

RF Inductor



BWSM Series



Overview

Air core inductors feature high Q and high current handling.
Solder coated leads ensure reliable soldering.

Benefits

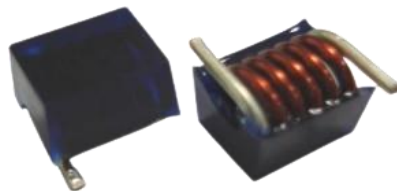
1. High Q value at high frequencies and low DC resistance
2. Low loss
3. Low DCR
4. High Current

Applications

1. NB, PC
2. Base Station
3. Satellite
4. Low Noise Amplifier(LNA), Low Noise Block (LNB)

Product Information

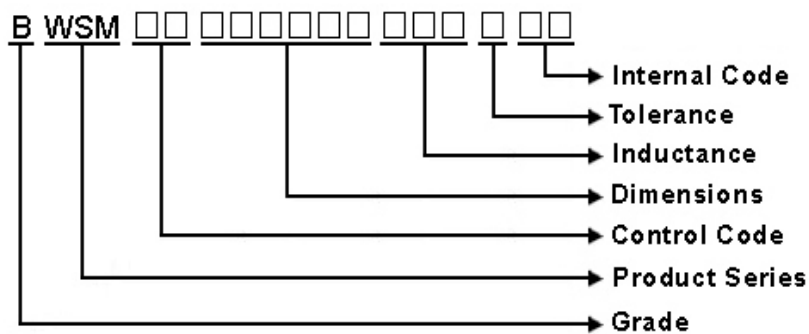
Series	Size Code (JIS/EIA)	Inductance (nH)
BWSM	5064/1925	22 ~ 82



BWSM00506442 Series Specification

1 Scope: This specification applies to Air Core Inductors

2 Part Numbering:



3 Rating:

Operating Temperature: - 40°C ~ 125°C
(Including self - temperature rise)

Storage Temperature: - 40°C ~ 125°C
(The storage temperature range is for after the assembly)

4 Marking:

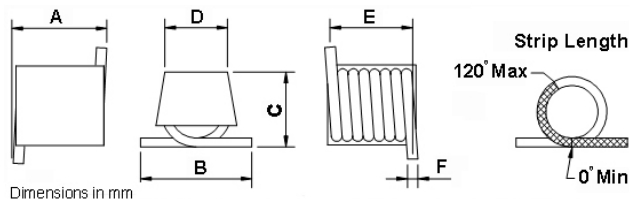
No Marking

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

BWSM00506442 Series Specification

6 Configuration and Dimensions and Unit Weight:



Dimensions in mm

TYPE	A	B	C	D	E	F
506442	4.94Max.	6.34Max.	4.18Max.	3.50±0.30	4.30±0.40	0.70Max.

Net Weight (grms)

SIZE CODE	Net Weight (grms)
506442	0.143 (typ.)

7 Electrical Characteristics:

Part No.	Inductance (nH)	L/Q Test Freq. (MHz)	Q Min.	SRF (GHz)Min.	RDC (mΩ)Max.	I _{rms} (A)Typ.	Tolerance (±%)
BWSM0050644222N□00	22	150	100	1.9	4.2	3	2,5
BWSM0050644227N□00	27	150	100	1.7	4	3.5	2,5
BWSM0050644233N□00	33	150	100	1.5	4.8	3	2,5
BWSM0050644239N□00	39	150	100	1.1	4.8	3	2,5
BWSM0050644247N□00	47	150	100	1.1	5.8	3	2,5
BWSM0050644256N□00	56	150	100	0.95	6.3	3	2,5
BWSM0050644268N□00	68	150	100	0.85	8.5	2.5	2,5
BWSM0050644282N□00	82	150	100	0.75	9.4	2.5	2,5
BWSM00506442R12□00	120	150	100	0.6	18	1.5	2,5

