

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

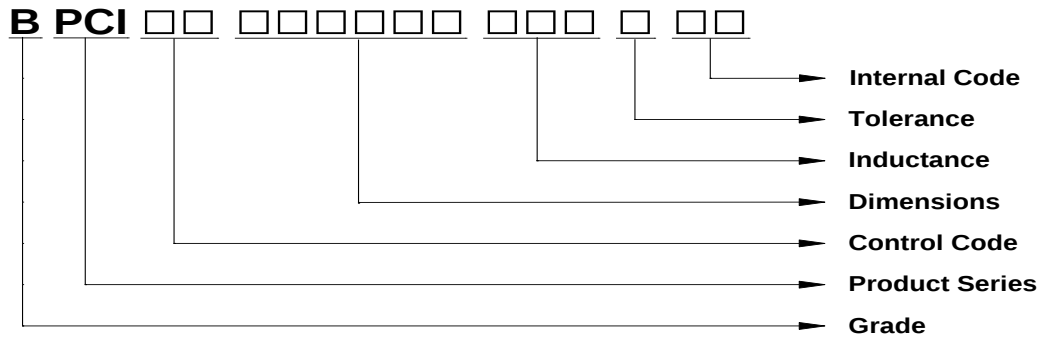
Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPCI	7.3	7.3	4.6	0.33 ~ 10000
	12.0	12.0	5.0	
	12.0	12.0	6.0	
	12.0	12.0	8.0	
	12.0	12.0	10.0	



BPCI00070746 Series Specification

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

2 Part Numbering:



3 Rating:

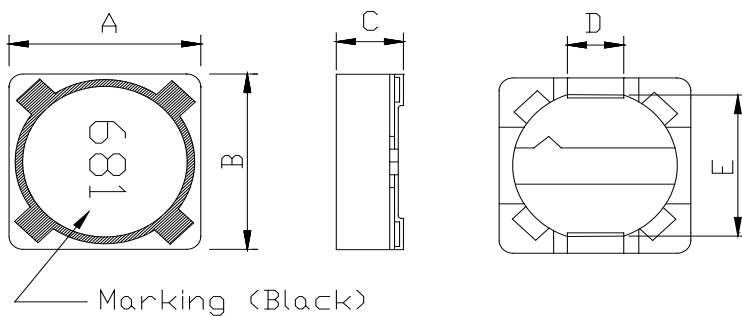
Operating Temperature: - 40°C ~ 125°C(Including self - temperature rise)

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

5 Configuration and Dimensions and Unit Weight:



A: 7.30±0.5	mm
B: 7.30±0.5	mm
C: 4.60Max.	mm
D: 2.00 Typ.	mm
E: 5.00 Typ.	mm

Marking XXX
Marking color:Black

Net Weight (grms)

SIZE CODE	Net Weight (grms)
070746	0.85(Typ.)

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6 Electrical Characteristics:

Part No.	Inductance L(μH)	Test Frequency	Resistance RDC(Ω) Max.	Rated DC Current		Tolerance	Marking
				Isat(A)	Irms(A)		
BPCI00070746R33□00	0.33	100kHz/0.25V	8.7m	8.5	8.5	T	R33
BPCI00070746R47□00	0.47	100kHz/0.25V	10.9m	8.0	8.0	T	R47
BPCI000707461R0□00	1.0	100kHz/0.25V	11.1m	6.8	6.8	T	1R0
BPCI000707461R2□00	1.2	100kHz/0.25V	11.1m	6.8	6.8	T	1R2
BPCI000707461R5□00	1.5	100kHz/0.25V	13.4m	5.7	5.7	T	1R5
BPCI000707461R8□00	1.8	100kHz/0.25V	14.7m	5.0	5.0	T	1R8
BPCI000707462R2□00	2.2	100kHz/0.25V	14.7m	5.0	5.0	T	2R2
BPCI000707463R3□00	3.3	100kHz/0.25V	21.4m	4.0	4.0	T	3R3
BPCI000707464R7□00	4.7	100kHz/0.25V	31.0m	3.4	3.4	T	4R7
BPCI000707465R6□00	5.6	100kHz/0.25V	33.5m	3.0	3.0	M,T	5R6
BPCI000707466R8□00	6.8	100kHz/0.25V	35m	2.3	2.3	M,T	6R8
BPCI000707468R2□00	8.2	100kHz/0.25V	42m	2.1	2.1	M,T	8R2
BPCI00070746100□00	10	100kHz/0.25V	49m	1.84	1.84	M	100
BPCI00070746120□00	12	100kHz/0.25V	58m	1.71	1.71	M	120
BPCI00070746150□00	15	100kHz/0.25V	81m	1.47	1.47	M	150
BPCI00070746180□00	18	100kHz/0.25V	91m	1.31	1.31	M	180
BPCI00070746220□00	22	100kHz/0.25V	0.11	1.23	1.23	M	220
BPCI00070746270□00	27	100kHz/0.25V	0.15	1.12	1.12	M	270
BPCI00070746330□00	33	100kHz/0.25V	0.20	0.96	0.96	M	330
BPCI00070746390□00	39	100kHz/0.25V	0.23	0.91	0.91	M	390
BPCI00070746470□00	47	100kHz/0.25V	0.26	0.88	0.88	M	470
BPCI00070746560□00	56	100kHz/0.25V	0.35	0.75	0.75	M	560
BPCI00070746680□00	68	100kHz/0.25V	0.38	0.69	0.69	M	680
BPCI00070746820□00	82	100kHz/0.25V	0.43	0.61	0.61	M	820
BPCI00070746101□00	100	100kHz/0.25V	0.61	0.60	0.60	M	101
BPCI00070746121□00	120	100kHz/0.25V	0.66	0.52	0.52	M	121
BPCI00070746151□00	150	100kHz/0.25V	0.88	0.46	0.46	M	151
BPCI00070746181□00	180	100kHz/0.25V	0.98	0.42	0.42	M	181
BPCI00070746221□00	220	100kHz/0.25V	1.17	0.36	0.36	M	221
BPCI00070746271□00	270	100kHz/0.25V	1.64	0.34	0.34	M	271
BPCI00070746331□00	330	100kHz/0.25V	1.86	0.32	0.32	M	331
BPCI00070746391□00	390	100kHz/0.25V	2.85	0.29	0.29	M	391
BPCI00070746471□00	470	100kHz/0.25V	3.01	0.26	0.26	M	471
BPCI00070746561□00	560	100kHz/0.25V	3.62	0.23	0.23	M	561
BPCI00070746681□00	680	100kHz/0.25V	4.63	0.22	0.22	M	681
BPCI00070746821□00	820	100kHz/0.25V	5.20	0.20	0.20	M	821
BPCI00070746102□00	1000	100kHz/0.25V	6.00	0.18	0.18	M	102

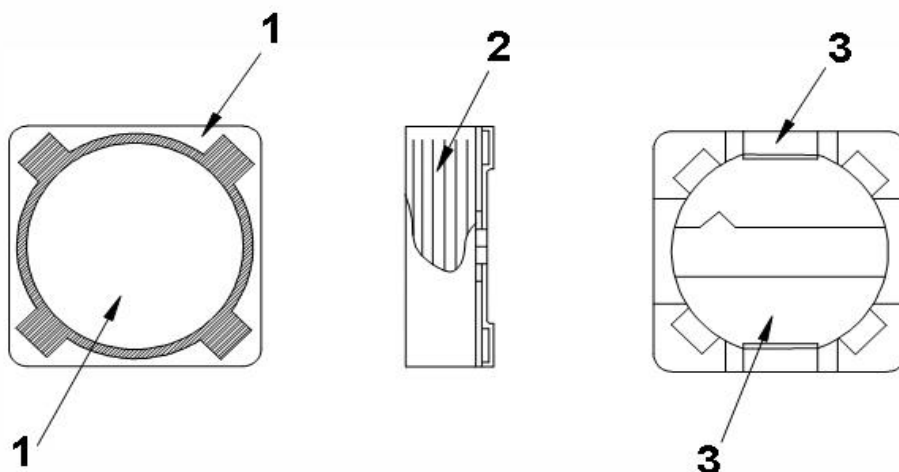
NOTE: tolerance M=±20% T=±30%

1.Isat : Based on inductance change ($\Delta L/L_0$: drop 25% Max.) @ambient Temperature : 25°C

2.Irms : Based on temperature rise (ΔT : 40°C Typ.)

