Power Inductor

BPSA 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. Low DCR

Applications

1. TV, Laptop
2. Mainboard
3. Commercial devices

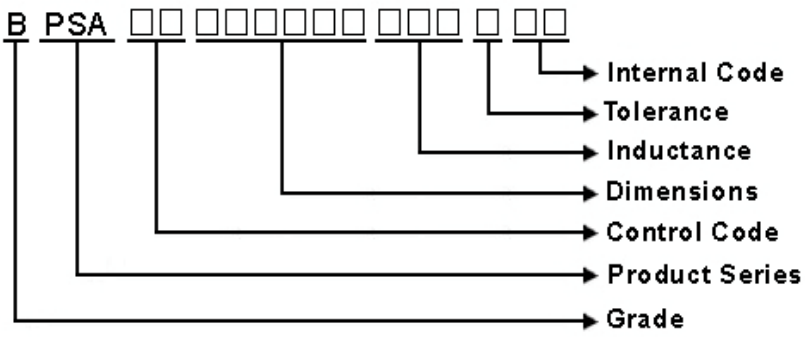
Product Information

Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPSA	6.3	6.3	3.0	1.5 ~ 1500
	7.3	7.3	4.8	
	7.3	7.3	5.8	
	12.5	12.5	5.8	

BPSA00131358 Series Specification

1 Scope: This specification applies to SMD Shielded Power Inductors

2 Part Numbering:



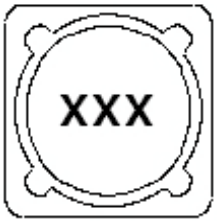
3 Rating:

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 : 101

Marking color : Black

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

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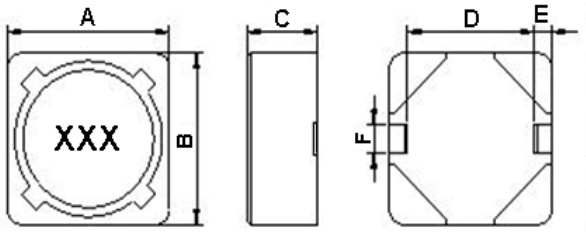
6 Configuration and Dimensions and Unit Weight:



Dimensions in mm

TYPE	131358
A	12.5 Max.
B	12.5 Max.
C	5.8 Max.
D	8.0
E	2.0
F	2.7

Net Weight (grms)

SIZE CODE	Net Weight (grms)
131358	2.84(Typ.)

7 Electrical Characteristics:

Part No.	Inductance (uH)	Test Freq.	SRF (MHz)Min.	RDC (mΩ)Max.	Isat (A)	Irms (A)	Tolerance (±%)	Marking
BPSA001313586R0T00	6	1 kHz,1V	26	19.7	3.6	4.9	30	6R0
BPSA00131358100M00	10	1 kHz,1V	17	25.8	3.4	4.3	20	100
BPSA00131358150M00	15	1 kHz,1V	15	31	2.8	3.9	20	150
BPSA00131358220M00	22	1 kHz,1V	11	40.6	2.3	3.4	20	220
BPSA00131358330M00	33	1 kHz,1V	10	49.8	1.9	3.1	20	330
BPSA00131358470M00	47	1 kHz,1V	8	74.2	1.6	2.5	20	470
BPSA00131358680M00	68	1 kHz,1V	7	99.8	1.3	2.2	20	680
BPSA00131358101M00	100	1 kHz,1V	5.5	140	1.1	1.8	20	101
BPSA00131358151M00	150	1 kHz,1V	4.5	228	0.88	1.4	20	151
BPSA00131358221M00	220	1 kHz,1V	3	324	0.72	1.2	20	221
BPSA00131358331M00	330	1 kHz,1V	3	492	0.59	1	20	331
BPSA00131358471M00	470	1 kHz,1V	2.5	624	0.49	0.88	20	471
BPSA00131358681M00	680	1 kHz,1V	2	912	0.43	0.73	20	681
BPSA00131358102M00	1000	1 kHz,1V	1.7	1344	0.34	0.6	20	102
BPSA00131358152M00	1500	1 kHz,1V	1.4	2076	0.29	0.48	20	152

NOTE: □-tolerance M=±20% / T=±30%

1.Operating temperature range - 4 0℃ ~ 1 2 5℃(Including self - temperature rise)

2.Isat for Inductance drop 10% from its value without current.

