

Power Inductor



BPCA 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. Ultra High Current

Applications

1. Thin-screen TVs
2. LCDs
3. AV equipment
4. STBs
5. LED lights

Product Information

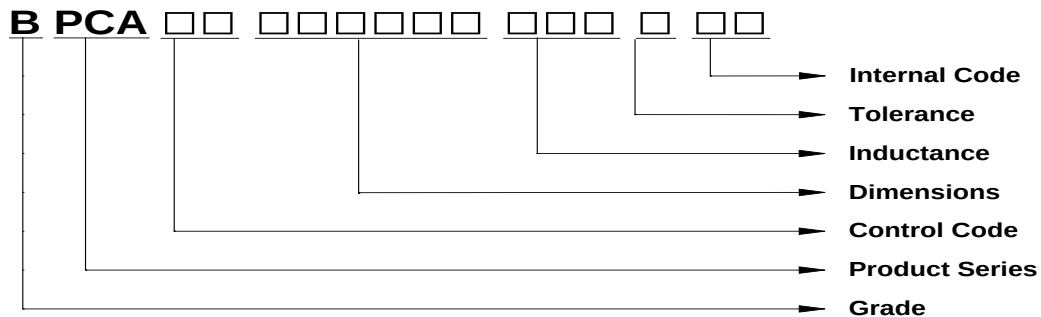
Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPCA	6.0	6.3	4.5	1 ~ 470
	7.0	7.4	4.5	
	10.3	10.0	6.5	
	12.5	12.3	8.0	



BPCA00101065 Series Specification

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

2 Part Numbering:



3 Rating:

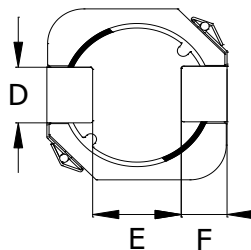
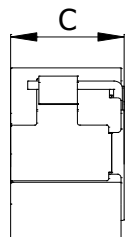
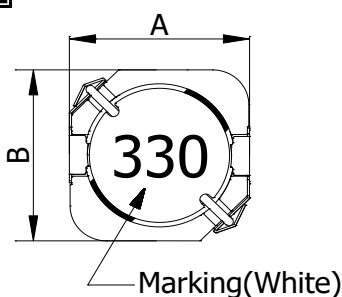
Operating Temperature: - 40°C ~ 125°C(Including self - temperature rise)

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:	10.3 ± 0.3	mm
B:	10.0 ± 0.3	mm
C:	6.5 Max.	mm
D:	3.5 Typ.	mm
E:	4.5 Typ.	mm
F:	2.65 Typ.	mm

Marking XXX
Marking color:White

Net Weight (grms)

SIZE CODE	Net Weight (grms)
101065	2.40(Typ.)

BPCA00101065 Series Specification

6 Electrical Characteristics:

Part No.	Inductance L(μH)	Percent Tolerance	Test Frequency	Resistance RDC(Ω)	Rated DC Current Isat (A)	Irms (A)	Marking
BPCA001010652R2□A0	2.2	T	100kHz/0.25V	7.1 m ± 30%	11.00	8.50	2R2
BPCA001010653R3□A0	3.3	T	100kHz/0.25V	8.5 m ± 30%	8.40	8.10	3R3
BPCA001010654R7□A0	4.7	T	100kHz/0.25V	11 m ± 30%	8.00	7.00	4R7
BPCA001010656R8□A0	6.8	T	100kHz/0.25V	13 m ± 30%	6.50	6.60	6R8
BPCA00101065100□A0	10	M,T	100kHz/0.25V	17 m ± 20%	5.00	5.80	100
BPCA00101065150□A0	15	M,T	100kHz/0.25V	30 m ± 20%	4.40	4.10	150
BPCA00101065220□A0	22	M,T	100kHz/0.25V	43 m ± 20%	3.60	3.30	220
BPCA00101065330□A0	33	M,T	100kHz/0.25V	61 m ± 20%	3.10	2.90	330
BPCA00101065470□A0	47	M,T	100kHz/0.25V	74m ± 20%	2.35	2.60	470
BPCA00101065680□A0	68	M,T	100kHz/0.25V	91m ± 20%	2.05	2.40	680
BPCA00101065101□A0	100	M,T	100kHz/0.25V	0.15 ± 20%	1.65	1.90	101
BPCA00101065151□A0	150	M,T	100kHz/0.25V	0.24 ± 20%	1.35	1.50	151
BPCA00101065221□A0	220	M,T	100kHz/0.25V	0.35 ± 20%	1.10	1.20	221
BPCA00101065331□A0	330	M,T	100kHz/0.25V	0.445 ± 20%	0.90	1.10	331
BPCA00101065471□A0	470	M,T	100kHz/0.25V	0.6 ± 20%	0.75	0.90	471
BPCA00101065102□A0	1000	M	100kHz/0.25V	1.55 ± 20%	0.56	0.65	102

