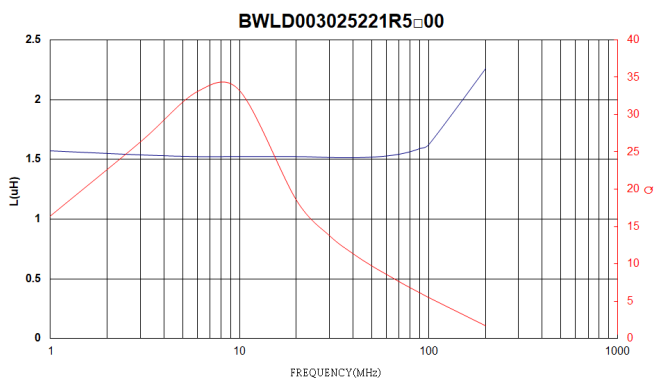
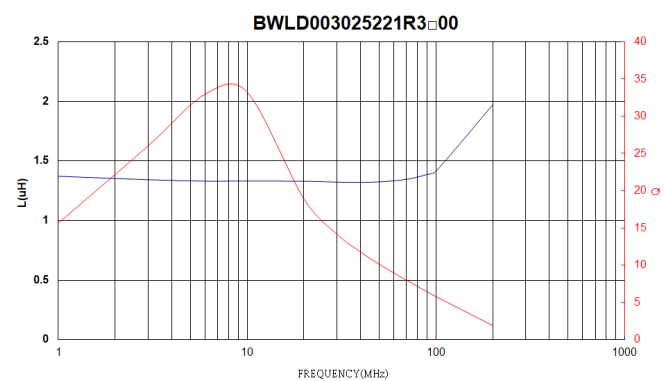
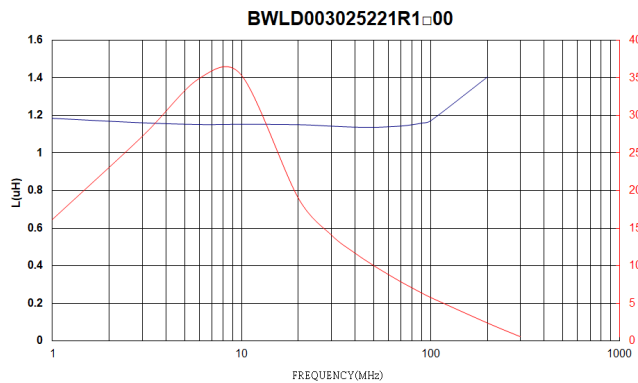
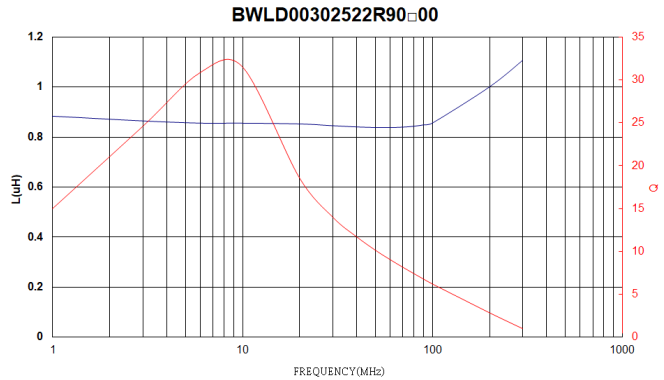
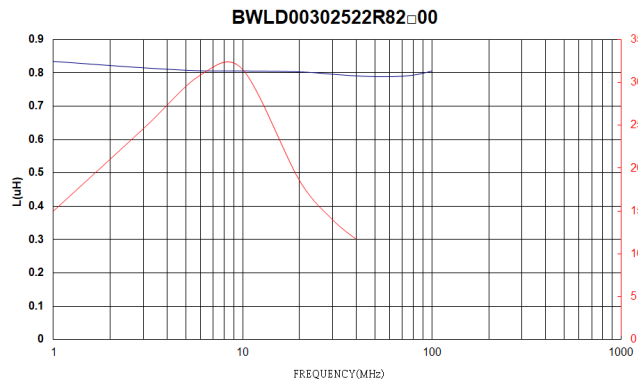
TYPE	H(in/mm)	I(in/mm)	J(in/mm)
302522	0.1/2.54	0.04/1.02	0.05/1.27

12 Note:

- Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
- Do not knock nor drop.
- All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment agreed upon between you and us. You are requested not to use our product deviating from such agreement.
- The storage period is less than 12 months. Be sure to follow the storage conditions (Temperature: 5 to 40°C, Humidity: 10 to 75% RH or less).
If the storage period elapses, the soldering of the terminal electrodes may deteriorate.
- Do not use or store in locations where there are conditions such as gas corrosion (salt, acid, alkali, etc.).
- The moisture sensitivity level (MSL) of products is classified as level 1.

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13 Graph:



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