Power Inductor

BPSL Series

Overview

Power inductors are passive electronic components used in various circuits to store energy in a magnetic field when electrical current flows through them. They are critical in filtering, energy storage, and noise suppression in power electronic systems.
They are designed to handle higher currents and are optimized for minimal power loss and thermal efficiency.

Benefits

1. Ferrite SMD Shielded Type
2. Unshielded power inductor
3. Various package size and wide inductance range.
   SSL-HC family is designed for low resistance and high current purpose

Applications

1. DC/DC converters

Product Information

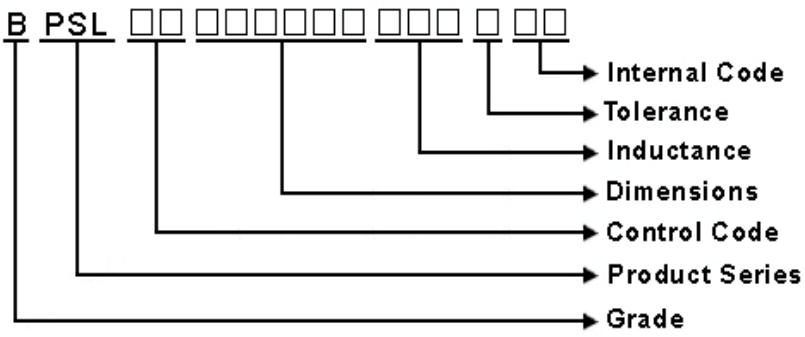
Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPSL	8.89	6.10	5.00	0.33 ~ 1500
	12.9	9.4	11.4	
	12.9	9.4	5.21	
	13.2	9.91	6.35	
	18.5	15.2	7.11	

BPSL00130952 Series Specification

1 Scope:

This specification applies to SMD Unshielded Power Inductors

2 Part Numbering:



3 Rating:

Operating Temperature: - 40°C ~ + 125°C (Including self temp. rise)

Storage Temperature: - 40°C ~ + 125°C(For after the circuit board is mounted)

Storage Temperature: (on tape & reel): -20℃ to +40℃; 75% RH max.

4 Marking:

Ex Marking : 100

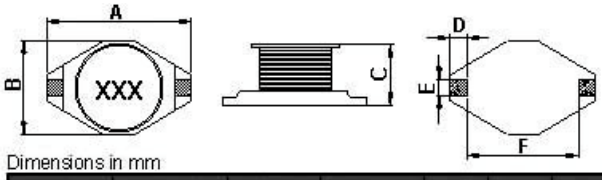
Marking color : White

5 Standard Testing Condition

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

BPSL00130952 Series Specification

6 Configuration and Dimensions and Unit Weight:



Dimensions in mm

TYPE	A	B	C	D	E	F
130952	12.95 Max.	9.4 Max.	5.21 Max.	2.54	2.54	7.62

Net Weight (grms)

SIZE CODE	Net Weight (grms)
130952	1.26(Typ.)

7 Electrical Characteristics:

Part No.	Inductance (uH)	Test Freq.	RDC (Ω)Max.	Isat (A)	Irms (A)	SRF (MHz)Typ.	Marking
BPSL001309521R0□00	1	100 kHz,0.1 V	0.009	9	6.8	100	1R0
BPSL001309521R5□00	1.5	100 kHz,0.1 V	0.01	8	6.4	90	1R5
BPSL001309522R2□00	2.2	100 kHz,0.1 V	0.012	7	6.1	80	2R2
BPSL001309523R3□00	3.3	100 kHz,0.1 V	0.015	6.4	5.4	65	3R3
BPSL001309524R7□00	4.7	100 kHz,0.1 V	0.018	5.4	4.8	45	4R7
BPSL001309526R8□00	6.8	100 kHz,0.1 V	0.027	4.6	4.4	38	6R8
BPSL00130952100□00	10	100 kHz,0.1 V	0.038	3.8	3.9	30	100
BPSL00130952120□00	12	100 kHz,0.1 V	0.0432	3.5	3.6	27	120
BPSL00130952150□00	15	100 kHz,0.1 V	0.046	3	3.1	27	150
BPSL00130952220□00	22	100 kHz,0.1 V	0.085	2.6	2.7	19	220
BPSL00130952330□00	33	100 kHz,0.1 V	0.1	2	2.1	15	330
BPSL00130952470□00	47	100 kHz,0.1 V	0.14	1.6	1.8	12	470
BPSL00130952680□00	68	100 kHz,0.1 V	0.2	1.4	1.5	10	680
BPSL00130952101□00	100	100 kHz,0.1 V	0.26	1.2	1.3	9	101
BPSL00130952151□00	150	100 kHz,0.1 V	0.4	1	1	6	151
BPSL00130952221□00	220	100 kHz,0.1 V	0.61	0.8	0.8	5	221
BPSL00130952331□00	330	100 kHz,0.1 V	1.02	0.6	0.6	4.5	331
BPSL00130952471□00	470	100 kHz,0.1 V	1.27	0.5	0.5	3.5	471
BPSL00130952681□00	680	100 kHz,0.1 V	2.02	0.4	0.4	2.5	681
BPSL00130952102□00	1000	100 kHz,0.1 V	3	0.3	0.3	2	102
BPSL00130952152□00	1500	100 kHz,0.1 V	4.5	0.25	0.2	1.4	152

NOTE: □-tolerance M=±20%

1.Operating temperature range -40℃~125℃(Including self - temperature rise)

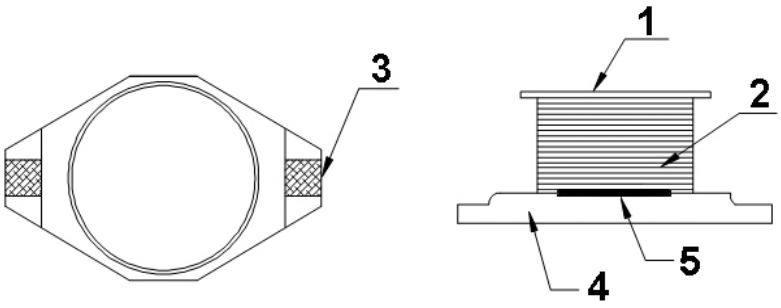
2.Isat for Inductance drop 20% from its value without current.