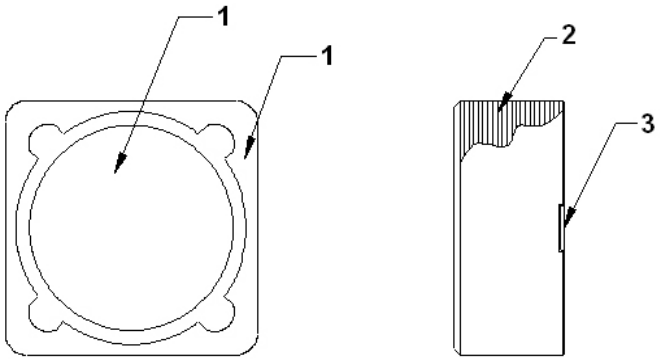
3.Irms for a 30℃ temperature rise from 25℃ ambient.

4.The actual use current is suggested not to be out of Isat*80%

BPSA00131358 Series Specification

8 BPSA00131358 Series

8.1 Construction:



8.2 Material List:

No	Part	Material
1	Core	Ferrite
2	Wire	Magnet Wire
3	Terminal	Terminal Copper

BPSA00131358 Series Specification

9 Reliability Of Ferrite Wire Wound Power Inductor

1-1.Mechanical Performance

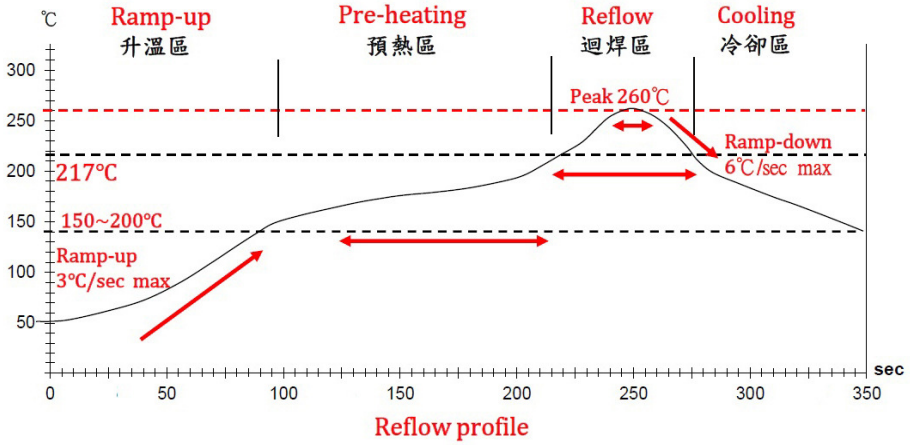
No	Item	Specification	Test Method
1-1-1	Vibration	Appearance: No damage Inductance:within±10% of initial value	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
1-1-2	Resistance to Soldering 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	Solder ability	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

<table>
<tr><th>No</th><th>Item</th><th>Specification</th><th>Test Method</th></tr>
<tr><td>1-2-1</td><td>Temperature Shock</td><td rowspan="5">Appearance: No damage
Inductance:within±10% of initial value</td><td>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</td></tr>
<tr><td>1-2-2</td><td>Temperature Cycle</td><td>One cycle:
<table>
<tr><th>Step</th><th>Temperature (℃)</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>125±3</td><td>30</td></tr>
<tr><td>4</td><td>25±2</td><td>3</td></tr>
</table>
Total: 100cycles
Measured after exposure in the room condition for 24hrs</td></tr>
<tr><td>1-2-3</td><td>Humidity Resistance</td><td>Temperature: 40±2℃
Relative Humidity: 90 ~ 95%
Time: 1000hrs
Measured after exposure in the room condition for 24hrs</td></tr>
<tr><td>1-2-4</td><td>Heat Life</td><td>Temperature: 85±3℃
Applied Current: Rated Current
Time: 1000hrs
Measured after exposure in the room condition for 24hrs</td></tr>
<tr><td>1-2-5</td><td>Cold Resistance</td><td>Temperature: -40±3℃
Time: 1000hrs
Measured after exposure in the room condition for 24hrs</td></tr>
</table>