BPCI00070746 Series Specification

6.1 Construction:



6.2 Material List:

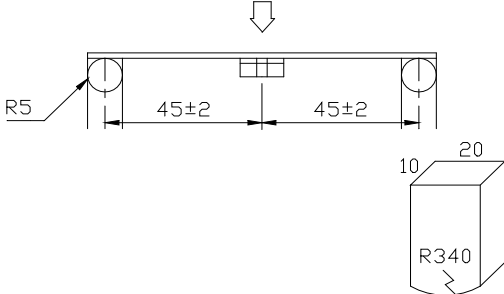
NO.	ITEM	DESCRIPTION & TYPE
1	CORE	FERRITE
2	Wire	Magnet Wire
3	CLIP	COPPER FOIL

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ELECTRICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Temperature characteristics	$\Delta L/L_{20^{\circ}\text{C}} \leq \pm 10\%$ $0 \sim 2000 \text{ ppm}/^{\circ}\text{C}$	The test shall be performed after the sample has stabilized in an ambient temperature of -20 to $+85^{\circ}\text{C}$, and the value calculated based on the value applicable in a normal temperature and normal humidity shall be $\Delta L/L_{20^{\circ}\text{C}} \leq \pm 10\%$.

MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Substrate bending	$\Delta L/L_0 \leq \pm 10\%$ There shall be no mechanical damage or electrical damage.	The sample shall be soldered onto the printed circuit board in figure 1 and a load applied until 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	$\Delta L/L_0 \leq \pm 10\%$ 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°C 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°C. More than 90% of the electrode sections shall be covered 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 graph shows a temperature profile for reflow soldering. The y-axis is Temperature (°C) with markers at 25, 160, 217, and 260. The x-axis is Time. The profile starts at 25°C, rises through a preheat phase (150-200°C, 60-120 sec), enters a liquidus phase (>217°C, 60-150 sec), reaches a peak soldering temperature of 260°C ± 3°C for 10-30 seconds, and then ramps down at 6°C/sec max. The ramp up is at 3°C/sec max. 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

TEST ITEM	SPECIFICATION																
High temperature storage	$\Delta L/Lo \leq \pm 10\%$ There shall be no mechanical damage.	The sample shall be left for 96 ± 4 hours in an atmosphere with a temperature of 125°C 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.															
Low temperature storage	$\Delta L/Lo \leq \pm 10\%$ There shall be no mechanical damage.	The sample shall be left for 96 ± 4 hours in an atmosphere with a temperature of $-40 \pm 3^\circ\text{C}$. 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.															
Change of temperature	$\Delta L/Lo \leq \pm 10\%$ There shall be no other damage of problems	The sample shall be subject to 5 continuous 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 border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th></th><th>Temperature</th><th>Duration</th></tr> </thead> <tbody> <tr> <td>1</td><td>$-40 \pm 3^\circ\text{C}$ (Thermostat 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>$125 \pm 2^\circ\text{C}$ (Thermostat No.2)</td><td>30 min.</td></tr> <tr> <td>4</td><td>Standard atmospheric</td><td>No.2→No.1</td></tr> </tbody> </table>		Temperature	Duration	1	$-40 \pm 3^\circ\text{C}$ (Thermostat No.1)	30 min.	2	Standard atmospheric	No.1→No.2	3	$125 \pm 2^\circ\text{C}$ (Thermostat No.2)	30 min.	4	Standard atmospheric	No.2→No.1
	Temperature	Duration															
1	$-40 \pm 3^\circ\text{C}$ (Thermostat No.1)	30 min.															
2	Standard atmospheric	No.1→No.2															
3	$125 \pm 2^\circ\text{C}$ (Thermostat No.2)	30 min.															
4	Standard atmospheric	No.2→No.1															
Moisture storage	$\Delta L/Lo \leq \pm 10\%$ There shall be no mechanical damage.	The sample shall be left for 96 ± 4 hours in a temperature of $40 \pm 2^\circ\text{C}$ 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.															

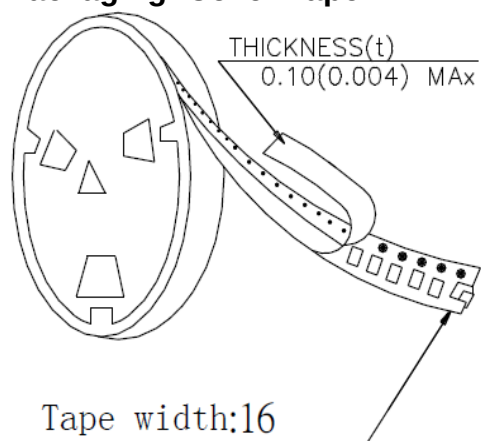
Test conditions :

The sample shall be reflow soldered onto the printed circuit board in every test.