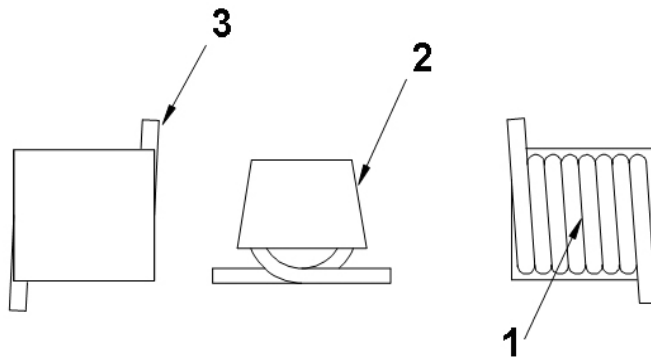
NOTE: □-tolerance G=±2% / J=±5%

1. Operating temperature range - 40°C ~ 125°C
2. L/Q Test OSC @200mV.
3. I_{rms} for a 15°C temperature rise from 25°C ambient.

BWSM00506442 Series Specification

8 BWSM00506442 Series

8.1 Construction:



8.2 Material List:

NO	PART	MATERIAL
1	WIRE	COPPER WIRE
2	EPOXY	CV GLUE
3	TERMINAL	Sn

BWSM00506442 Series Specification

9 Reliability Of Air Core Inductors

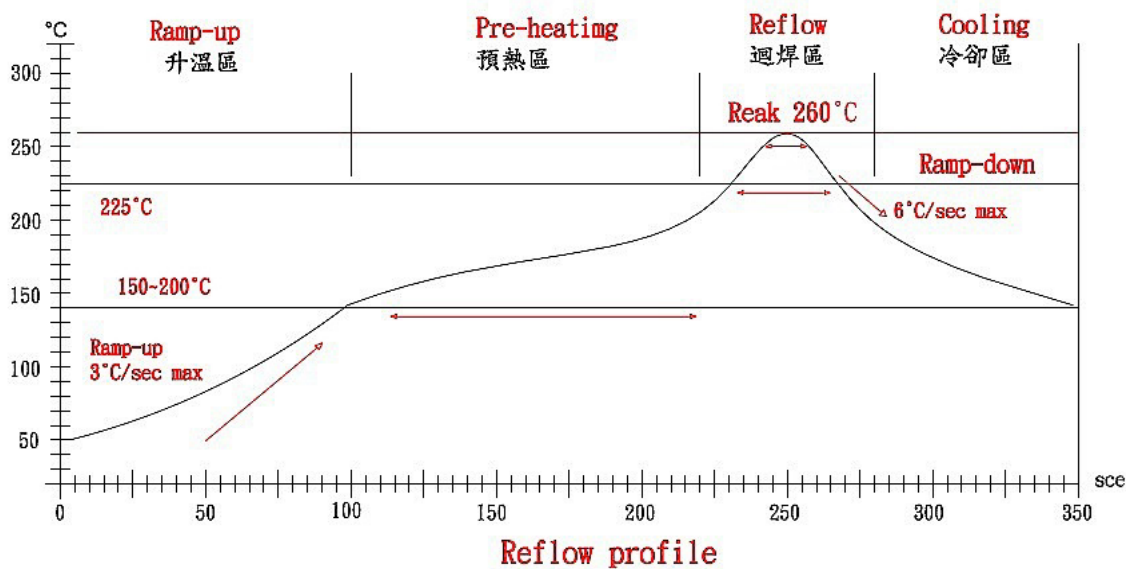
1-1.Environmental Performance

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>15</td></tr><tr><td>3</td><td>125±3</td><td>30</td></tr><tr><td>4</td><td>25±2</td><td>15</td></tr></table>	Step	Temperature (°C)	Time (min)	1	-40±3	30	2	25±2	15	3	125±3	30	4	25±2	15
Step	Temperature (°C)		Time (min)															
1	-40±3		30															
2	25±2		15															
3	125±3		30															
4	25±2		15															
1-1-2	Humidity Resistance	Total: 5 cycles Measured After Exposure in The Room Condition For 1hrs Temperature: 40±2°C Relative Humidity: 90 ~ 95% Time: 100hrs																
1-1-3	High Temperature Resistance	Measured After Exposure In The Room Condition For 1hrs Temperature: 125±3°C Time: 50Hrs																
1-1-4	Low Temperature Resistance	Measured After Exposure In The Room Condition For 1Hrs Temperature: -40±3°C Time: 50Hrs																