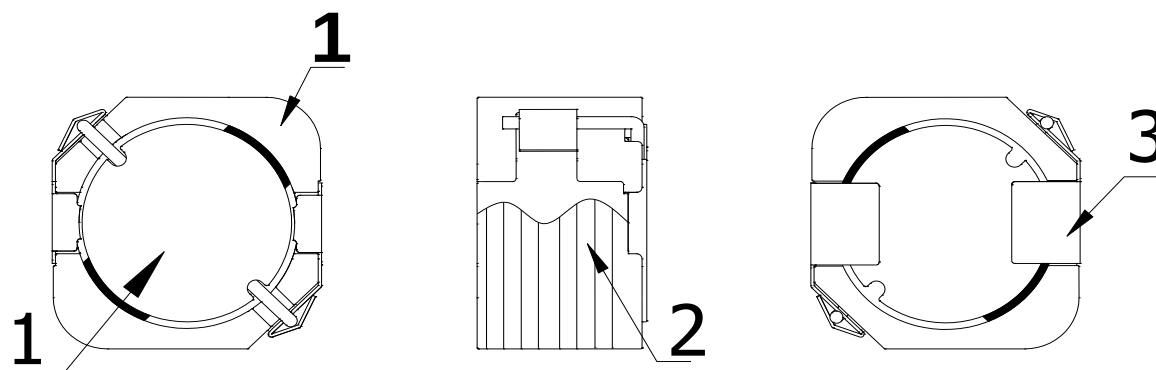
NOTE: tolerance M=±20% T=±30%

1. Isat : Based on inductance change ($\Delta L/L_0$: drop 30%Typ.) @ ambient Temperature : 25°C

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

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6.1 Construction:



6.2 Material List:

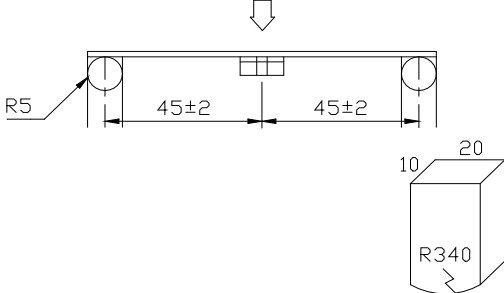
NO.	ITEM	DESCRIPTION & TYPE
1	CORE	FERRITE
2	Wire	Magnet Wire
3	CLIP	COPPER FOIL

BPCA00101065 Series Specification

ELECTRICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Temperature characteristics	$\Delta L/L20^{\circ}\text{C} \leq \pm 10\%$ $0 \sim 2000 \text{ ppm}/^{\circ}\text{C}$	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 $\Delta L/L20^{\circ}\text{C} \leq \pm 10\%$.

MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Substrate bending	$\Delta L/L_0 \leq \pm 5\%$ 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

BPCA00101065 Series Specification

MECHANICAL

TEST ITEM	SPECIFICATION	
Vibration	$\Delta L/L_0 \leq \pm 5\%$ 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°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 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.

BPCA00101065 Series Specification

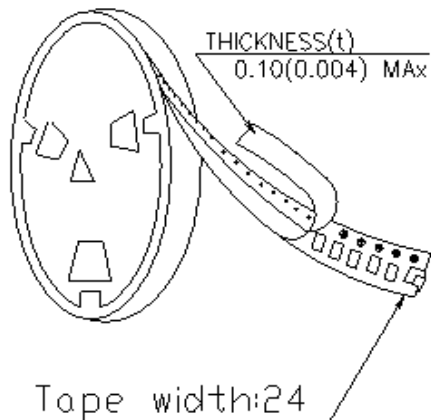
ENVIRONMENT CHARACTERISTICS

TEST ITEM	SPECIFICATION																
High temperature storage	$\Delta L/L_0 \leq \pm 5\%$ 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	$\Delta L/L_0 \leq \pm 5\%$ 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	$\Delta L/L_0 \leq \pm 5\%$ 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	$\Delta L/L_0 \leq \pm 5\%$ 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.																	