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7 Packaging:

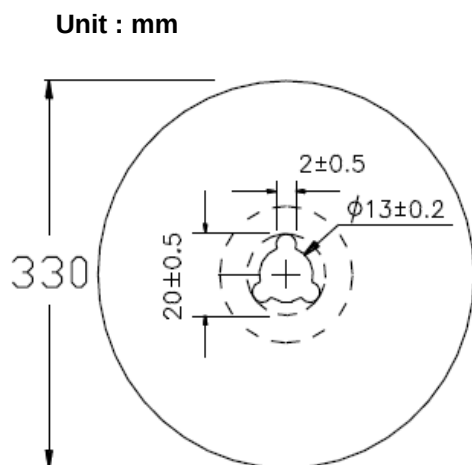
7.1 Packaging -Cover Tape



7.2 Packaging Quantity

TYPE	PCS/REEL
BPCI00070746	1000

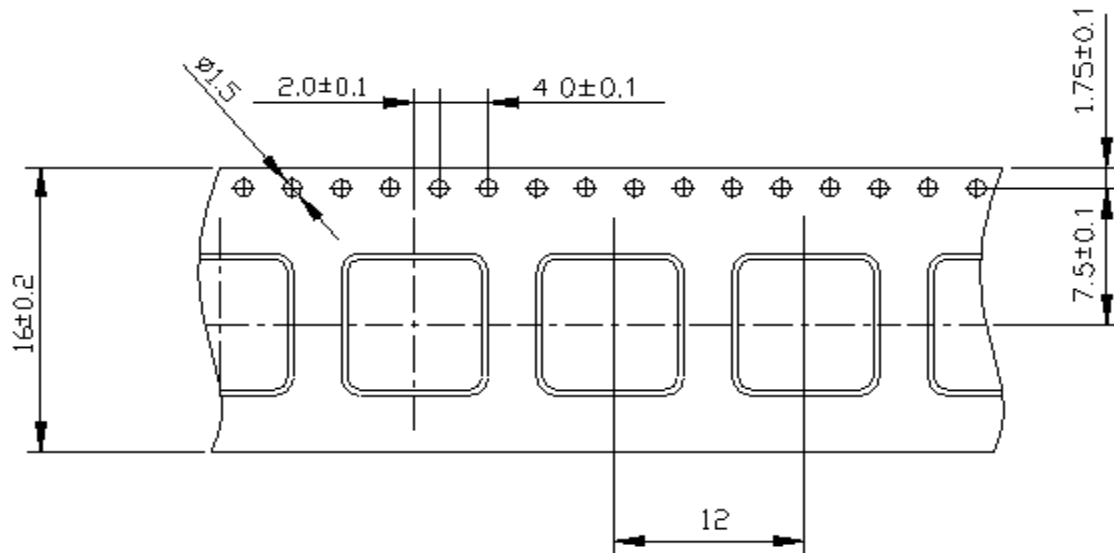
7.3 Reel Dimensions



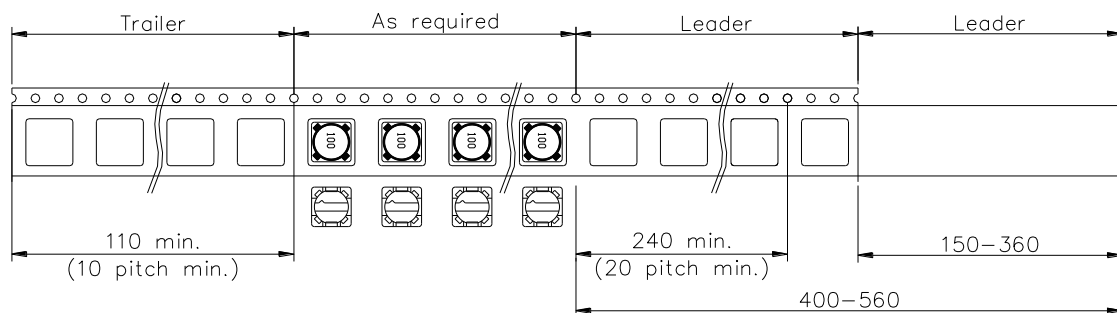
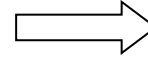
BPCI00070746 Series Specification