BPSA00131358 Series Specification

Reflow Soldering Profile



Reflow profile

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

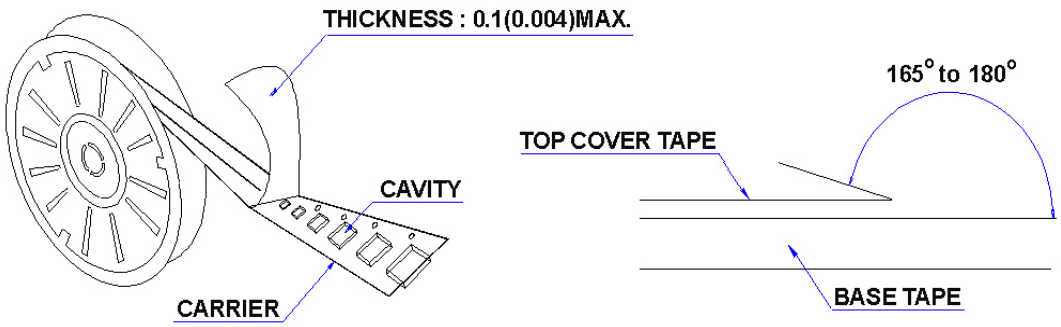
管制項目 Item.	升溫區 Ramp-up	預熱區 Pre-heating	迴焊區 Reflow	Peak Temp	冷卻區 Cooling
溫度範圍 Temp.scope	R.T ~ 150℃	150℃ ~ 200℃	217℃	260±5℃	Peak Temp.~150℃
標準時間 Time spec.	–	60 ~ 180 sec	60 ~ 150 sec	20 ~ 40 sec	–
實際時間 Time result	–	75 ~ 100 sec	90 ~ 120 sec	20 ~ 35 sec	–

BPSA00131358 Series Specification

11 Packaging:

11.1 Packaging -Cover Tape

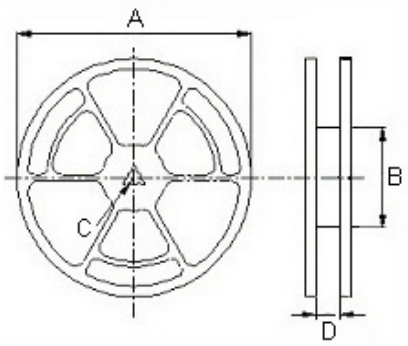
The force for tearing off cover tape is 10 to 130 grams in the arrow direction.



11.2 Packaging Quantity

TYPE	PCS/REEL
131358	600

11.3 Reel Dimensions



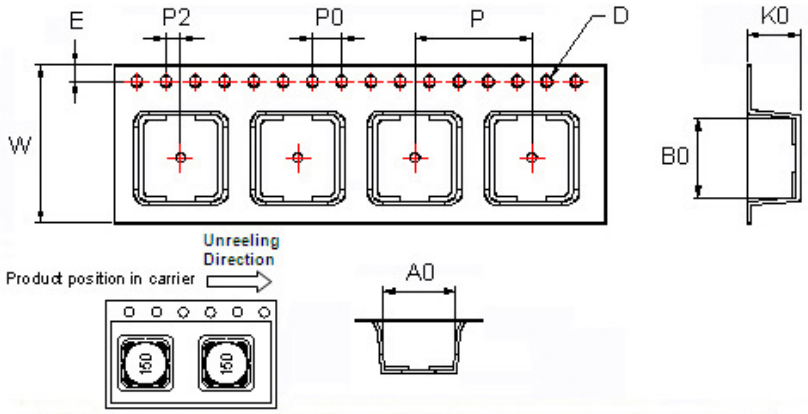
Dimensions in mm

TYPE	A	B	C	D
131358	330	100	13	24.4

BPSA00131358 Series Specification

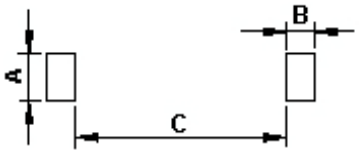
11 Packaging:

11.4 Tape Dimensions in mm



TYPE	A0	B0	K0	D	E	W	P	P0	P2
131358	12.6	12.6	6.7	1.55	1.75	24	16	4	2

12 Recommended Land Pattern:



Dimensions in mm

TYPE	A	B	C
131358	3.2	2.6	7.5

13 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.