3.Irms for a 15℃ temperature rise from 25℃ ambient.

BPSL00130952 Series Specification

8 BPSL00130952 Series

8.1 Construction:



8.2 Material List:

No	Part	Material
1	CORE	FERRITE
2	WIRE	COPPER WIRE
3	TERMINAL	
4	BASE	LCP,E4008
5	EPOXY	AD3

BPSL00130952 Series Specification

9 Reliability Of Ferrite Wire Wound Power Inductor

1-1.Mechanical Performance

No	Item	Specification	Test Method
1-1-1	Vibration	Appearance: No damage Inductance:within±10% of initial value Q change:within±30% of initial value	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-2	Resistance to Soldering Heat	Appearance: No damage	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5 Solder Temperature: 260±5℃ Immersion Time: 10±1sec
1-1-3	Solderability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5 Solder Temperature: 245±5℃ Immersion Time: 4±1sec
1-1-4	Resistance to solvent	There must be no change in appearance or obliteration of marking.	Inductors must withstand 6 minutes of alcohol or water.

1-2.Environmental Performance

No	Item	Specification	Test Method
1-2-1	Temperature Shock	Appearance: No damage Inductance:within±10% of initial value Q change:within±30% of initial value	10 cycles (Air to Air) 1 cycles shall consist of: 30 minutes exposure to –55 ℃ 30 minutes exposure to 125 ℃ 15 seconds maximum transition between temperatures Measured after exposure in the room condition for 24hrs
1-2-2	Temperature Cycle		One cycle:

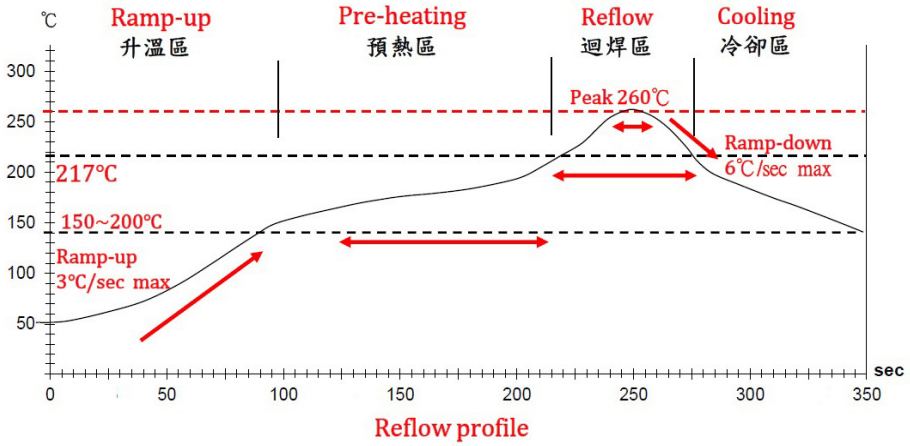
Step	Temperature (℃)	Time (min)
1	-40±3	30
2	25±2	3
3	125±3	30
4	25±2	3

Total: 100cycles
Measured after exposure in the room condition for 24hrs

1-2-3	Humidity Resistance	Temperature: 40±2℃ Relative Humidity: 90 ~ 95% Time: 1000hrs Measured after exposure in the room condition for 24hrs
1-2-4	High Temperature Resistance	Temperature: 85±3℃ Applied Current: Rated Current Time: 1000hrs Measured after exposure in the room condition for 24hrs
1-2-5	Low Temperature Resistance	Temperature: -40±3℃ Time: 1000hrs Measured after exposure in the room condition for 24hrs

BPSL00130952 Series Specification

Reflow Soldering Profile



Reflow profile

Lead-Free(LF)標準溫度分析範圍 **Refer to J-STD-020C**

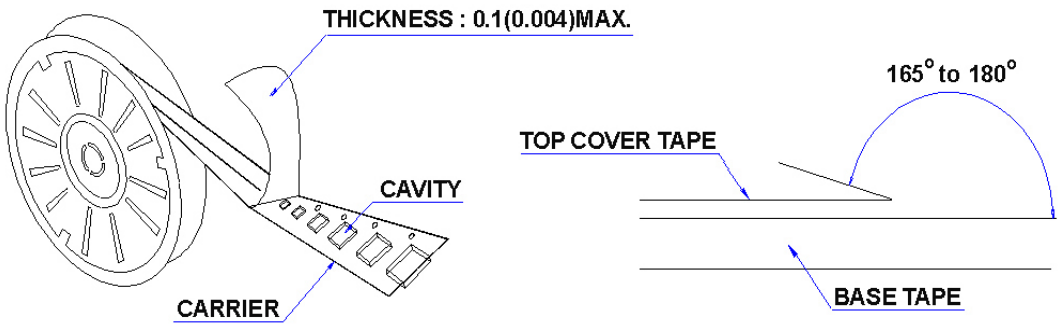
管制項目 Item.	升溫區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp.scope	R.T ~ 150℃	150℃ ~ 200℃	217℃	260±5℃	Peak Temp.~150℃
標準時間 Time spec.	-	60 ~ 180 sec	60 ~ 150 sec	20 ~ 40 sec	-
實際時間 Time result	-	75 ~ 100 sec	90 ~ 120 sec	20 ~ 35 sec	-

BPSL00130952 Series Specification

10 Packaging:

10.1 Packaging -Cover Tape

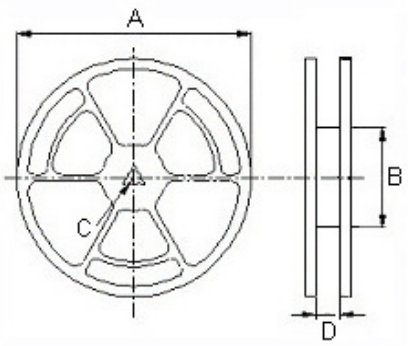
The force for tearing off cover tape is 10 to 130 grams in the arrow direction.