7 Packaging:

7.4 Tape Dimensions in mm

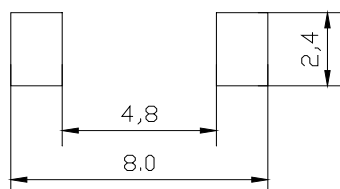


Unreeling
Direction



8 Recommended Land Pattern:

(STANDARD PATTERN) Unit : mm



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9 Note:

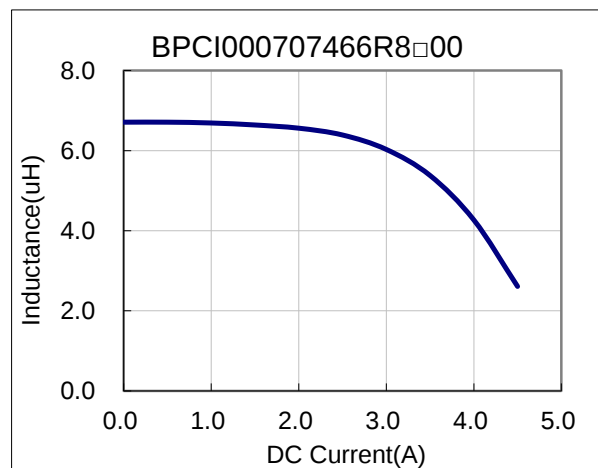
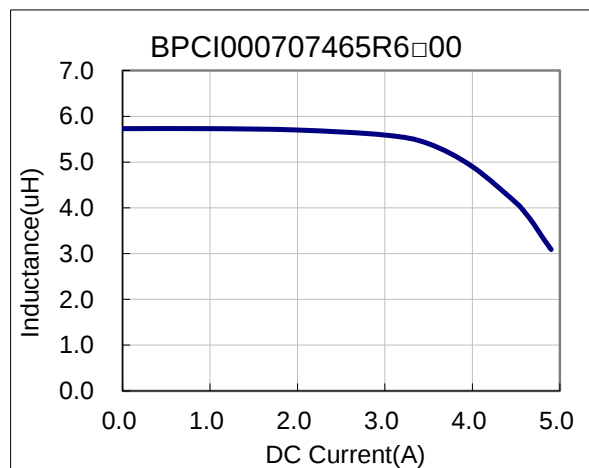