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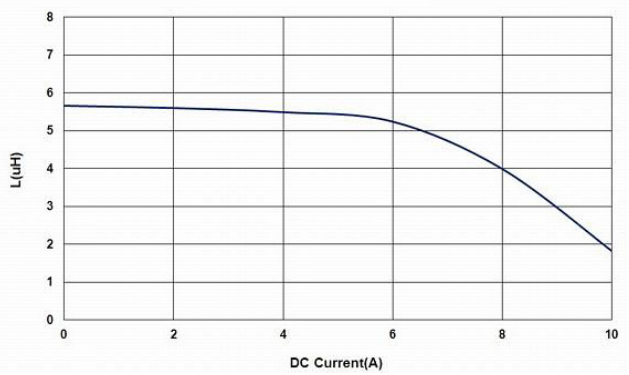
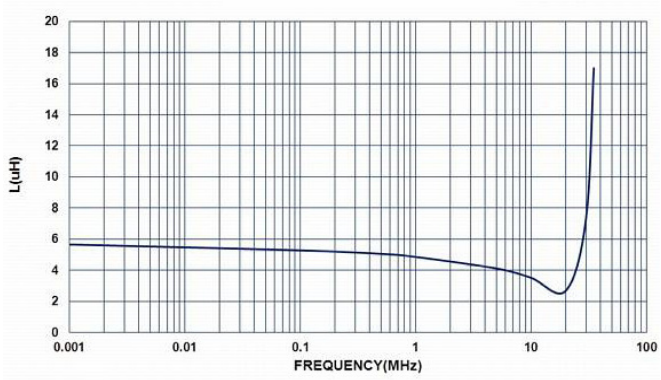
14 Graph:

BPSA001313586R0T00





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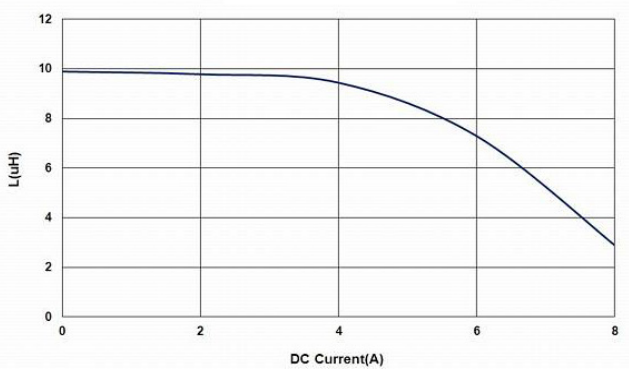

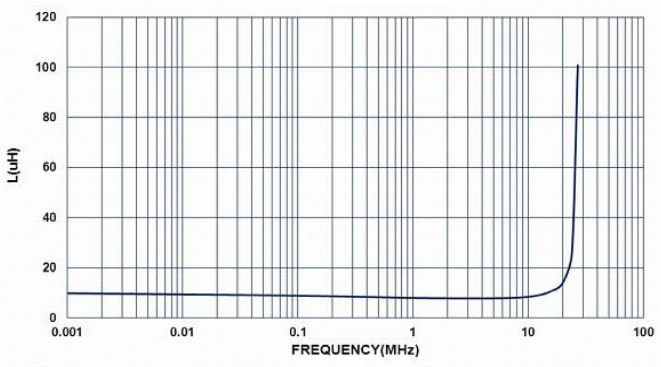

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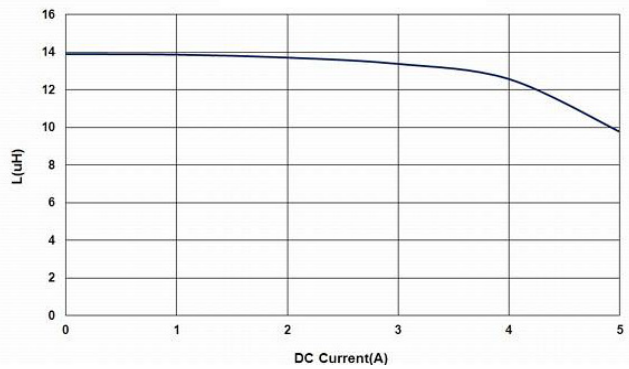

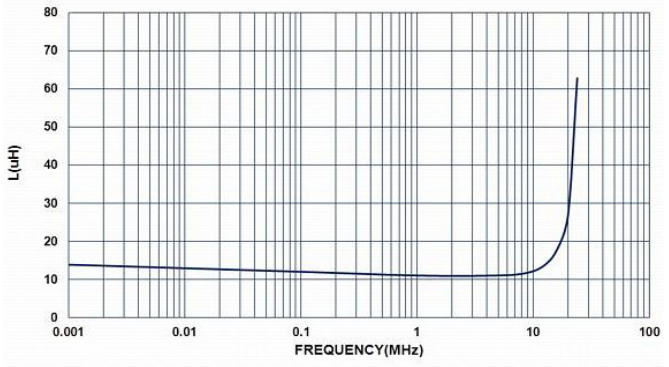

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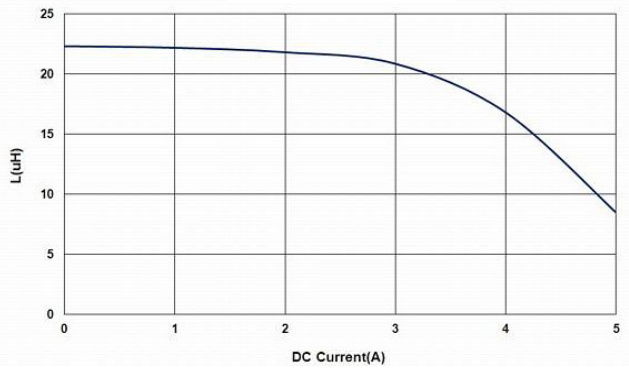

