Power Inductor

BPCF 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. Various package size and wide inductance range

Applications

1. AP Routers, STBs
2. LCD TVs and monitors
3. Game consoles
4. LCD Lighting
5. DC/DC converters

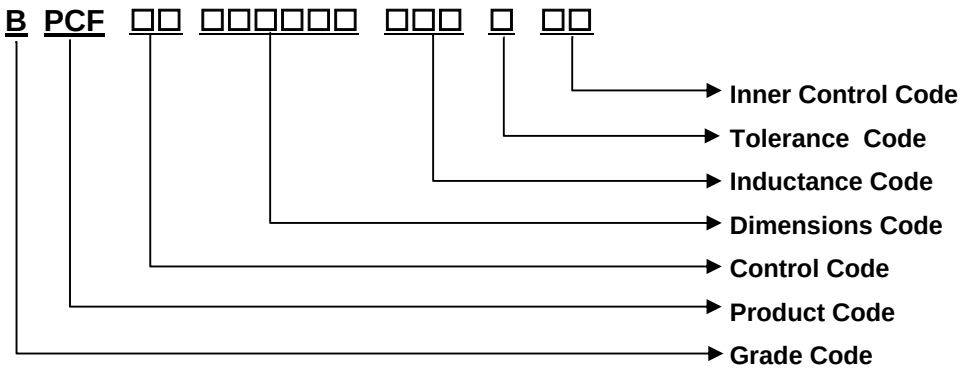
Product Information

Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPCF	6.0	6.0	2.5	1 ~ 1500
	6.0	6.0	2.8	
	7.0	7.0	2.8	
	7.0	7.0	3.2	
	7.0	7.0	4.5	
	7.0	7.0	5.5	
	10	10	4.5	
	10	10	6.5	
	12.5	12.5	5.5	
	12.5	12.5	6.5	
	12.5	12.5	7.5	

BPCF00131355 Series Specification

1 Scope: This specification applies to the Pb Free high current type SMD inductors

2 Part Numbering:



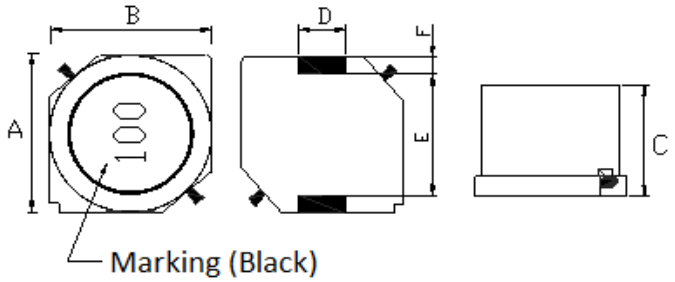
3 Rating:

Operating Temperature range: -40°C ~ +125°C (Including self temp. rise)
Storage Temperature: (on tape & reel): -20°C to +40°C; 75% RH max.

4 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

5 Configuration and Dimensions:



A: 12.5 ±0.3 mm
B: 12.5 ±0.3 mm
C: 5.5 ±0.3 mm
D: 3.0 ±0.2 mm
E: 8.5 Typ. mm
F: 2.0 Typ. mm

Net Weight (grms)

SIZE CODE	Net Weight (grms)
131355	2.45 (Typ.)

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6 Electrical Characteristics:

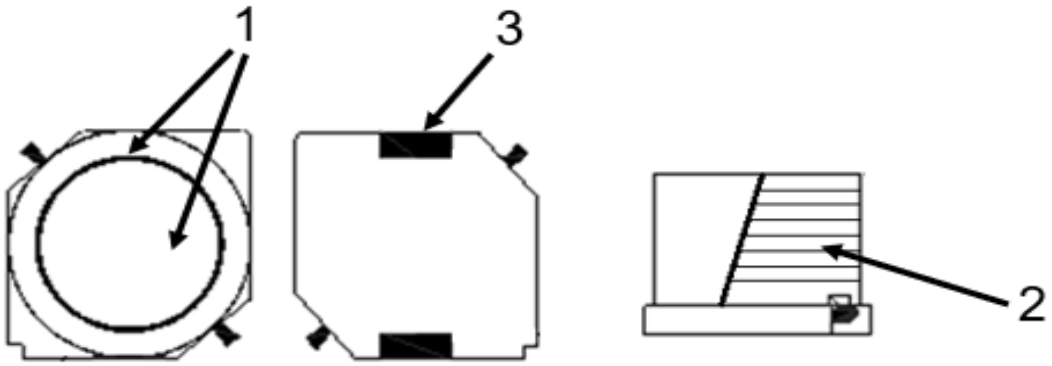
Part No.	Inductance L(μH)	Test Freq.	Resistance RDC(Ω) ±20%	Rated DC Current Isat(A)	Rated DC Current Irms(A)	Tolerance	Marking
BPCF001313556R0□00	6.0	100kHz/0.5V	16.4m	3.60	4.90	T	6R0
BPCF00131355100□00	10	100kHz/0.5V	21.5m	3.40	4.30	M,T	100
BPCF00131355150□00	15	100kHz/0.5V	25.9m	2.80	3.90	M,T	150
BPCF00131355220□00	22	100kHz/0.5V	33.8m	2.30	3.40	M,T	220
BPCF00131355330□00	33	100kHz/0.5V	41.5m	1.90	3.10	M,T	330
BPCF00131355470□00	47	100kHz/0.5V	61.8m	1.60	2.50	M,T	470
BPCF00131355680□00	68	100kHz/0.5V	83.2m	1.30	2.20	M,T	680
BPCF00131355101□00	100	100kHz/0.5V	0.117	1.10	1.80	K,M	101
BPCF00131355151□00	150	100kHz/0.5V	0.19	0.88	1.40	K,M	151
BPCF00131355221□00	220	100kHz/0.5V	0.27	0.72	1.20	K,M	221
BPCF00131355331□00	330	100kHz/0.5V	0.41	0.59	1.00	K,M	331
BPCF00131355471□00	470	100kHz/0.5V	0.52	0.49	0.88	K,M	471
BPCF00131355681□00	680	100kHz/0.5V	0.76	0.43	0.73	K,M	681
BPCF00131355102□00	1000	100kHz/0.5V	1.12	0.34	0.60	K,M	102
BPCF00131355122□00	1200	100kHz/0.5V	1.48	0.32	0.53	K,M	122
BPCF00131355152□00	1500	100kHz/0.5V	1.73	0.29	0.48	K,M	152

NOTE: tolerance M=±20%, T=±30%

1. Isat ： Based on inductance change (△L/Lo：drop 10% Max.) @ambient temperature 25°C

2. Irms： Based on temperature rise (△T： 40℃ Typ.)

6 6.1 Construction:



6.2 Material List:

NO.	ITEM	DESCRIPTION & TYPE
1	Core	Ferrite
2	Wire	Magnet Wire (P180)
3	Terminal	Terminal Copper

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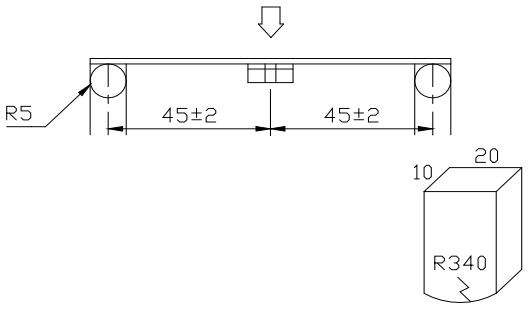
ELECTRICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Insulation resistance	There shall be no other damage or problems.	DC 100V voltage shall be applied across this sample of top surface and the terminal. The insulation resistance shall be more than 1×10^8 Ω.
Dielectric withstand voltage	There shall be no other damage or problems.	AC 100V voltage shall be applied for 1 minute acrosset the top surface and the terminal of this sample
Temperature characteristics	△L/L20℃≦±10% 0～2000 ppm/℃	The test shall be performed after the sample has stabilized in an ambient temperature of -20 to +85℃,and the value calculated based on the value applicable in a normal temperature and narmal humidity shall be △L/L20℃≦±10%.

MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Substrate bending	△L/Lo≦±10% There shall be no mechanical damage or elec-trical damage.	The sample shall be soldered onto the printed circuit board in figure 1 and a load applied unitil the figure in the arrow direction is made approximately 3mm.(keep time 30 seconds) PCB dimension shall the page 7/9 F(Pressurization)  PRESSURE ROD figure-1

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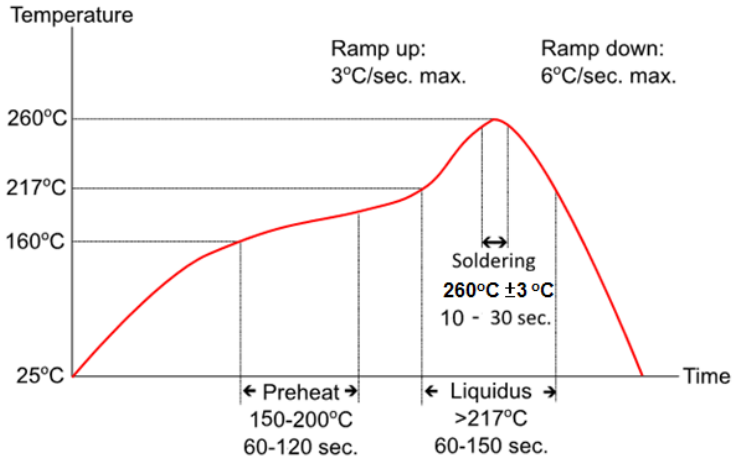
MECHANICAL

TEST ITEM	SPECIFICATION	
Vibration	△L/Lo≦±10% There shall be no mechanical damage.	The sample shall be soldered onto the printed circuit board and when a vibration having an amplitude of 1.52mm and a frequency of from 10 to 55Hz/1 minute repeated should be applied to the 3 directions (X,Y,Z) for 2 hours each. (A total of 6 hours)
Solderability	New solder More than 90%	Flux (rosin, isopropyl alcohol{JIS-K-1522}) shall be coated over the whole of the sample before hard, the sample shall then be preheated for about 2 minutes in a temperature of 130～150℃ and after it has been immersed to a depth 0.5mm below for 3±0.2 seconds fully in molten solder M705 with a temperature of 245±5℃. More than 90% of the electrode sections shall be couered with new solder smoothly when the sample is taken out of the solder bath.
Resistance to Soldering heat (reflow soldering)	There shall be no damage or problems.	Temperature profile of reflow soldering  The specimen shall be passed through the reflow oven with the condition shown in the above profile for 1 time. The specimen shall be stored at standard atmospheric conditions for 1 hour, after which the measurement shall be made.

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ENVIRONMENT CHARACTERISTICS

<table>
<tr><th>TEST ITEM</th><th colspan="2">SPECIFICATION</th></tr>
<tr><td>High temperature storage</td><td>△L/Lo≦±10%

There shall be no mechanical damage.</td><td>The sample shall be left for 96±4 hours in an atmospere with a temperature of 125℃ and a normal humidity.
Upon completion of the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour.</td></tr>
<tr><td>Low temperature storage</td><td>△L/Lo≦±10%

There shall be no mechanical damage.</td><td>The sample shall be left for 96±4 hours in an atmosphere with a temperature of -40±2℃.
Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity for 1 hour.</td></tr>
<tr><td>Change of temperature</td><td>△L/Lo≦±10%

There shall be no other dama-ge of problems</td><td>The sample shall be subject to 5 continuos cycles, such as shown in the table 2 below and then it shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made.

table 2
<table>
<tr><th></th><th>Temperature</th><th>Duration</th></tr>
<tr><td>1</td><td>-40±2℃
(Themostat No.1)</td><td>30 min.</td></tr>
<tr><td>2</td><td>Standard atmospheric</td><td>No.1→No.2</td></tr>
<tr><td>3</td><td>125℃
(Themostat No.2)</td><td>30 min.</td></tr>
<tr><td>4</td><td>Standard atmospheric</td><td>No.2→No.1</td></tr>
</table></td></tr>
<tr><td>Moisture storage</td><td>△L/Lo≦±10%

There shall be no mechanical damage.</td><td>The sample shall be left for 96±4 hours in a temperature of 40±2℃ and a humidity(RH) of 90～95%.
Upon completion of the test, the measurement shall be made after the sample has been left in a normal temperature and normal humidity more than 1 hour.</td></tr>
<tr><td colspan="3">Test conditions：
The sample shall be reflow soldered onto the printed circuit board in every test.</td></tr>
</table>