1-1-5	High Temperature Load Life	There should be no evidence of short or open circle	Measured After Exposure In The Room Condition For 1Hrs Temperature: 85±3°C Load: Allowed DC Current Time: 1000Hrs															
1-1-6	Humidity Load Life		Temperature: 40±2°C Relative Humidity: 90~95% Load: Allowed DC Current Time: 1000Hrs															

1-2.Mechanical Performance

No	Item	Specification	Test Method
1-2-1	Vibration Test (Low Frequency)	1.Appearance: No Damage 2.Inductance: within $\pm 10\%$ of initial value 3.Q change: within $\pm 30\%$ of initial value	1. Test device shall be soldered on the substrate. 2. Oscillation frequency: 10 to 55 to 10Hz for 1min. 3. Amplitude: 1.5mm 4. Time: 2hrs for each axis(X, Y & Z),total 6hrs
1-2-2	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
1-2-3	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.

BWSM00506442 Series Specification



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:

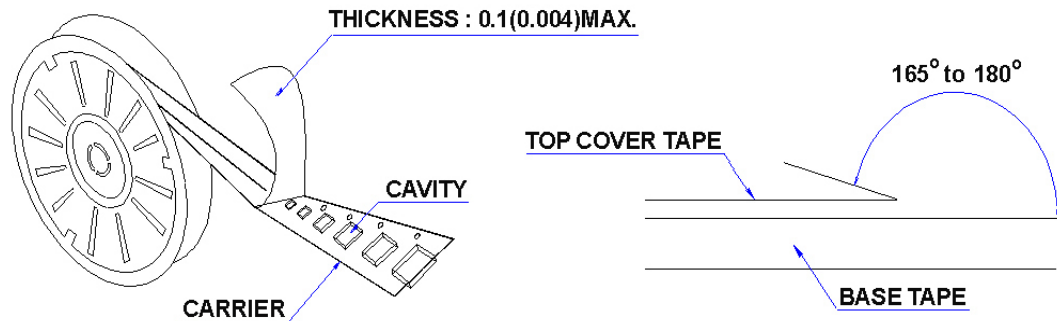
- 1.Re-flow possible times : within 3 times
- 2.Nitrogen adopted is recommended while in re-flow
- 3.Products can only be soldered with reflow

BWSM00506442 Series Specification

10 Packaging:

10.1 Packaging -Cover Tape

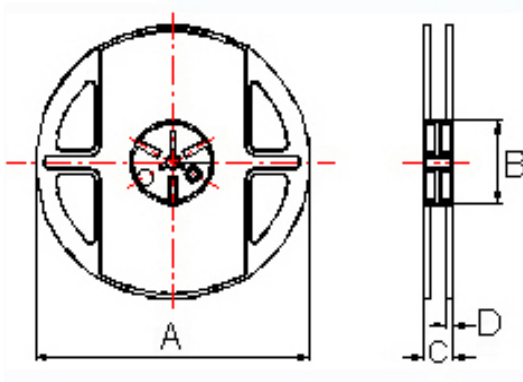
The force for tearing off cover tape is 10 to 130 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
506442	500