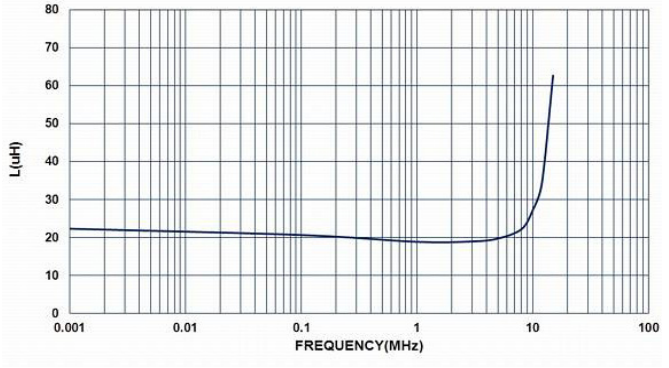

BPSA00131358 Series Specification

14 Graph:

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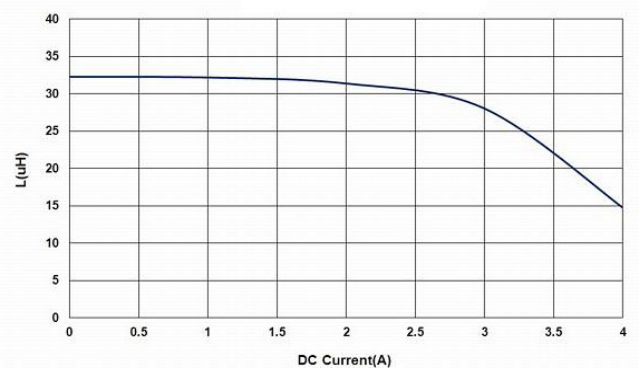

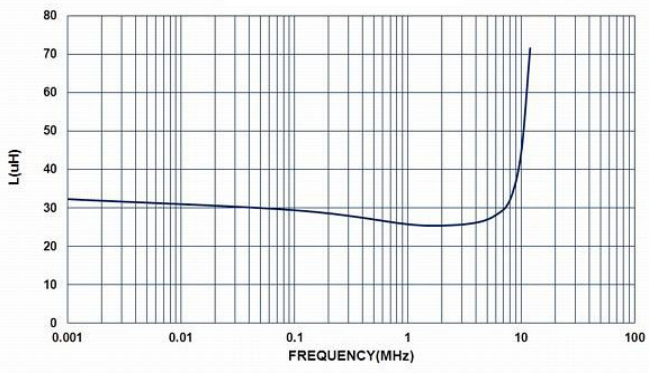

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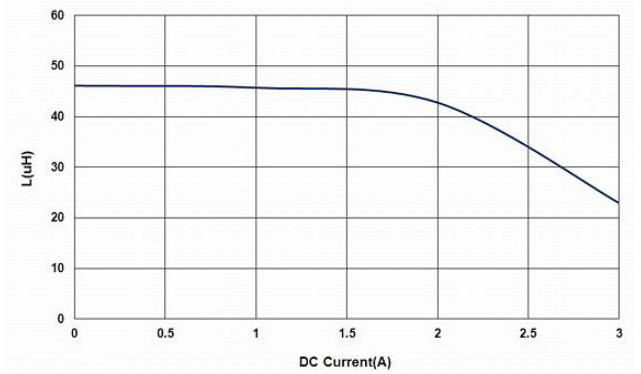