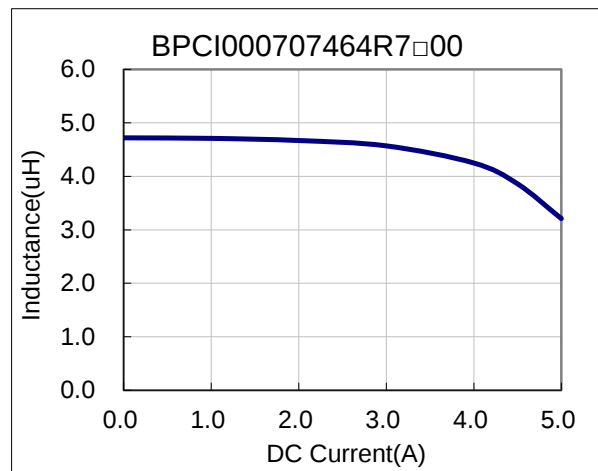
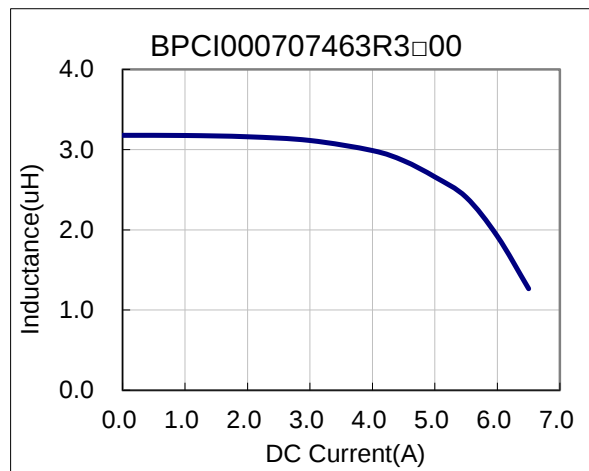
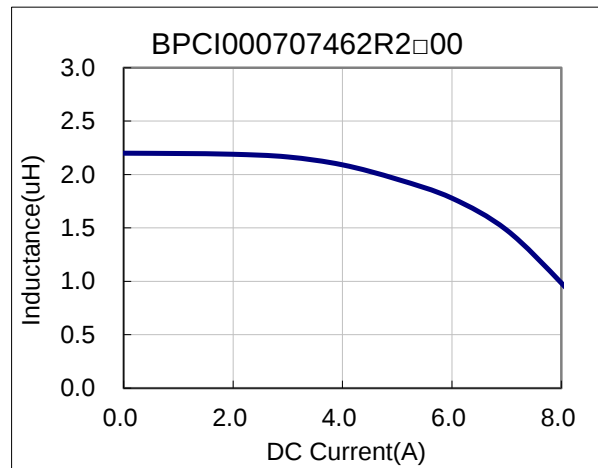
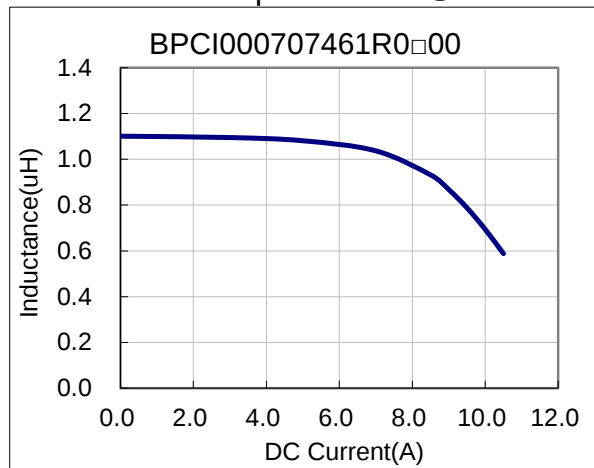
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock or drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose, 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.