10.2 Packaging Quantity

TYPE	PCS/REEL
130952	750

10.3 Reel Dimensions



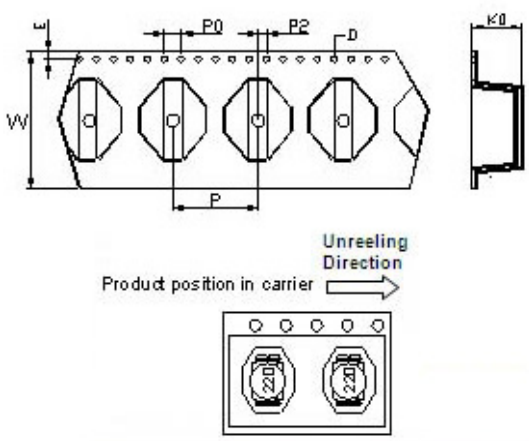
Dimensions in mm

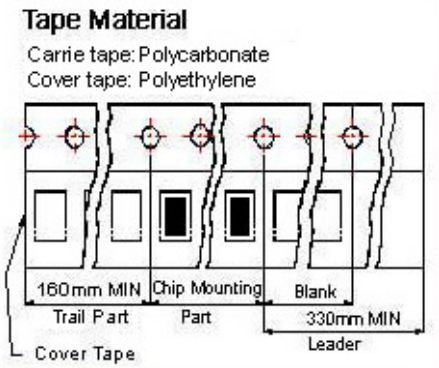
TYPE	A	B	C	D
130952	330	100	13	24.4

BPSL00130952 Series Specification

10 Packaging:

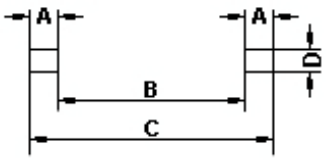
10.4 Tape Dimensions in mm





TYPE	K0	D	E	W	P	P0	P2
130952	5.4	1.55	1.75	24	16	4	2

11 Recommended Land Pattern:



Dimensions in mm

TYPE	A	B	C	D
130951	2.92	7.37	13.21	2.79

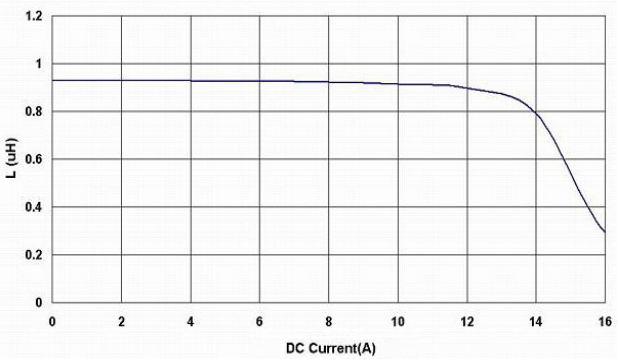
12 Note:

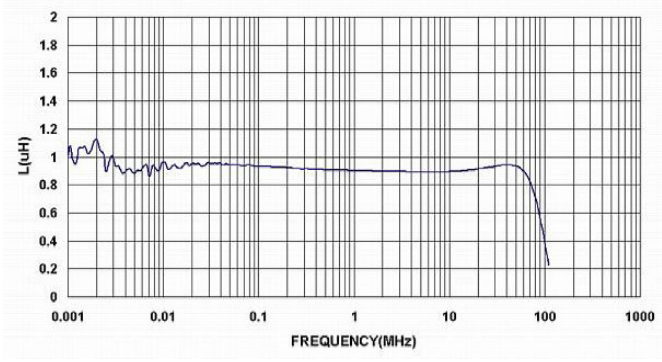
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock nor drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the 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.
4. Please keep the distance between transformer/coil and other components (refer to the standard IEC 950)
5. The moisture sensitivity level (MSL) of products is classified as level 1.

BPSL00130952 Series Specification

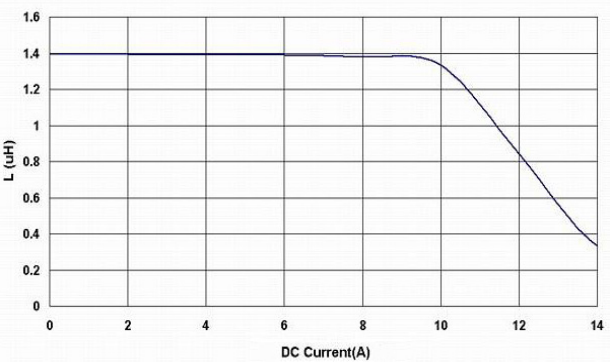
13 Graph:

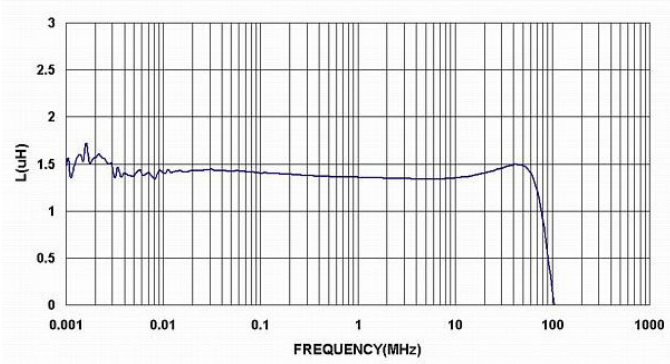
BPSL001309521R0☐00



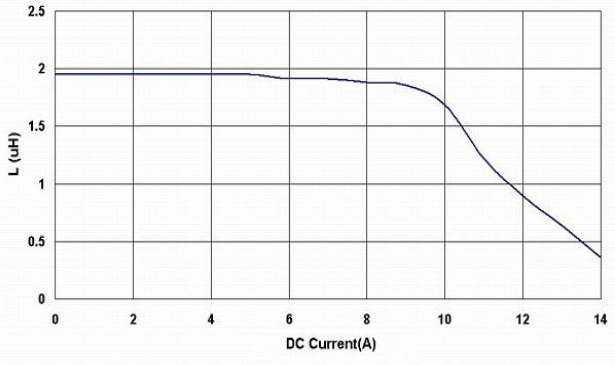


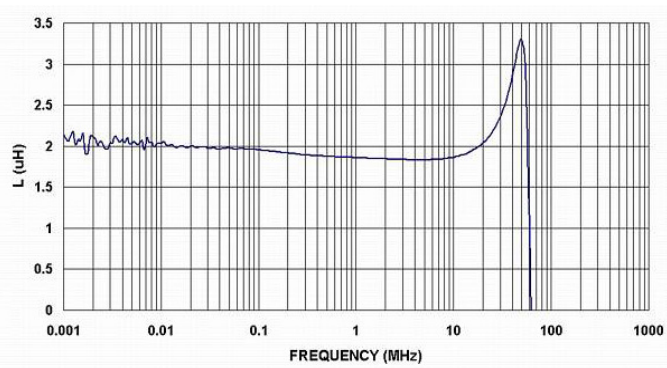
BPSL001309521R5☐00



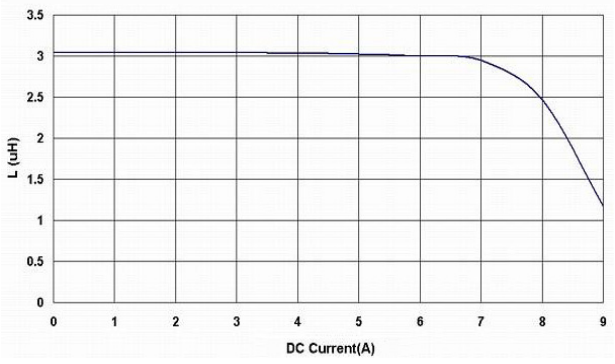


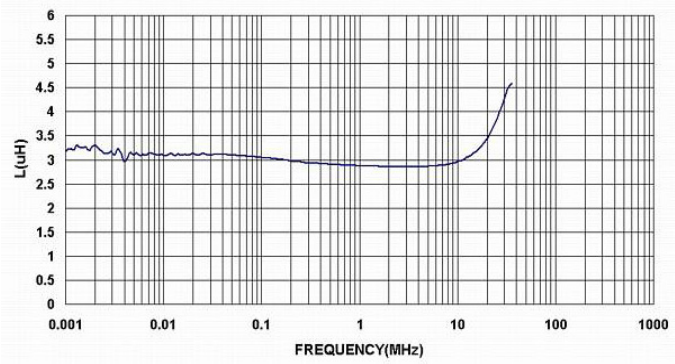
BPSL001309522R2☐00





BPSL001309523R3☐00

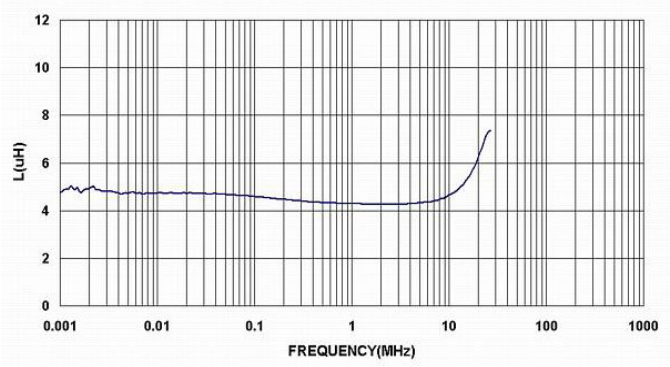




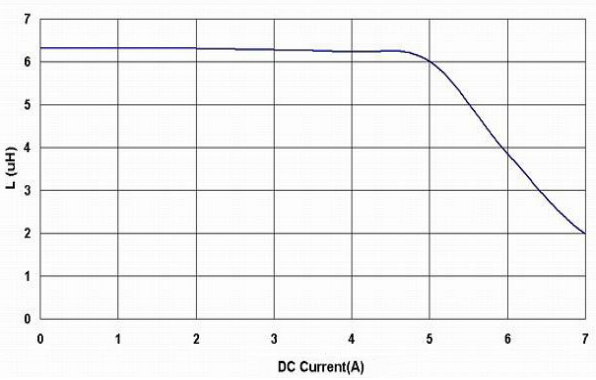
BPSL00130952 Series Specification

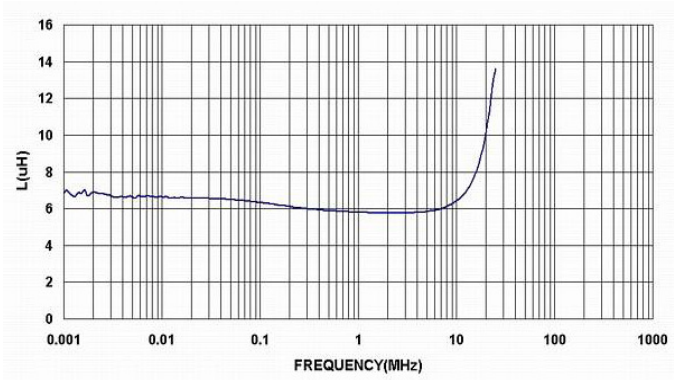
13 Graph:

BPSL001309524R7□00

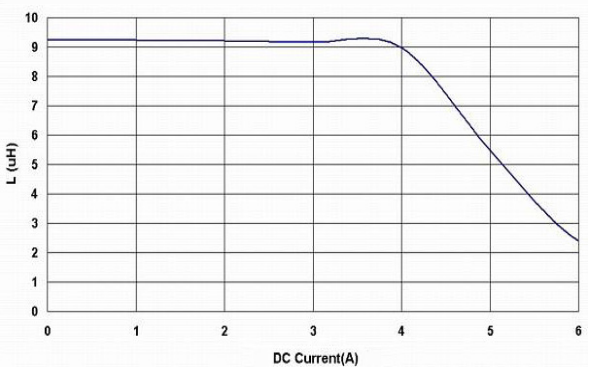


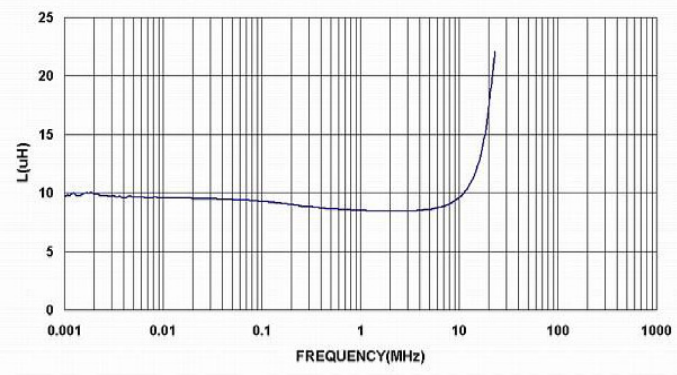
BPSL001309526R8□00



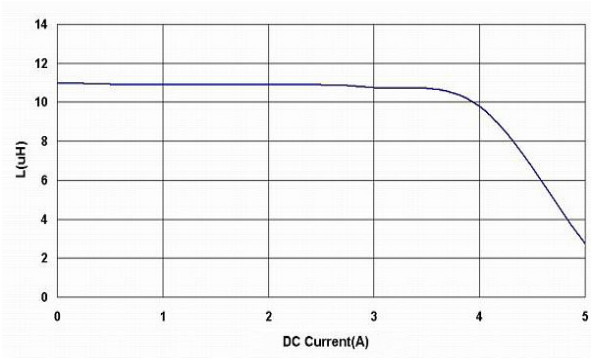


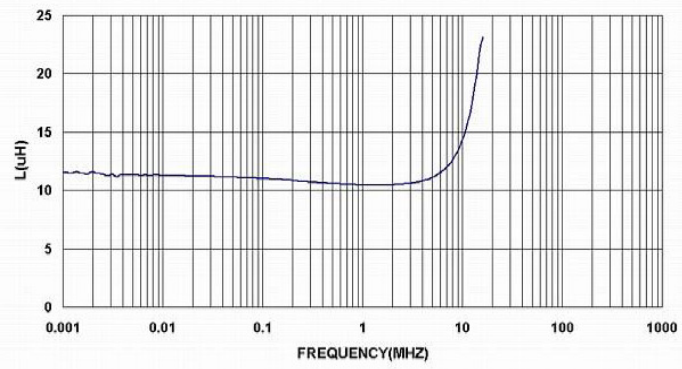
BPSL00130952100□00





BPSL00130952120□00

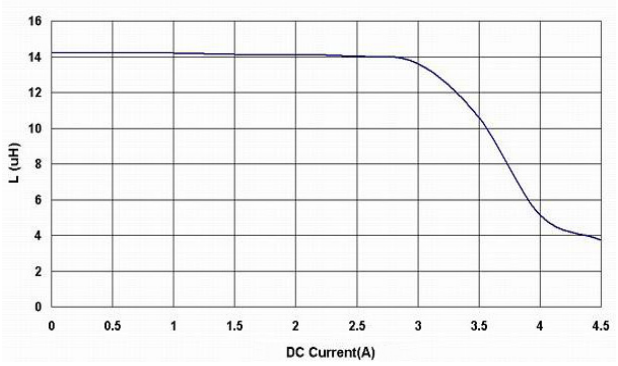


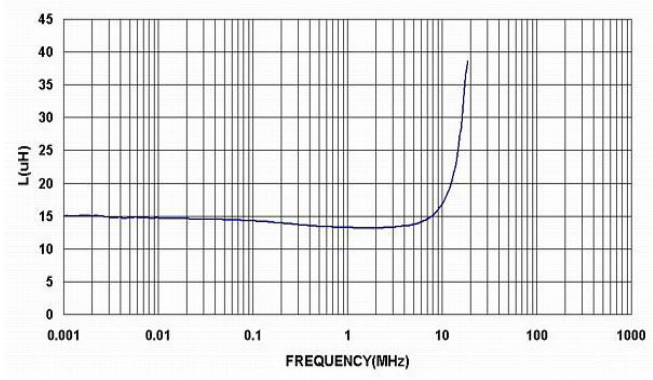


BPSL00130952 Series Specification

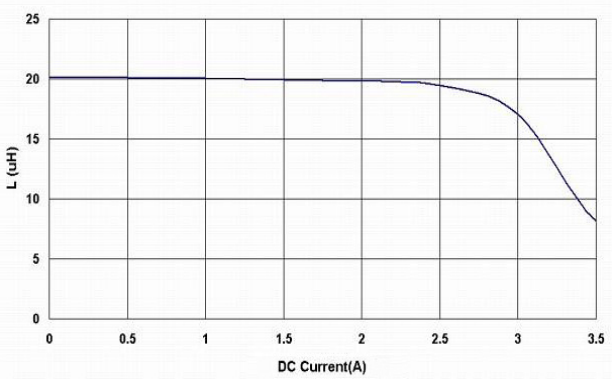
13 Graph:

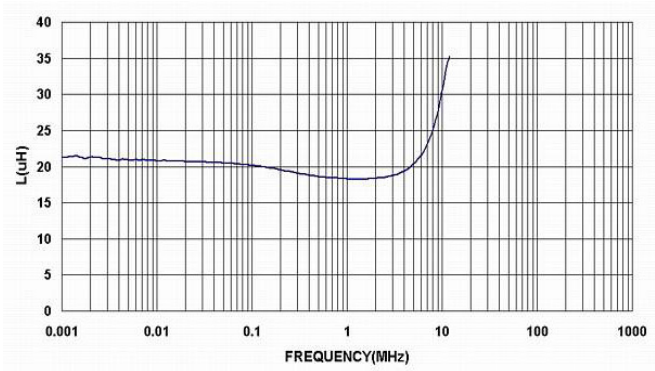
BPSL00130952150□00



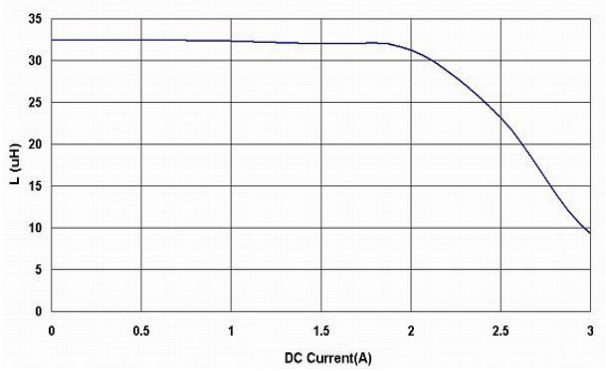


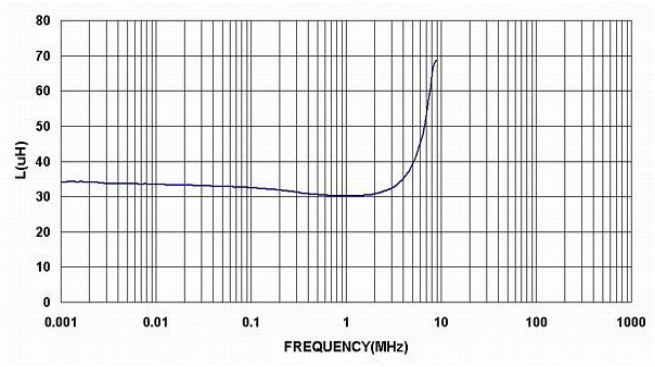
BPSL00130952220□00



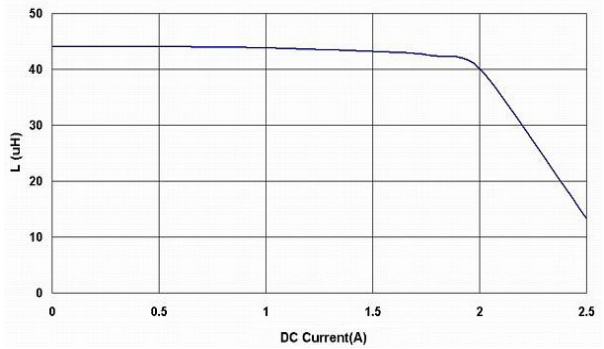


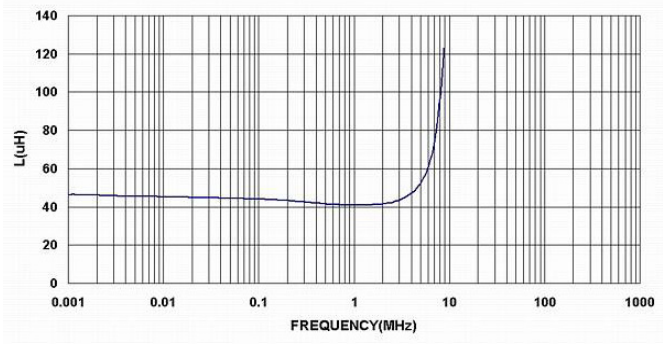
BPSL00130952330□00





BPSL00130952470□00

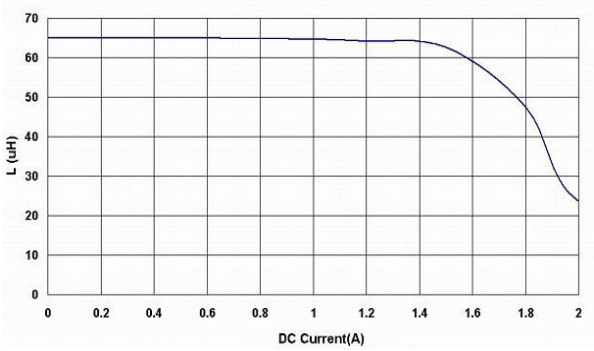


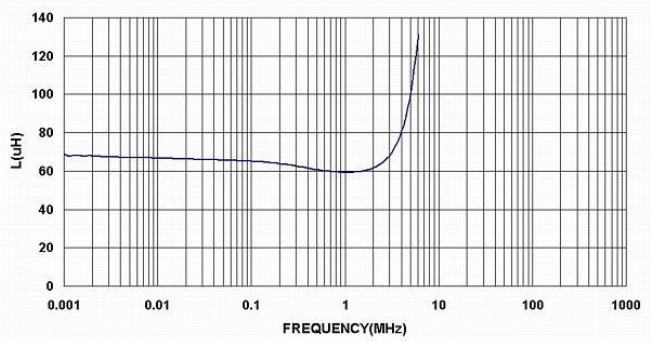


BPSL00130952 Series Specification

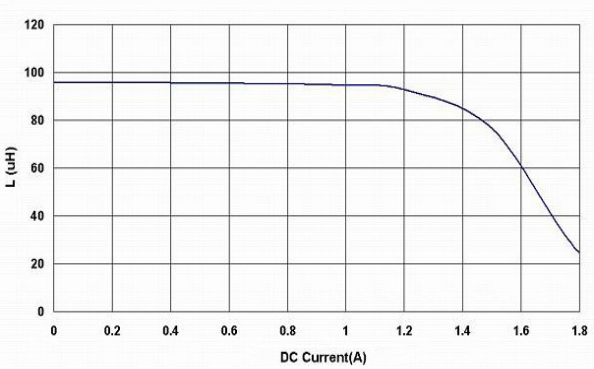
13 Graph:

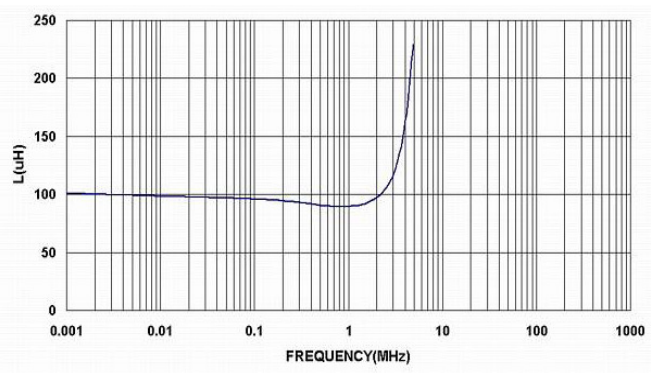
BPSL00130952680□00



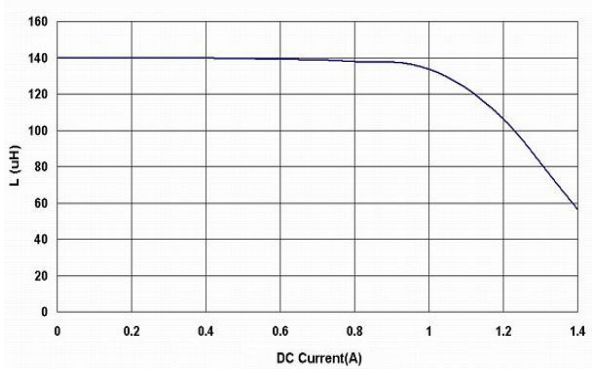


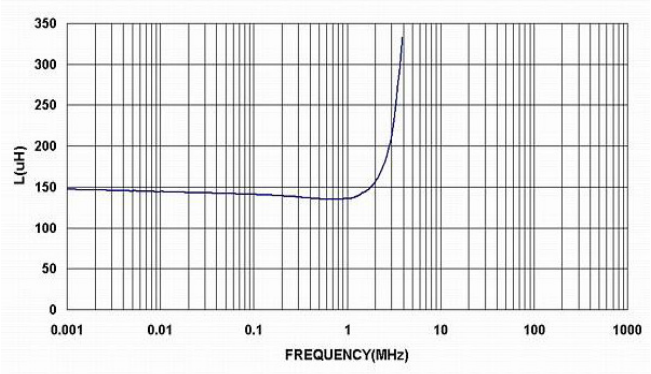
BPSL00130952101□00



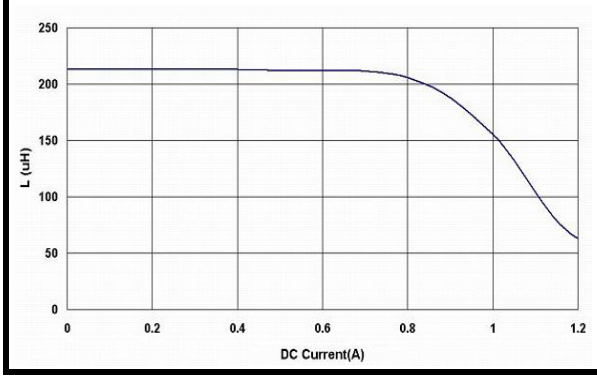


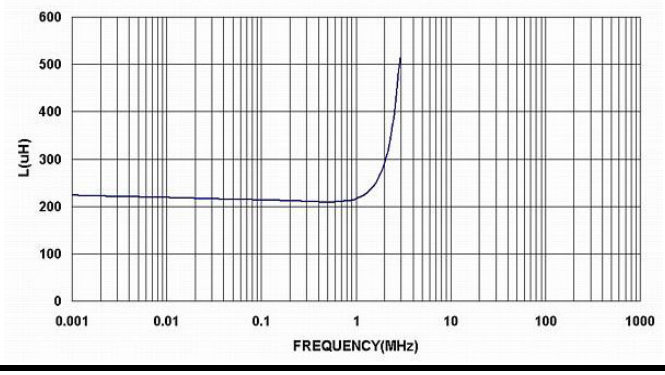
BPSL00130952151□00





BPSL00130952221□00

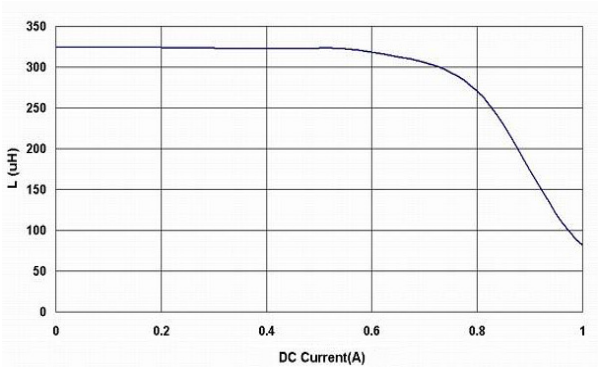


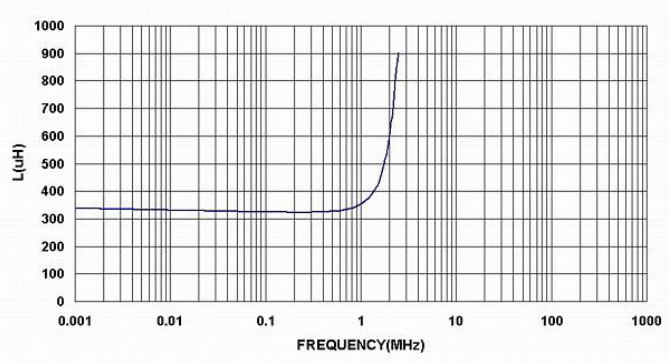


BPSL00130952 Series Specification