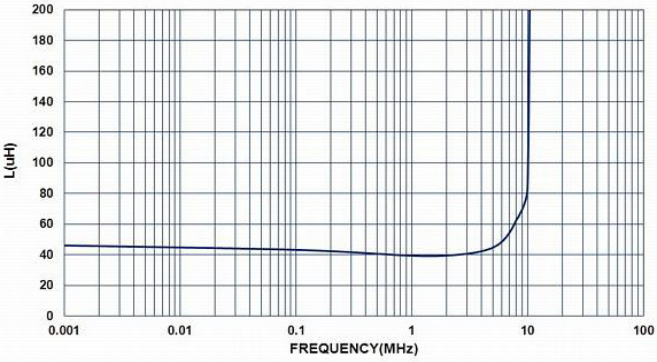

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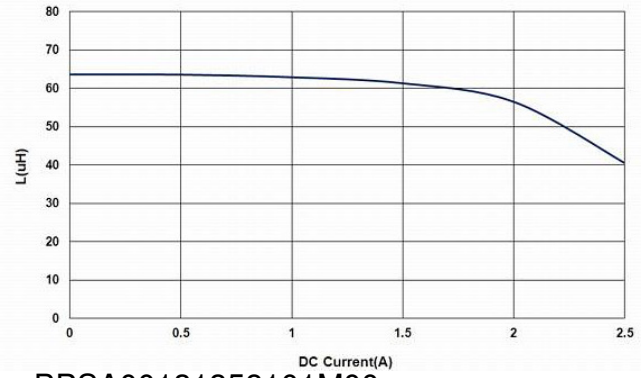

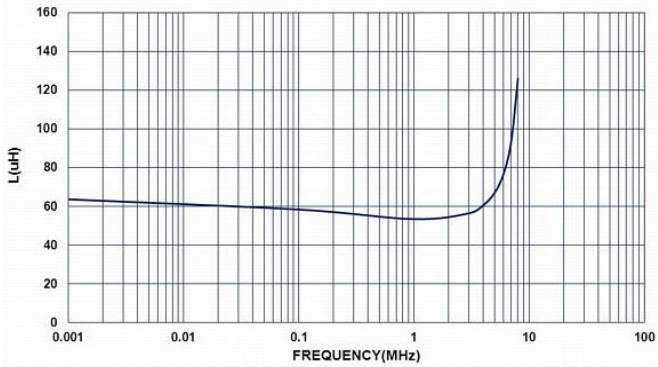

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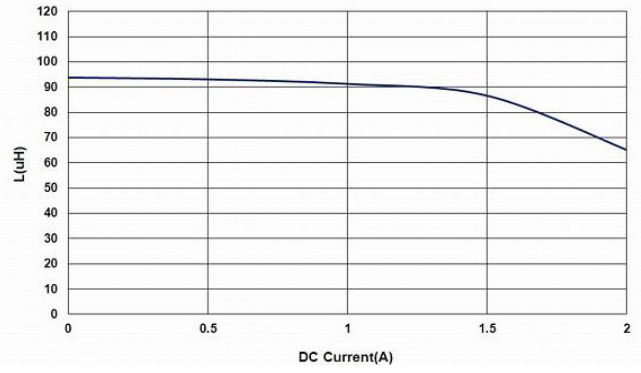

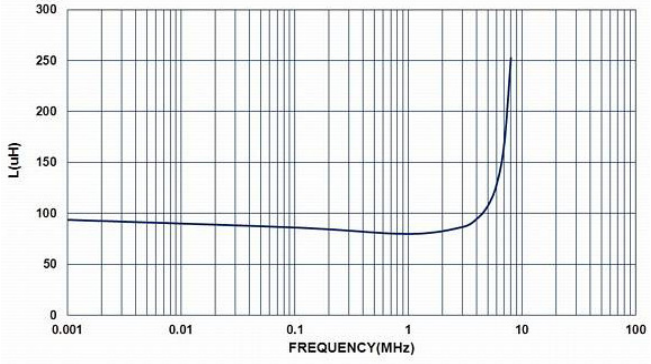

BPSA00131358 Series Specification

14 Graph:

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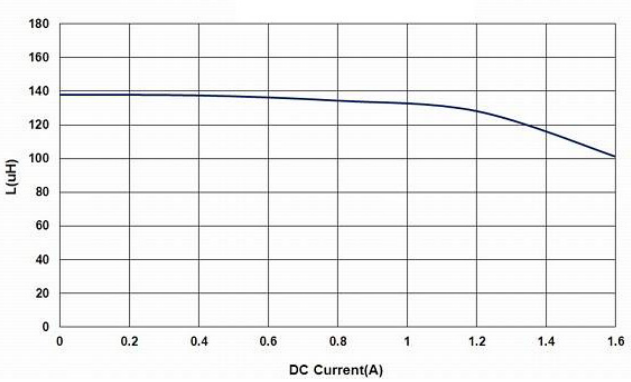