10.3 Reel Dimensions



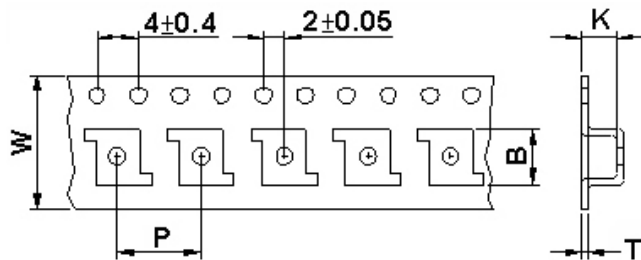
Dimensions in mm

TYPE	A	B	C	D
506442	178	60.2	16	1.4

BWSM00506442 Series Specification

10 Packaging:

10.4 Tape Dimensions in mm

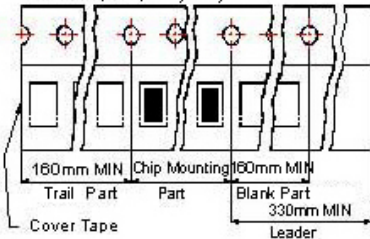


TYPE	B	T	W	P	K
506442	5.2	0.4	12	8.00	3.9

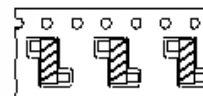
Tape Material

Carrier tape : Polycarbonate

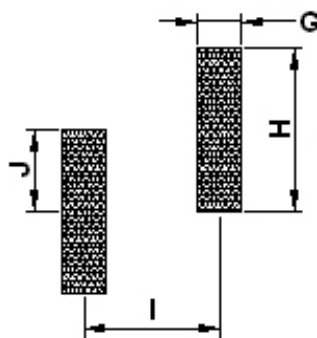
Cover tape : Polyethylene



Orientation



