Power Inductor

BPCI 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. LED lightings
5. DC/DC converters

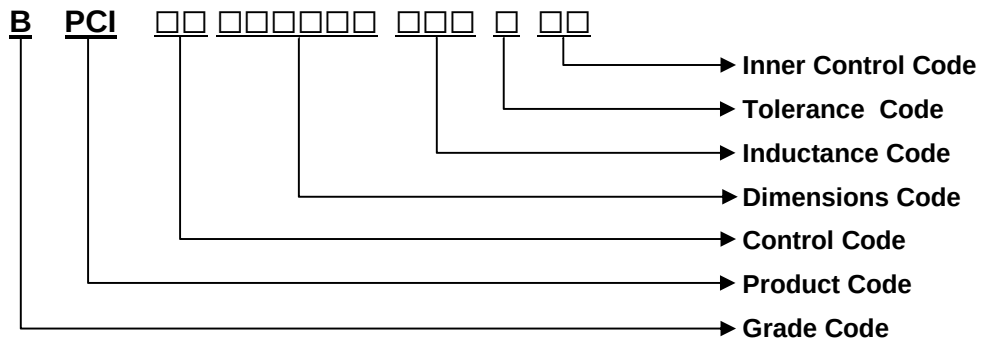
Product Information

Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPCI	7.3	7.3	4.6	0.33 ~ 10000
	12.0	12.0	5.0	
	12.0	12.0	6.0	
	12.0	12.0	8.0	
	12.0	12.0	10.0	

BPCI00121260 Series Specification

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

2 Part Numbering:



3 Rating:

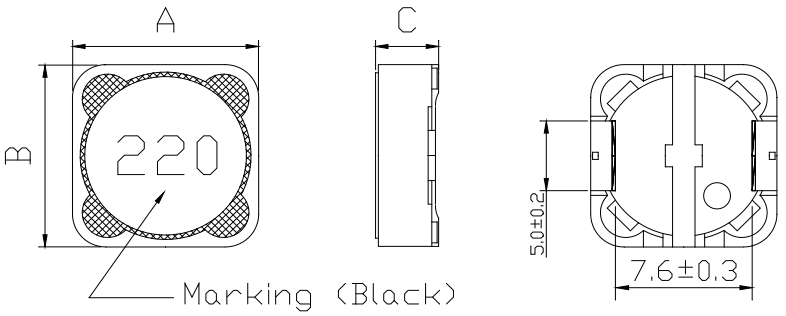
Operating Temperature: －40°C ~ 125°C(Including self - temperature rise)

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°C)	20 to 30℃
Humidity	Ordinary Humidity(25 to 85% RH)	50 to 80 %RH

5 Configuration and Dimensions:



A: 12.0±0.5 mm
B: 12.0±0.5 mm
C: 6.0 Max. mm

Net Weight (grms)

SIZE CODE	Net Weight (grms)
121260	3.12(Typ.)