BPCA00101065 Series Specification

7 Packaging:

7.1 Packaging -Cover Tape

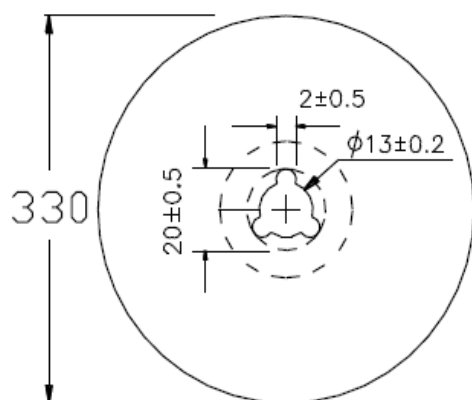


7.2 Packaging Quantity

TYPE	PCS/REEL
BPCA00101065	500

7.3 Reel Dimensions

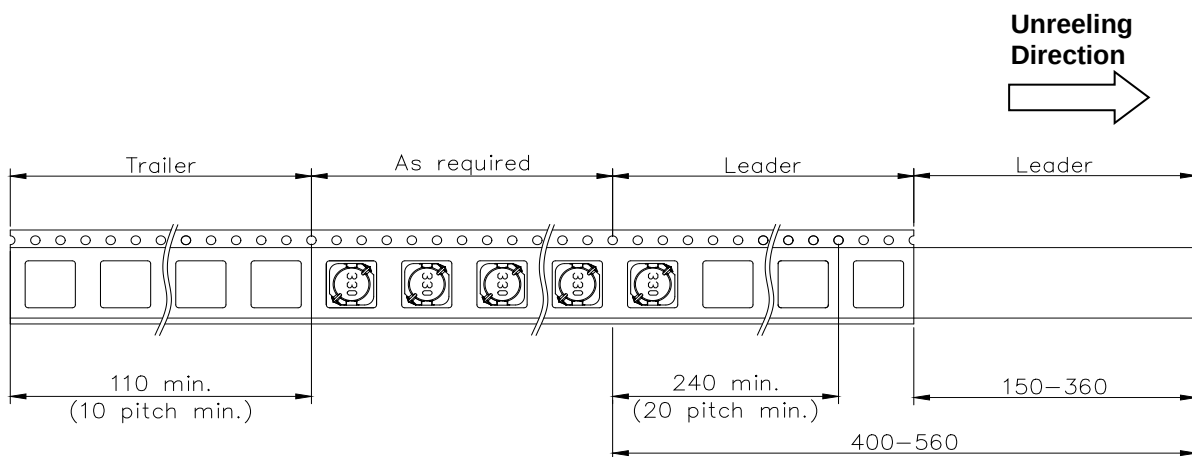
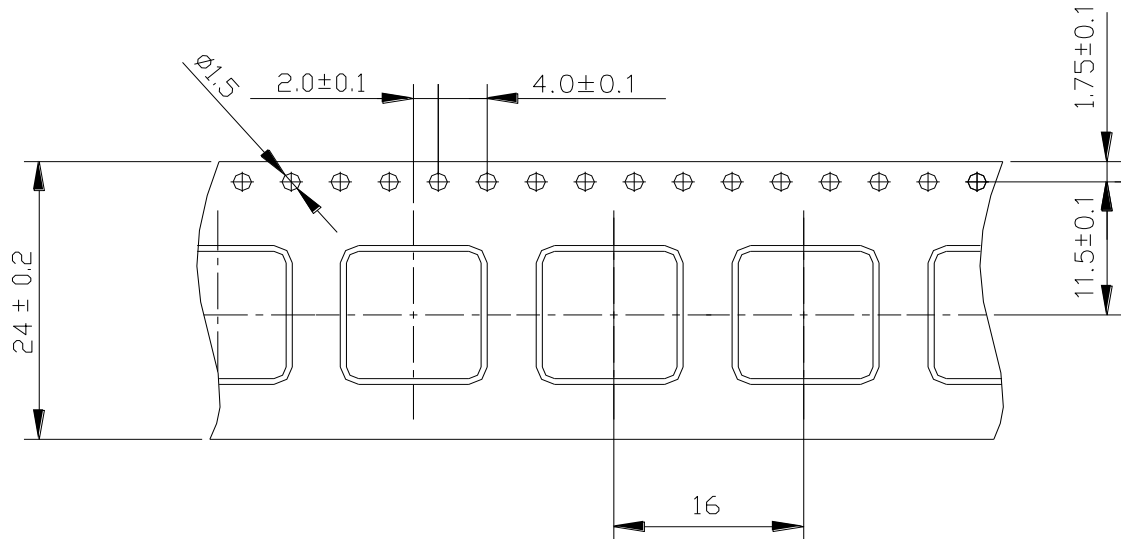
Unit : mm



BPCA00101065 Series Specification

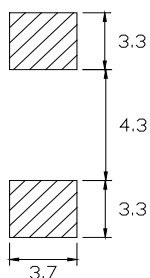
7 Packaging:

7.4 Tape Dimensions in mm



8 Recommended Land Pattern:

(STANDARD PATTERN) Unit : mm



BPCA00101065 Series Specification

9 Note:

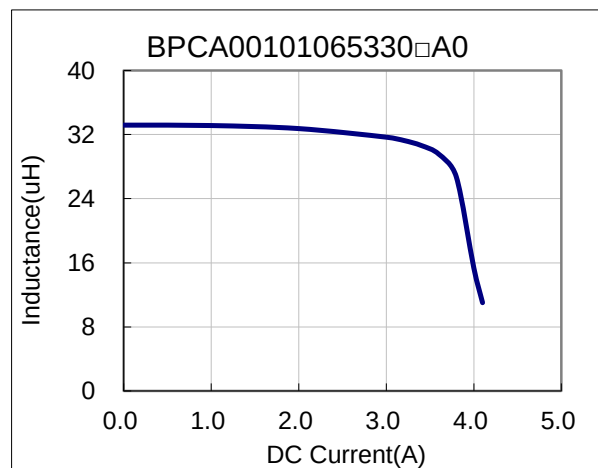
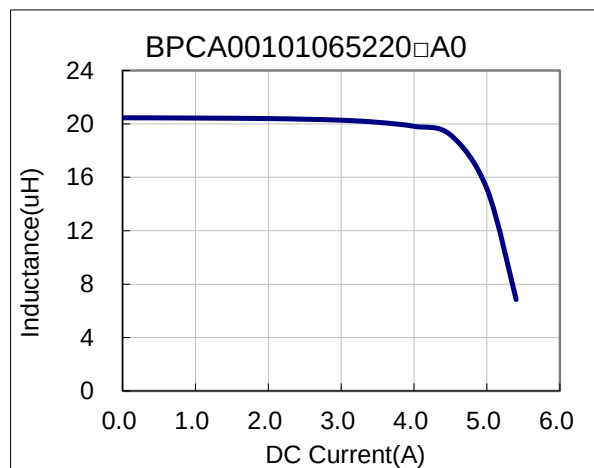
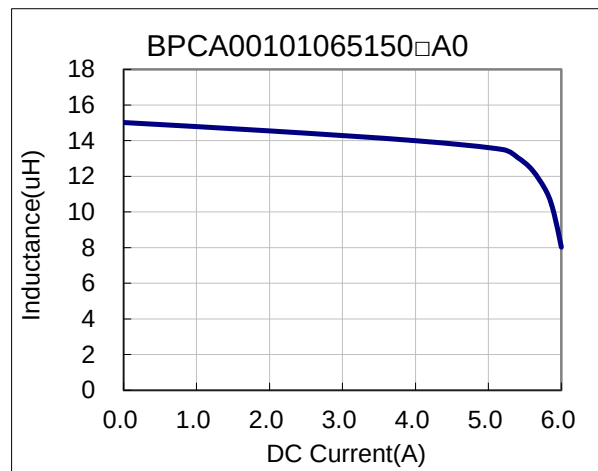
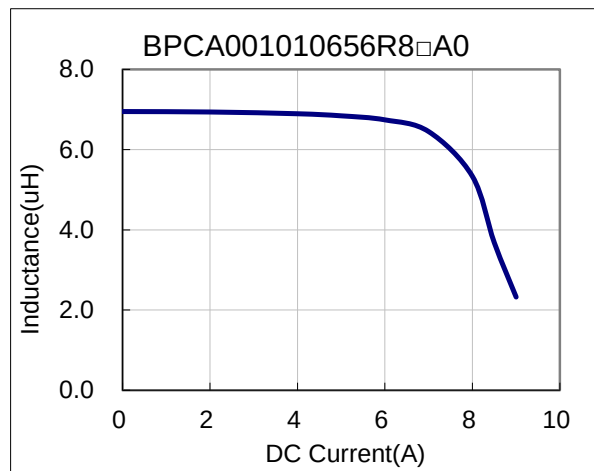
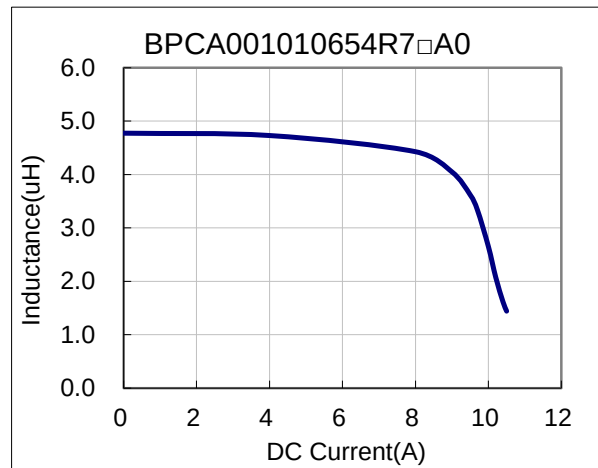
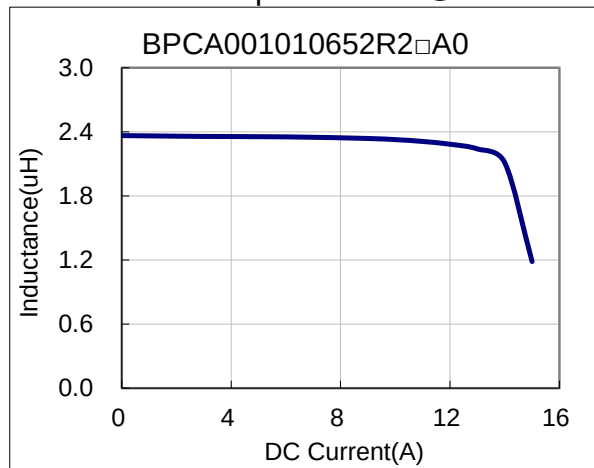
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock or drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose,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