BPCI00070746-Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/0.25V

Ambient Temperature : @25°C

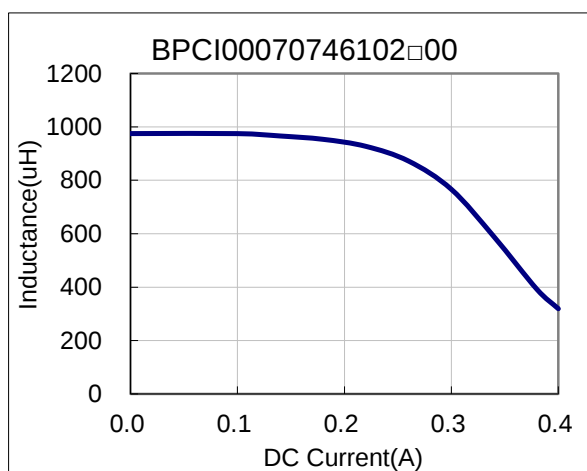
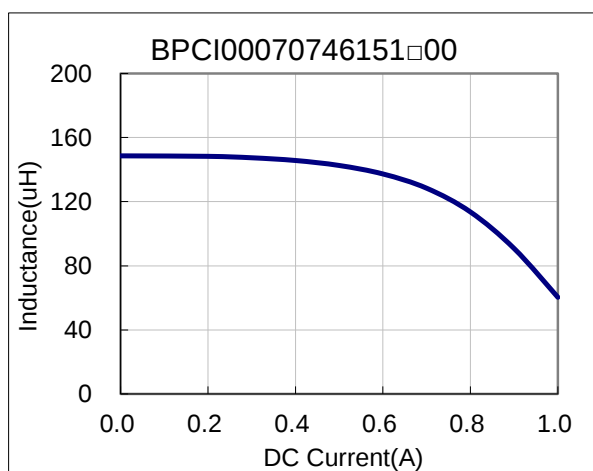
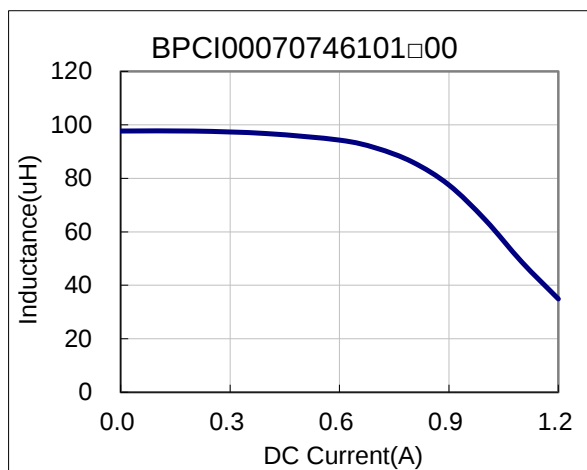
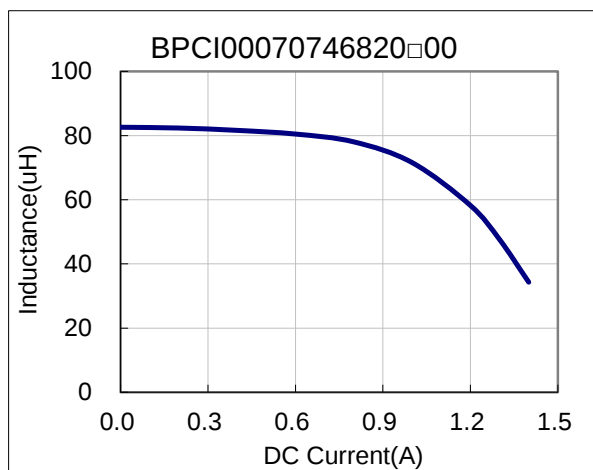
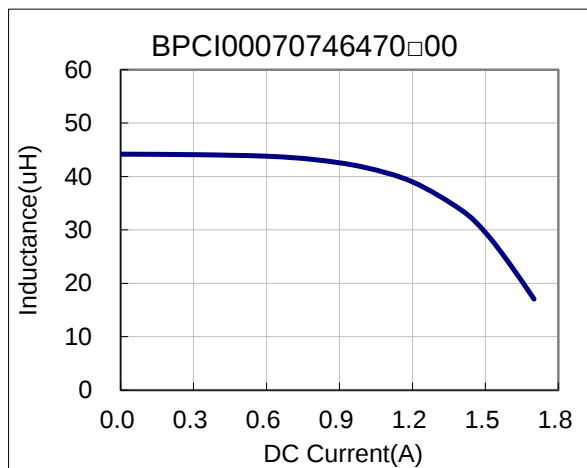
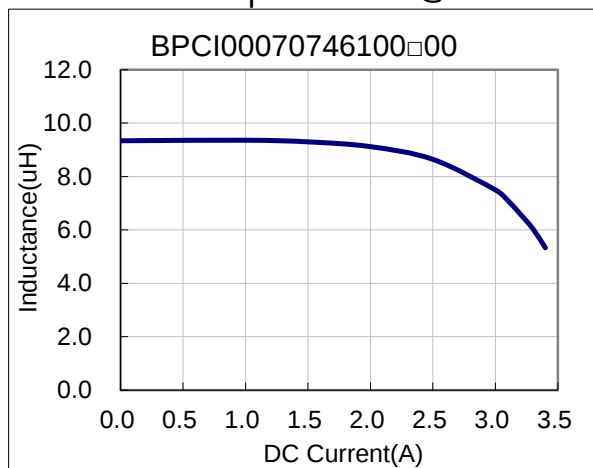