BPCI00121260 Series Specification

6 Electrical Characteristics:

Part No.	Inductance L(μH)	Test Frequency	Resistance RDC(Ω) Max.	Rated DC Current Isat(A)	Rated DC Current Irms(A)	Tolerance	Marking
BPCI001212602R2□00	2.2	100kHz/0.25V	15m	6.50	6.50	T	2R2
BPCI001212602R4□00	2.4	100kHz/0.25V	15m	6.50	6.50	T	2R4
BPCI001212602R7□00	2.7	100kHz/0.25V	15m	6.50	6.50	T	2R7
BPCI001212603R3□00	3.3	100kHz/0.25V	17m	6.00	6.00	M,T	3R3
BPCI001212603R9□00	3.9	100kHz/0.25V	18m	5.70	5.70	T	3R9
BPCI001212604R7□00	4.7	100kHz/0.25V	20m	5.00	5.00	T	4R7
BPCI001212606R8□00	6.8	100kHz/0.25V	23m	4.30	4.30	M,T	6R8
BPCI001212608R2□00	8.2	100kHz/0.25V	24m	4.20	4.20	M,T	8R2
BPCI00121260100□00	10	100kHz/0.25V	25m	4.00	4.00	M,T	100
BPCI00121260120□00	12	100kHz/0.25V	27m	3.50	3.50	M,T	120
BPCI00121260150□00	15	100kHz/0.25V	30m	3.30	3.30	M,T	150
BPCI00121260180□00	18	100kHz/0.25V	34m	3.00	3.00	M,T	180
BPCI00121260220□00	22	100kHz/0.25V	36m	2.80	2.80	M,T	220
BPCI00121260270□00	27	100kHz/0.25V	51m	2.30	2.30	M,T	270
BPCI00121260330□00	33	100kHz/0.25V	57m	2.10	2.10	M,T	330
BPCI00121260390□00	39	100kHz/0.25V	68m	2.00	2.00	M,T	390
BPCI00121260470□00	47	100kHz/0.25V	75m	1.80	1.80	M,T	470
BPCI00121260560□00	56	100kHz/0.25V	0.11	1.70	1.70	M,T	560
BPCI00121260680□00	68	100kHz/0.25V	0.12	1.50	1.50	M,T	680
BPCI00121260820□00	82	100kHz/0.25V	0.14	1.40	1.40	M,T	820
BPCI00121260101□00	100	100kHz/0.25V	0.16	1.30	1.30	K,M	101
BPCI00121260121□00	120	100kHz/0.25V	0.17	1.10	1.10	K,M	121
BPCI00121260151□00	150	100kHz/0.25V	0.23	1.00	1.00	K,M	151
BPCI00121260181□00	180	100kHz/0.25V	0.29	0.90	0.90	K,M	181
BPCI00121260221□00	220	100kHz/0.25V	0.40	0.80	0.80	K,M	221

NOTE: tolerance K=±10% ,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.)

BPCI00121260 Series Specification

6 Electrical Characteristics:

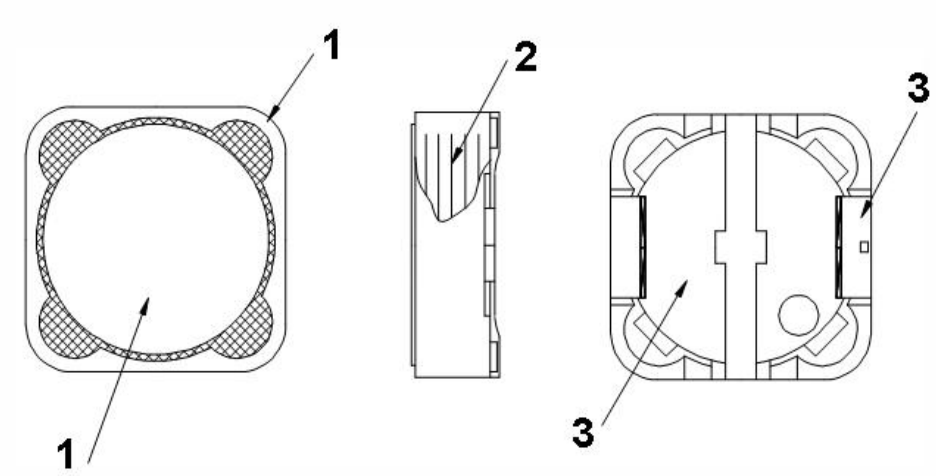
Part No.	Inductance L(μH)	Test Frequency	Resistance RDC(Ω) Max.	Rated DC Current Isat(A)	Rated DC Current Irms(A)	Tolerance	Marking
BPCI00121260271□00	270	100kHz/0.25V	0.46	0.75	0.75	K,M	271
BPCI00121260331□00	330	100kHz/0.25V	0.51	0.68	0.68	K,M	331
BPCI00121260391□00	390	100kHz/0.25V	0.69	0.65	0.65	K,M	391
BPCI00121260471□00	470	100kHz/0.25V	0.77	0.58	0.58	K,M	471
BPCI00121260561□00	560	100kHz/0.25V	0.86	0.54	0.54	K,M	561
BPCI00121260681□00	680	100kHz/0.25V	1.20	0.48	0.48	K,M	681
BPCI00121260751□00	750	100kHz/0.25V	1.27	0.45	0.45	K,M	751
BPCI00121260821□00	820	100kHz/0.25V	1.34	0.43	0.43	K,M	821
BPCI00121260102□00	1000	100kHz/0.25V	1.53	0.40	0.40	K,M	102
BPCI00121260122□00	1200	100kHz/0.25V	1.72	0.34	0.34	K,M	122

NOTE: tolerance K=±10% ,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:



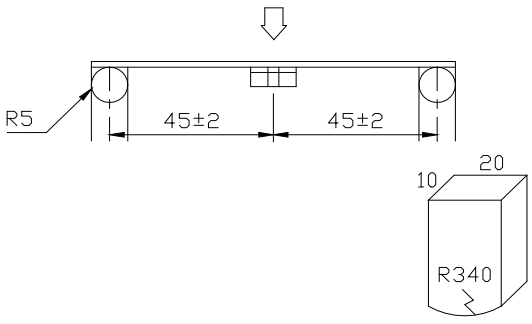
6.2 Material List:

NO.	ITEM	DESCRIPTION & TYPE
1	CORE	FERRITE
2	WIRE	MAGNET WIRE (P180)
3	TERMINAL	Ag/Cu/Ni/Sn

ELECTRICAL

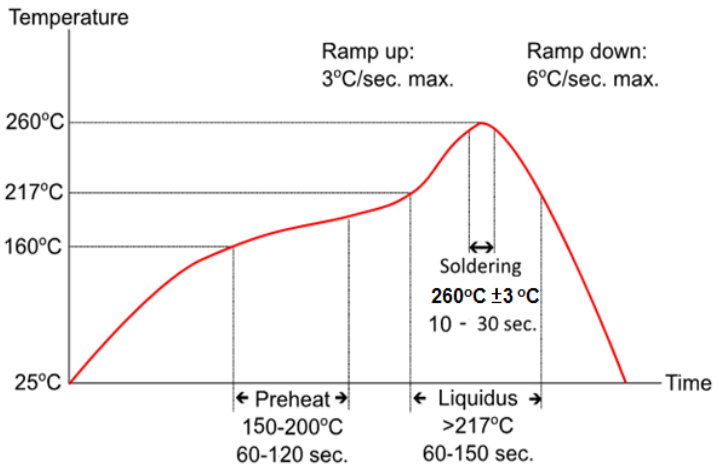
TEST ITEM	SPECIFICATION	TEST DETAILS
Insulation resistance	There shall be no other damage or problems.	DC 100V voltage shall be applied across this sample of top surface and the terminal. The insulation resistance shall be more than 1×10^8 Ω.
Dielectric withstand voltage	There shall be no other damage 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≦±5% 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

BPCI00121260 Series Specification

MECHANICAL

TEST ITEM	SPECIFICATION	
Vibration	△L/Lo≦±5% 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.

ENVIRONMENT CHARACTERISTICS

<table>
<tr><th>TEST ITEM</th><th colspan="2">SPECIFICATION</th></tr>
<tr><td>High temperature storage</td><td>△L/Lo≦±5%

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≦±5%

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±3℃.
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≦±5%

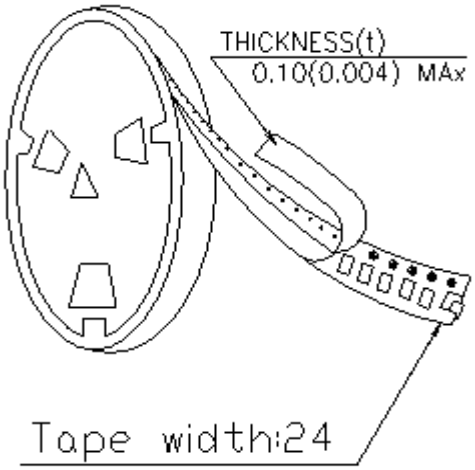
There shall be no other dama-ge of problems</td><td>The sample shall be subject to 5 continuos cycles, such as shown in the table 2 below and then it shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made.

table 2
<table><tr><th></th><th>Temperature</th><th>Duration</th></tr><tr><td>1</td><td>－40±3℃
(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±2℃
(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≦±5%