BPCA00101065 Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/0.25V

Ambient Temperature : @25°C

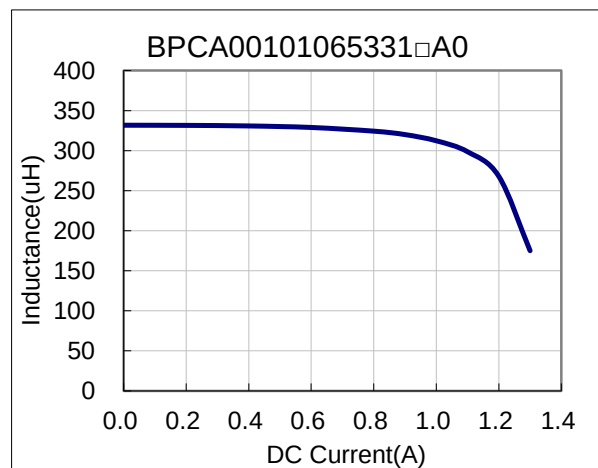
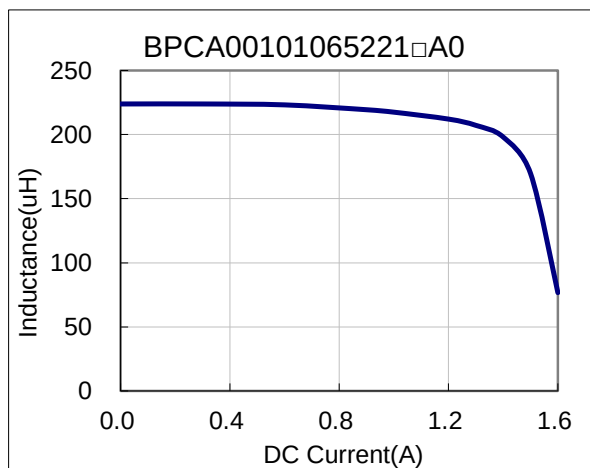
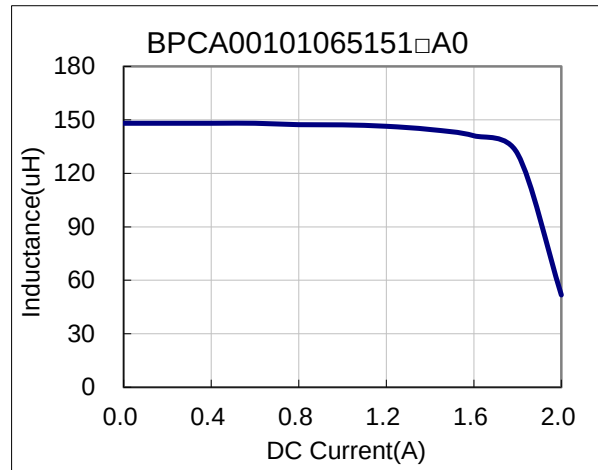
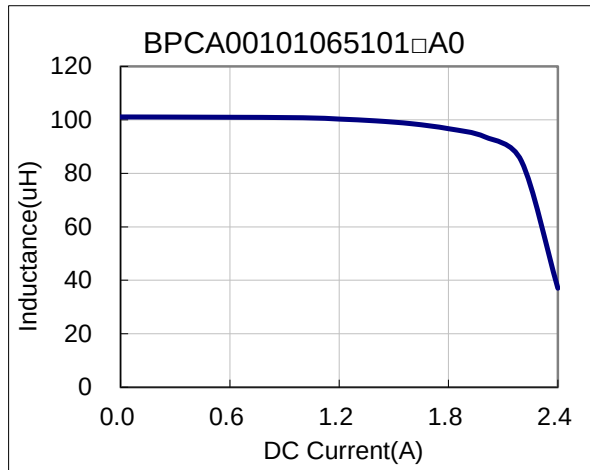
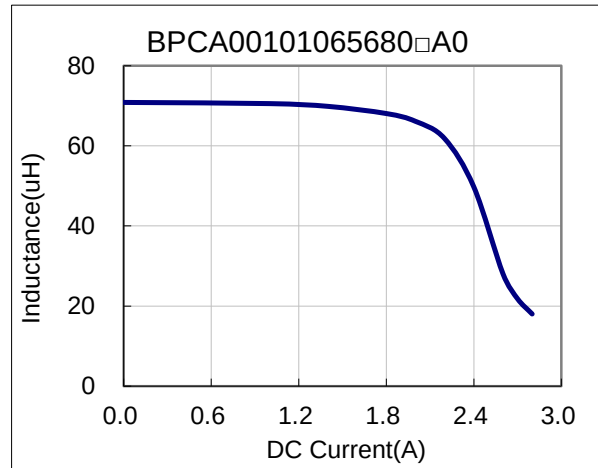
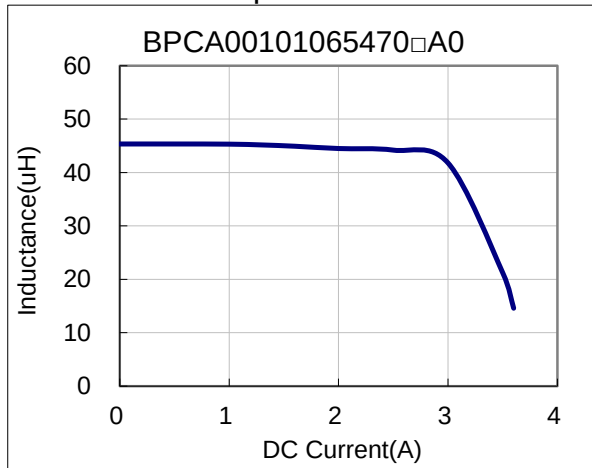