11 Recommended Land Pattern:



Dimensions in mm

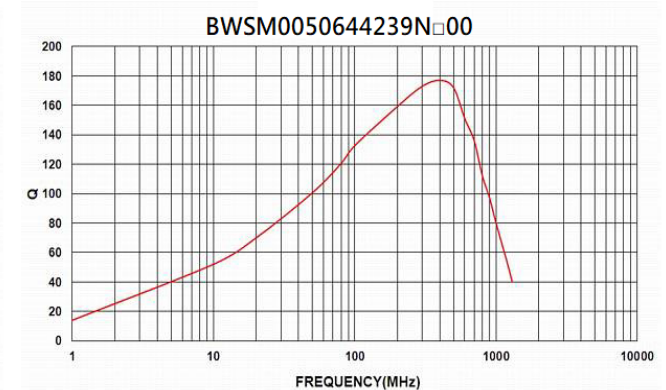
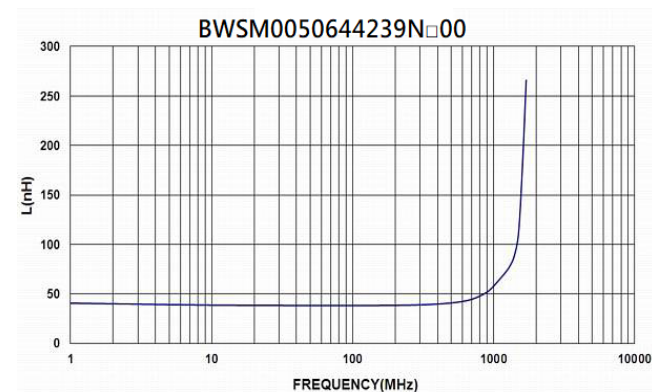
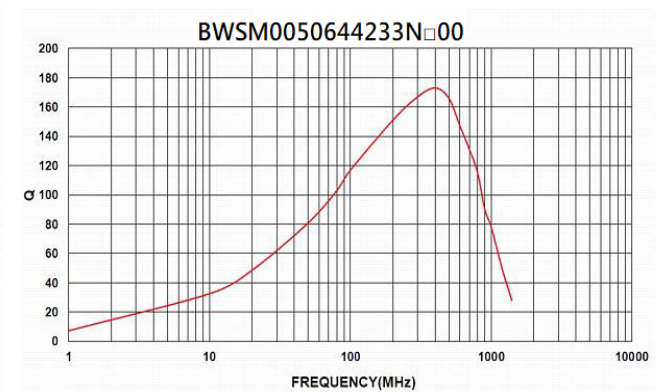
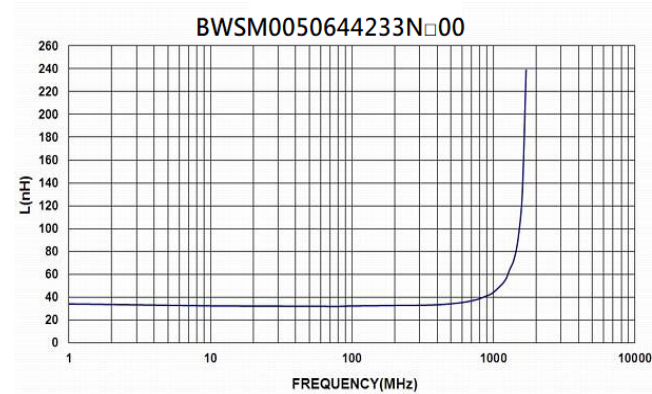
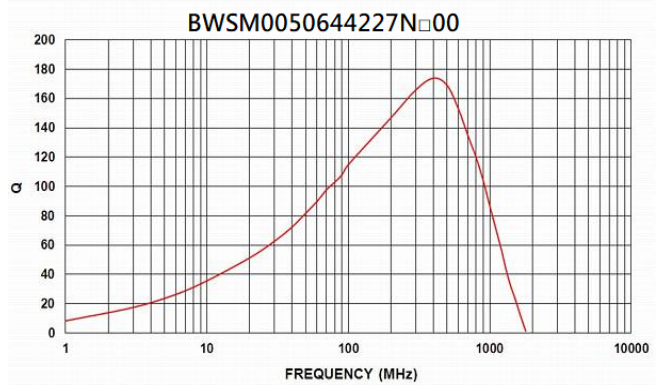
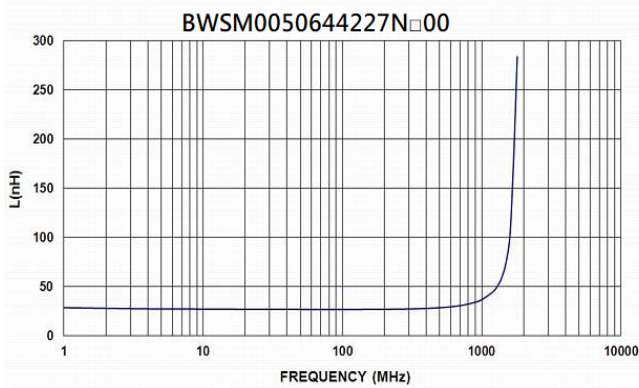
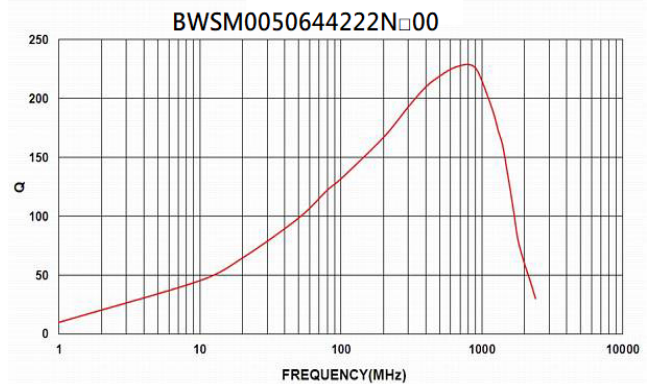
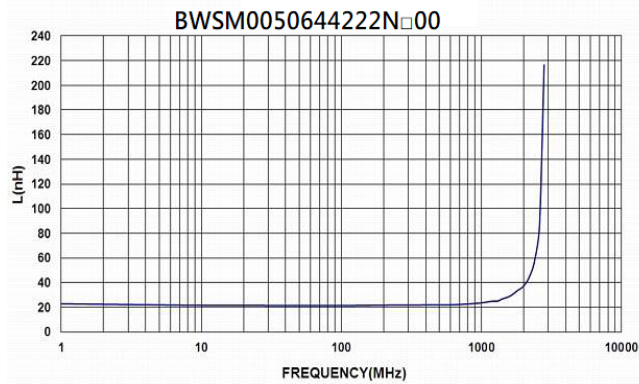
TYPE	G(in/mm)	H(in/mm)	I(in/mm)	J(in/mm)
506442	0.058/1.48	0.203/5.16	0.17/4.32	0.103/2.62