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>

7 Packaging:

7.1 Packaging -Cover Tape

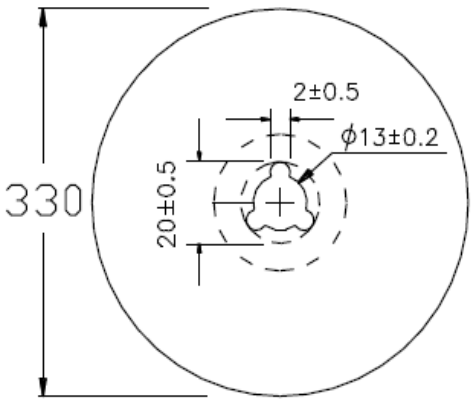


7.2 Packaging Quantity

TYPE	PCS/REEL
BPCI00121260	500

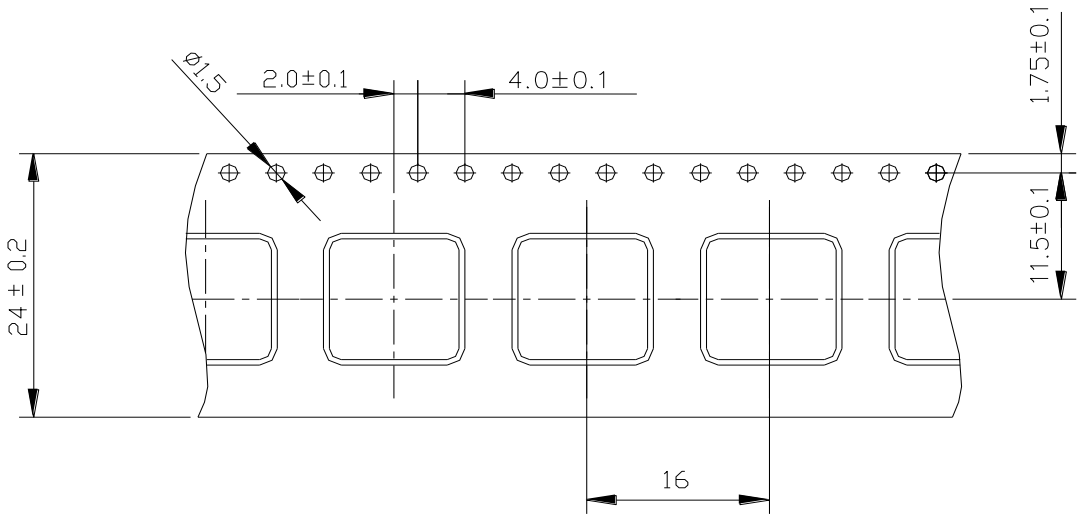
7.3 Reel Dimensions

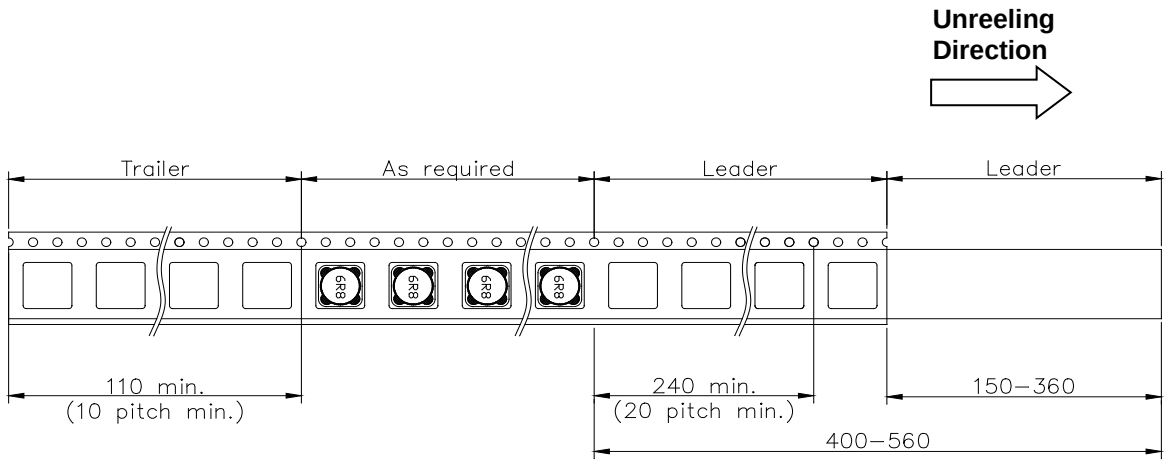
Unit : mm



7 Packaging:

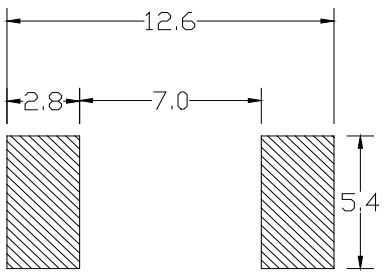
7.4 Tape Dimensions in mm





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.