BPCA00101065 Series Specification

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INDUCTANCE vs. DC CURRENT@100KHz/0.25V

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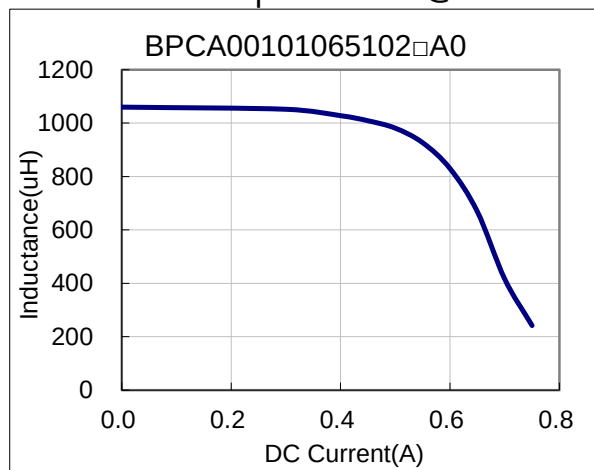


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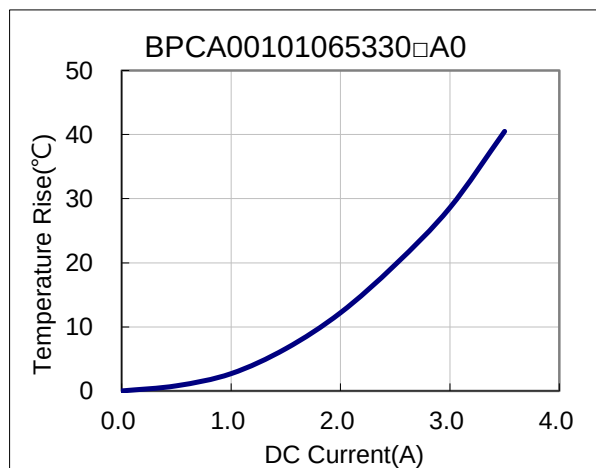
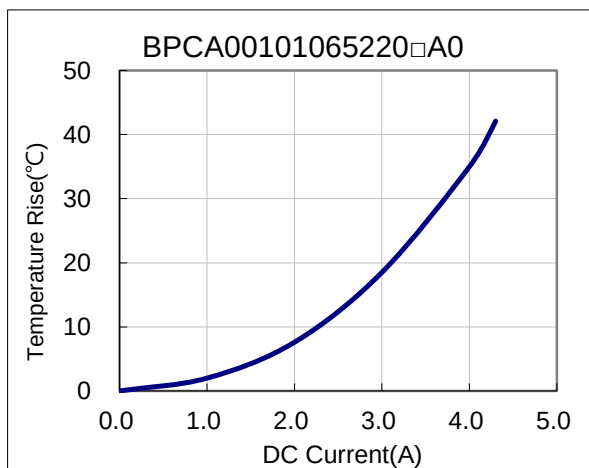
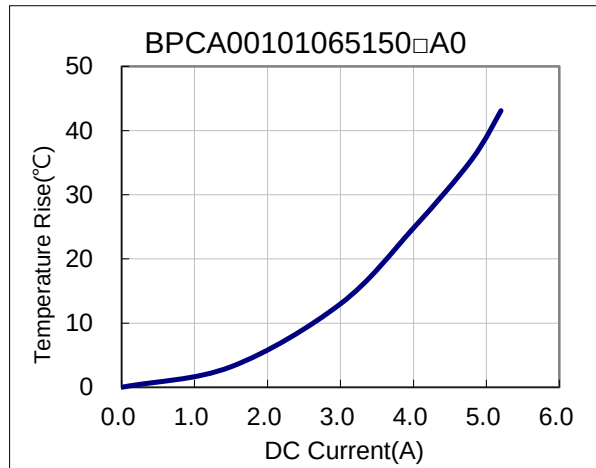
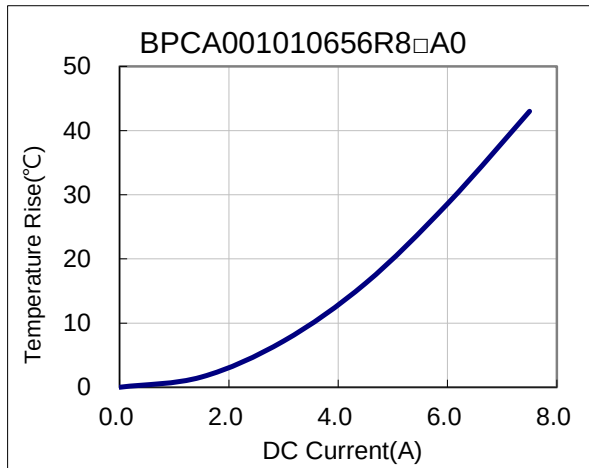
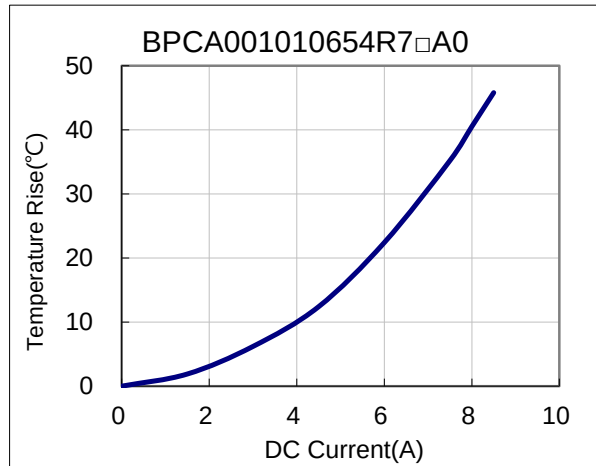
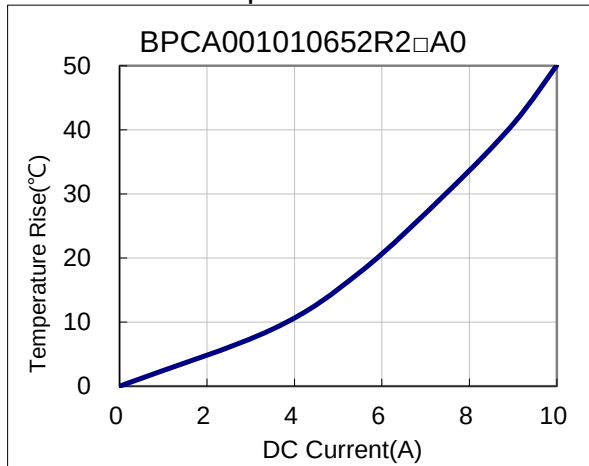