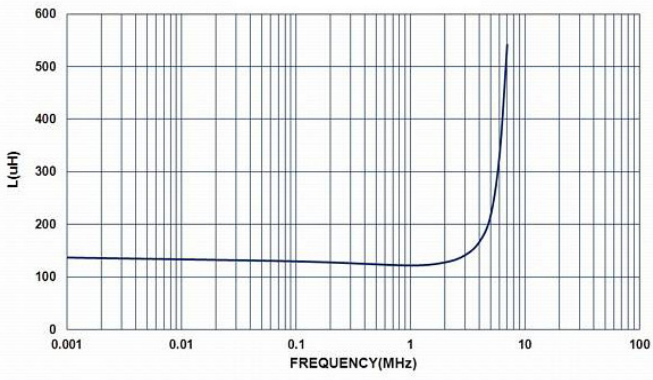

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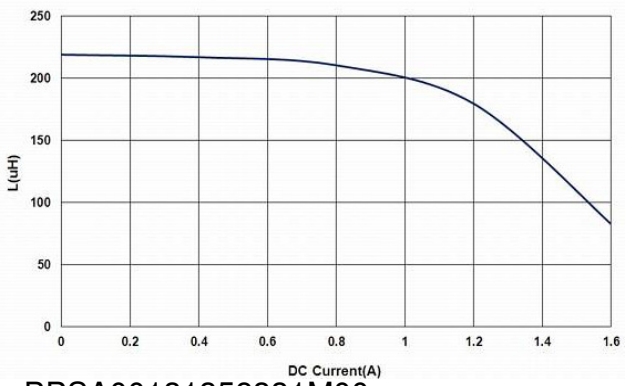

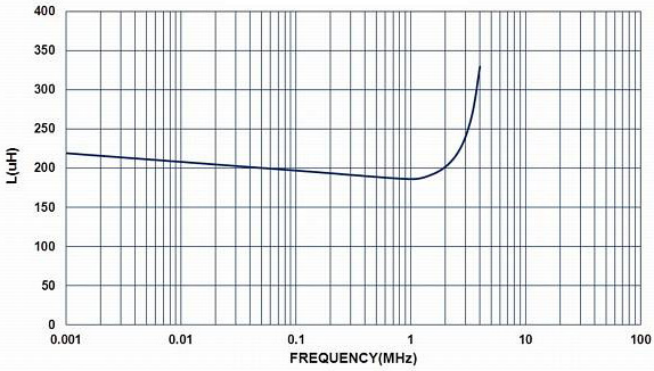

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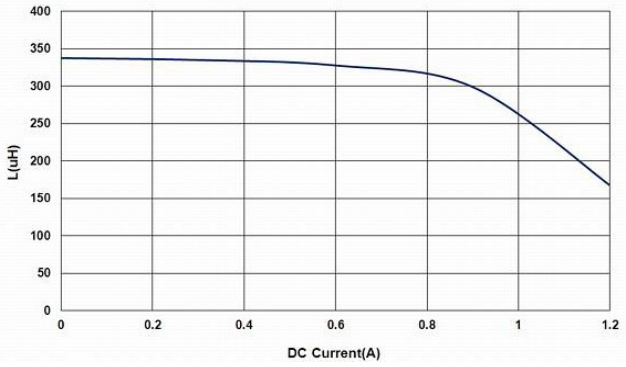

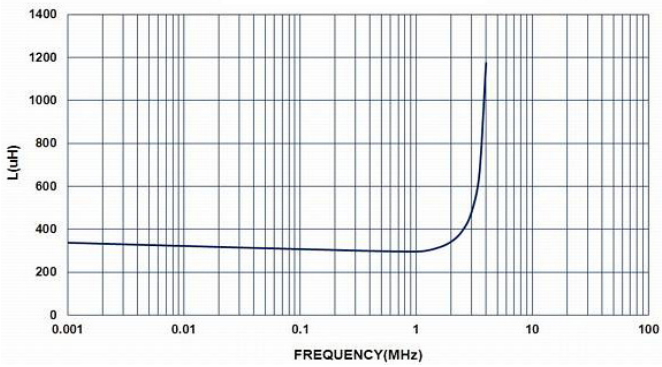

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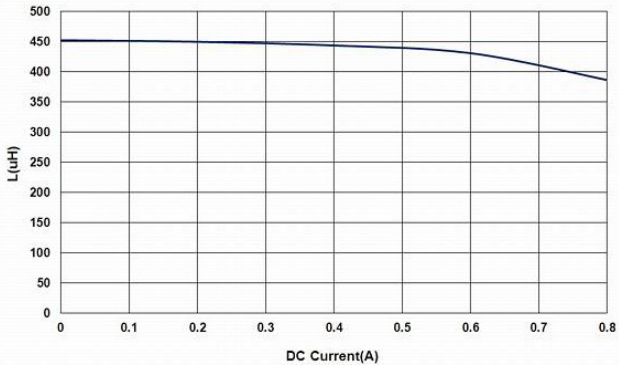