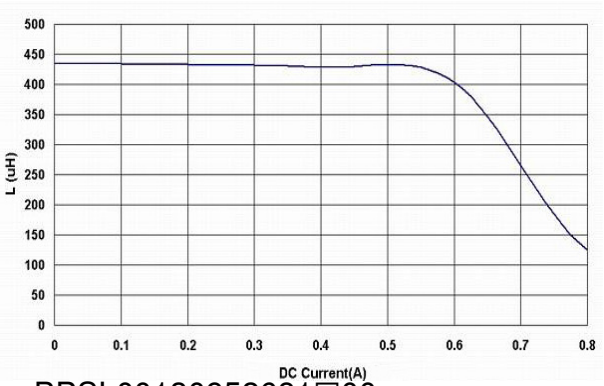
13 Graph:

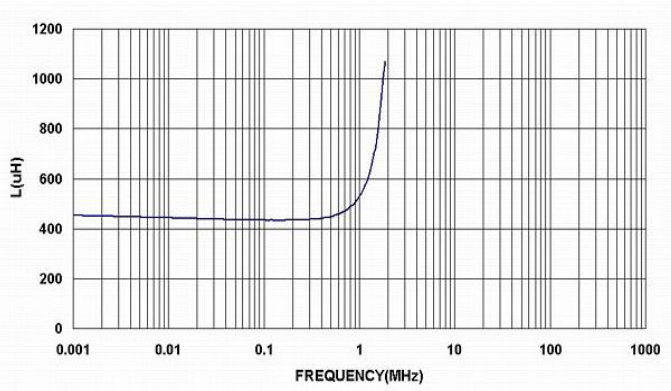
BPSL00130952331☐00



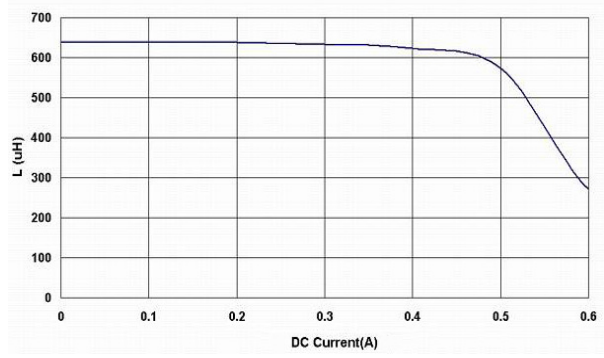


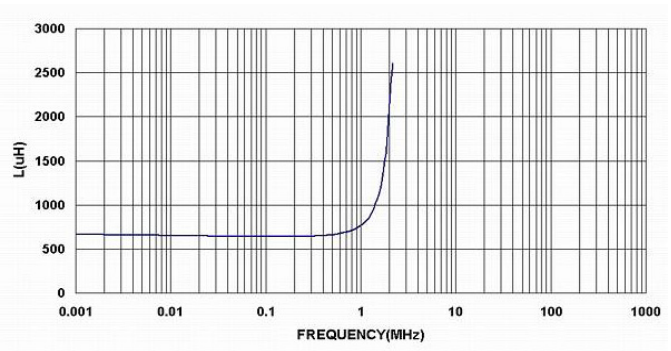
BPSL00130952471☐00



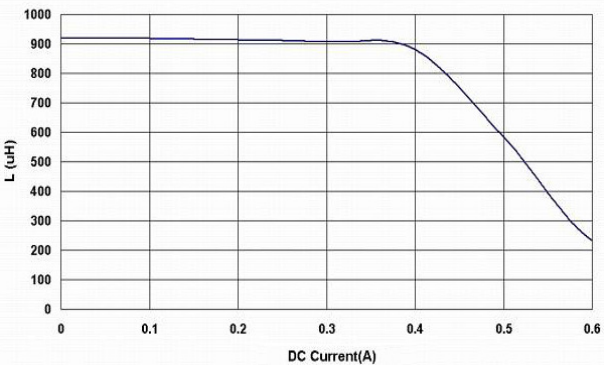


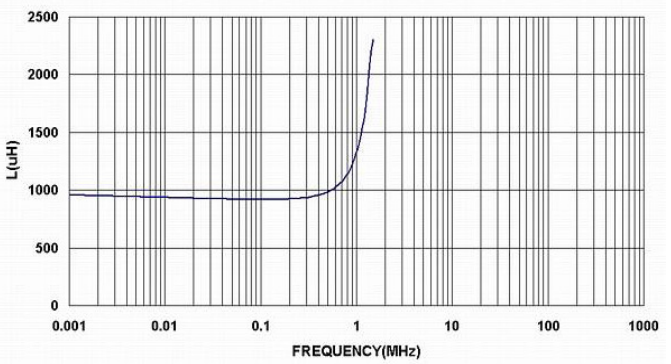
BPSL00130952681☐00





BPSL00130952102☐00





BPSL00130952 Series Specification

13 Graph:

BPSL00130952152□00