12 Note:

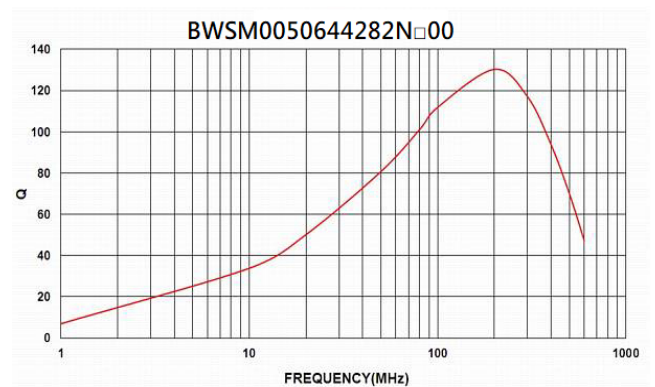
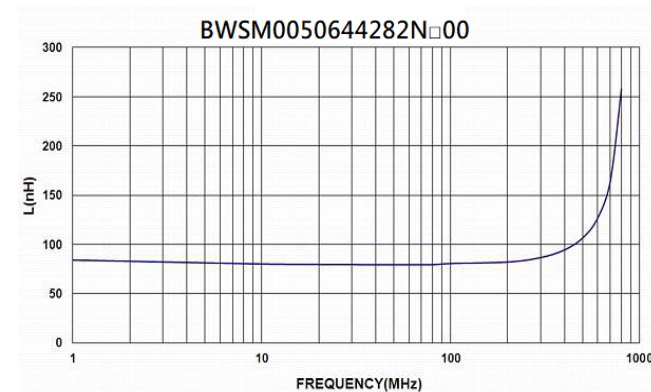
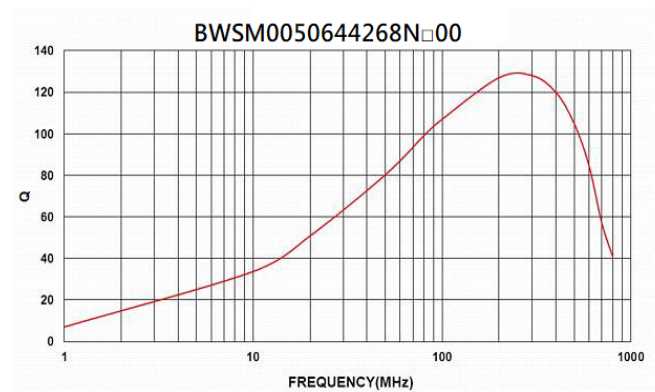
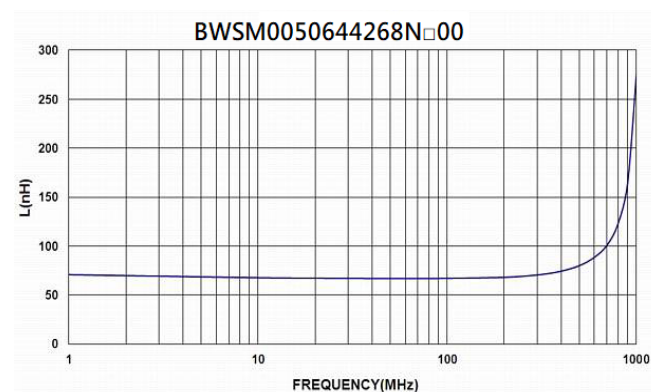
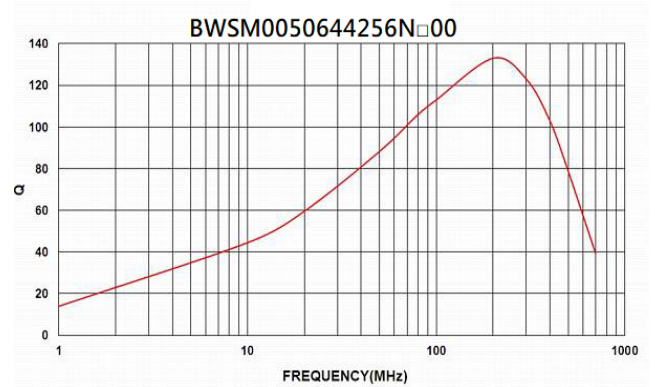
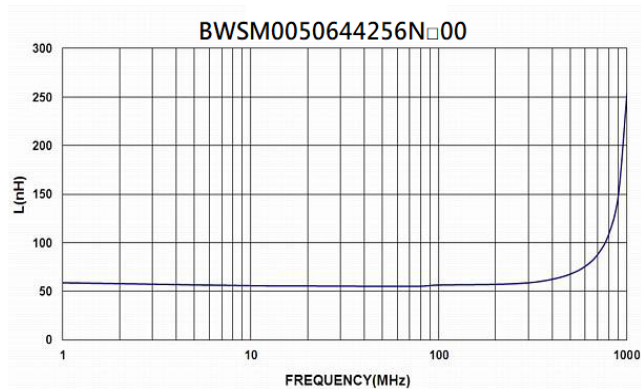
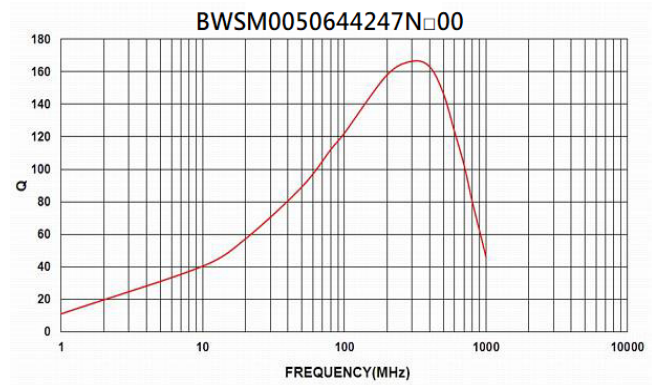
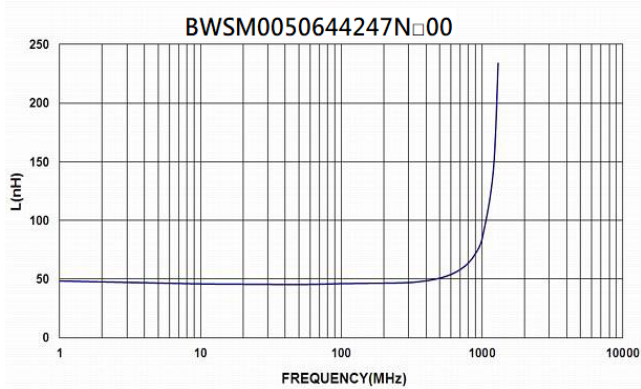
- Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
- Do not knock nor drop.
- All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, 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.

BWSM00506442 Series Specification

14 Graph:



BWSM00506442 Series Specification



BWSM00506442 Series Specification