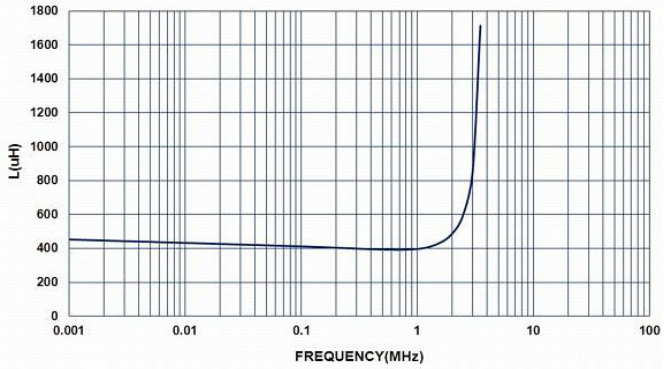

BPSA00131358 Series Specification

14 Graph:

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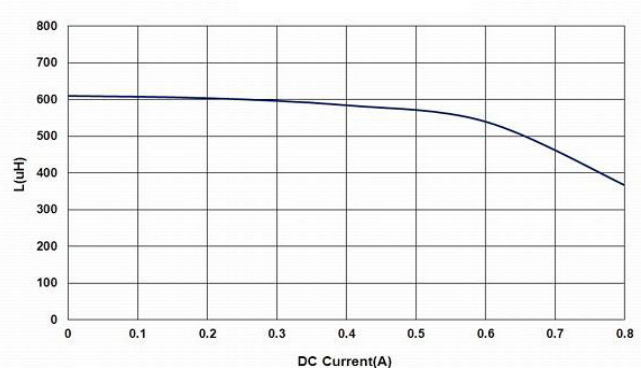

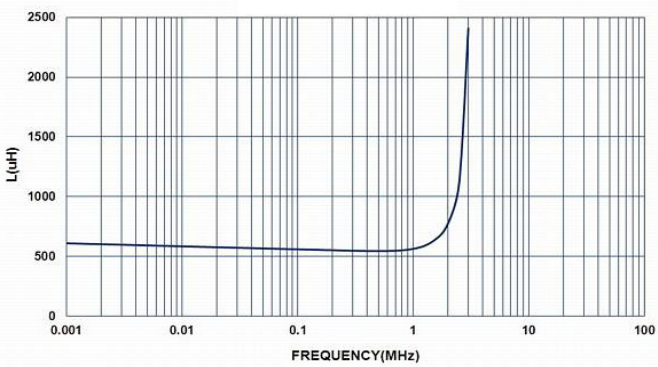

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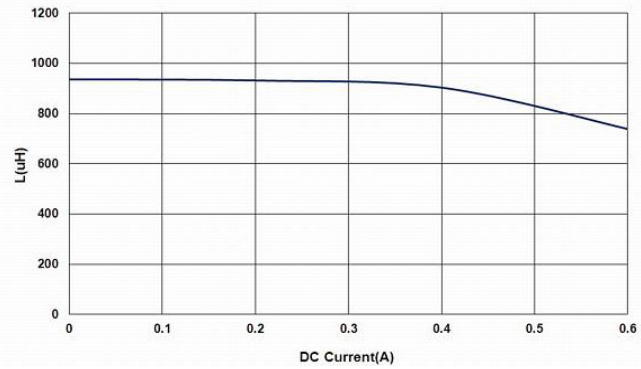

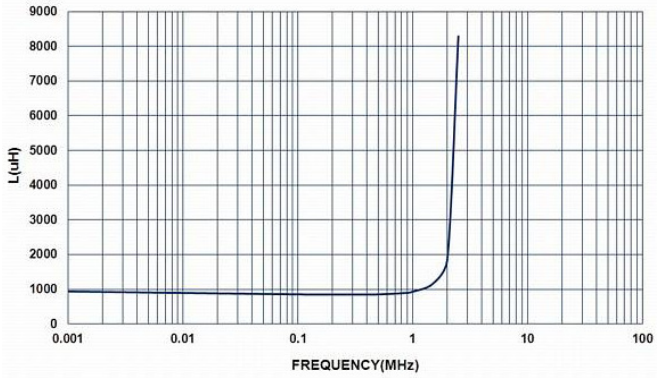

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