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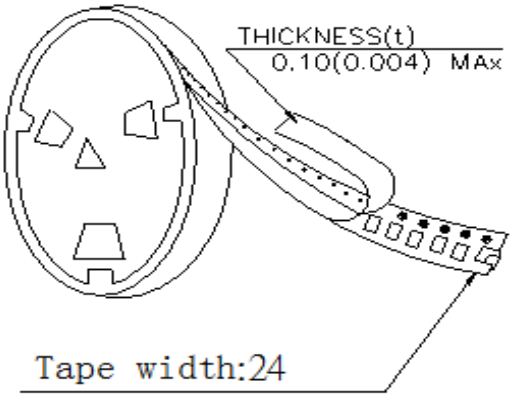
7 Packaging:

7.1 Packaging -Cover Tape

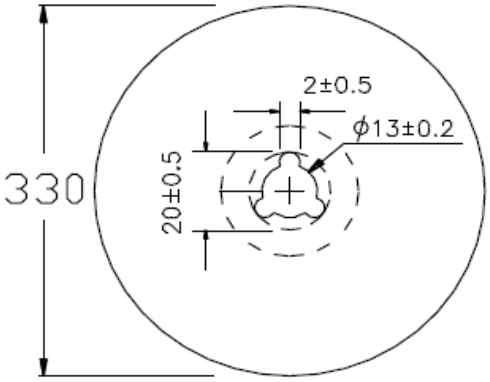


7.2 Packaging Quantity

TYPE	PCS/REEL
BPCF00131355	500

7.3 Reel Dimensions

Unit : mm



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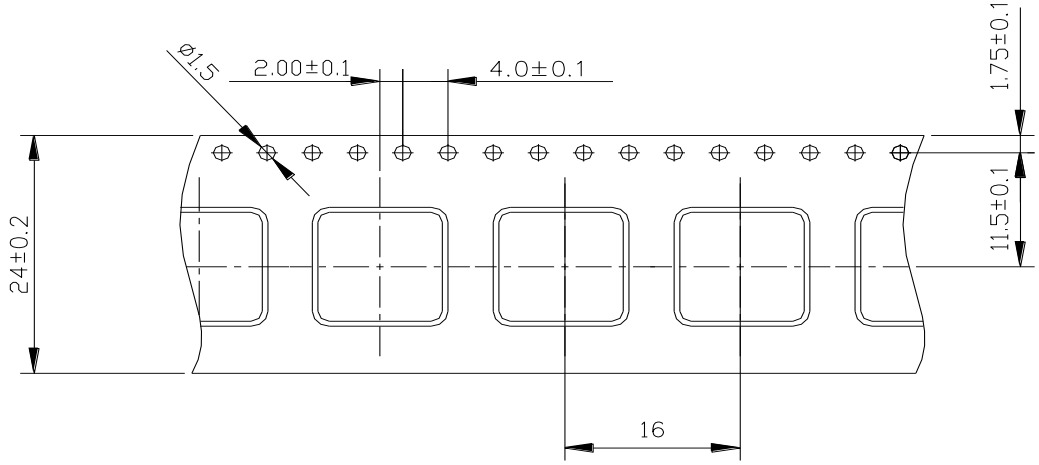
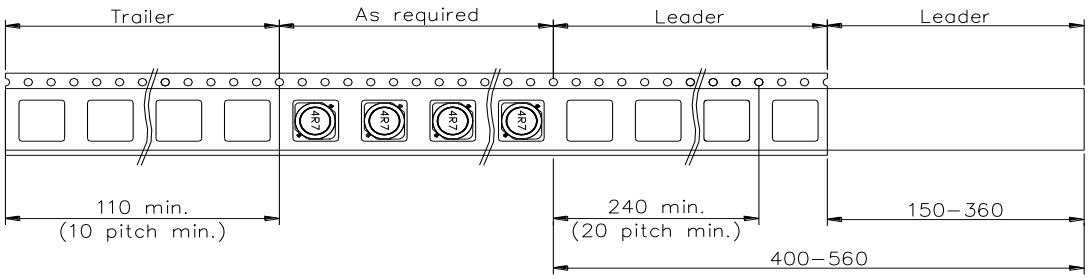
7 Packaging:

7.4 Tape Dimensions in mm

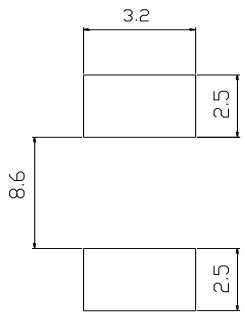


Unreeling Direction



8 Recommended Land Pattern:

(STANDARD PATTERN) **Unit : mm**



9 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 or 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.