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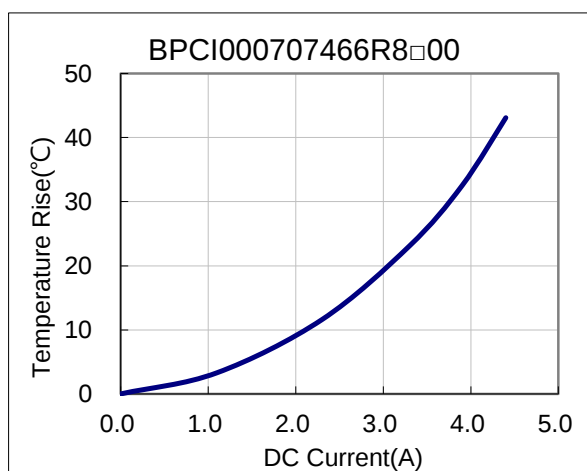
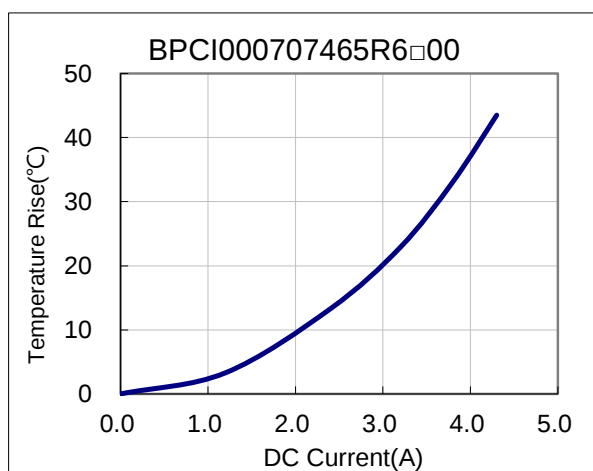
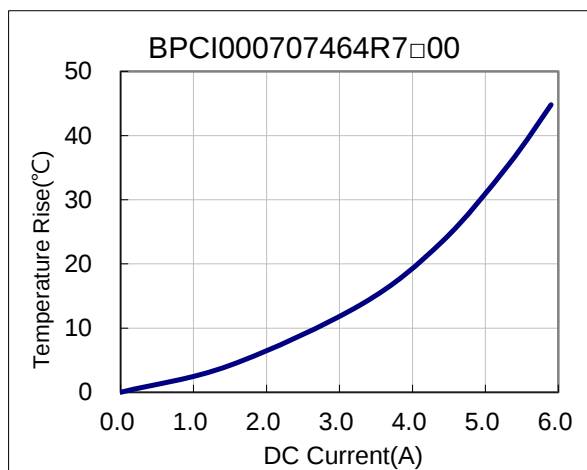
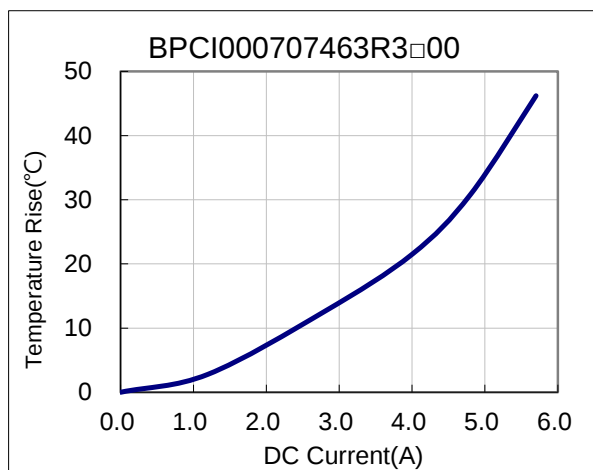
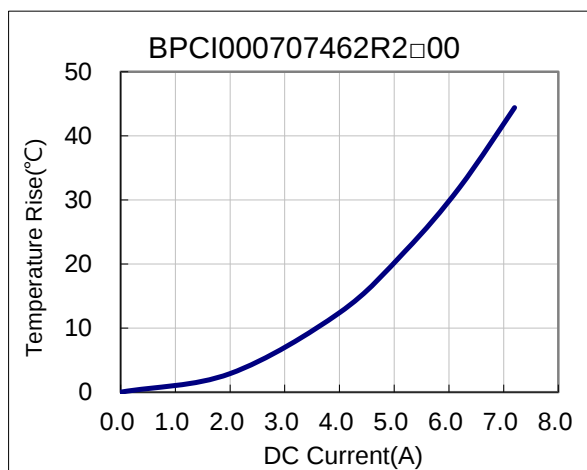
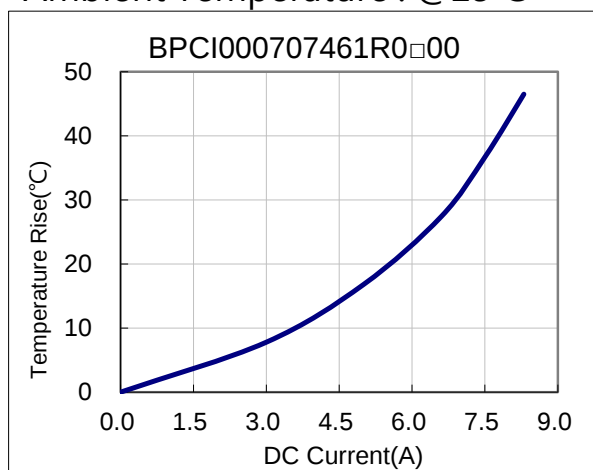


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