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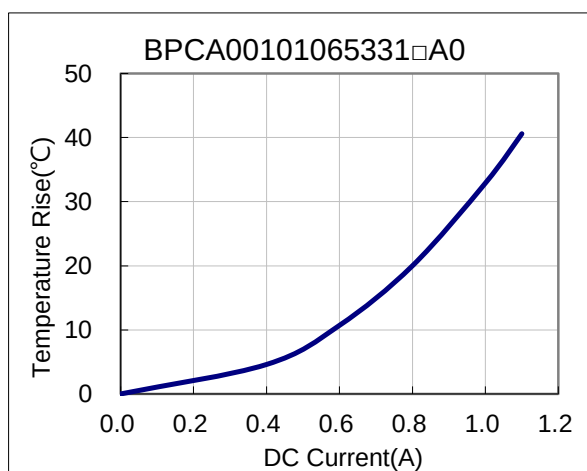
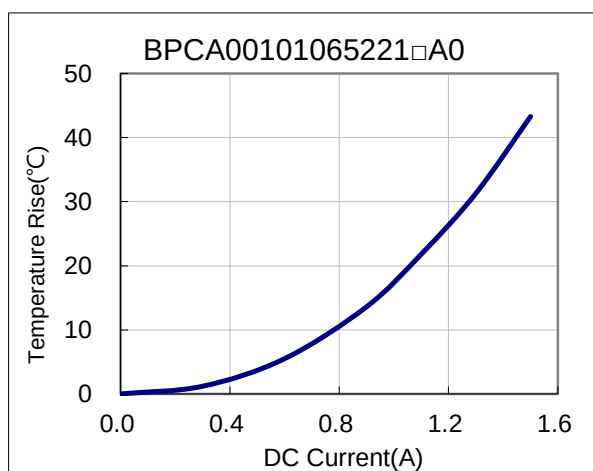
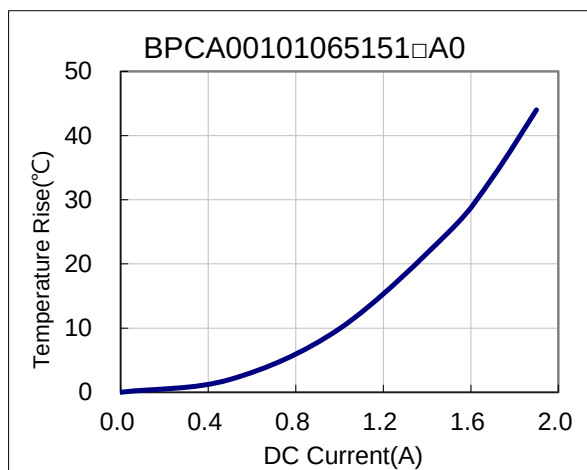
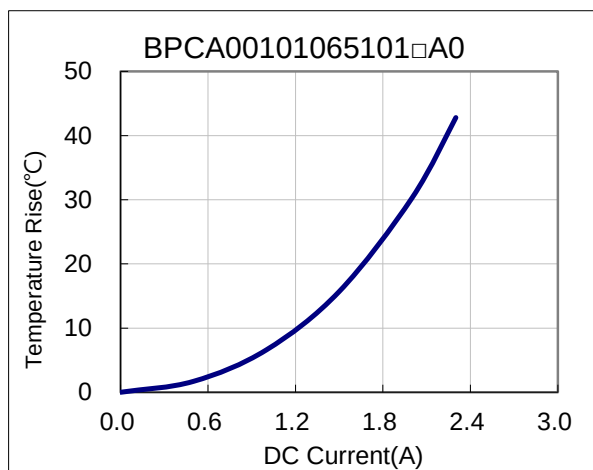
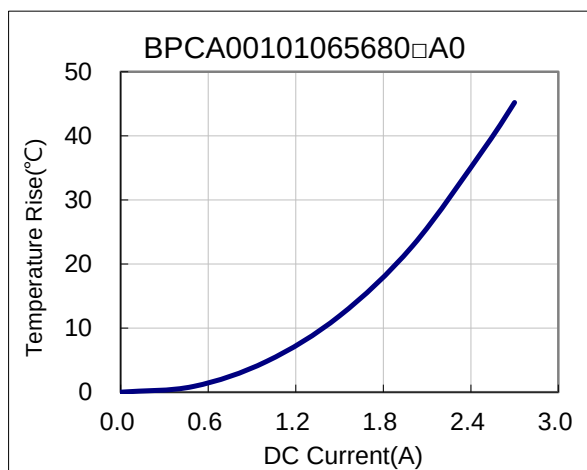
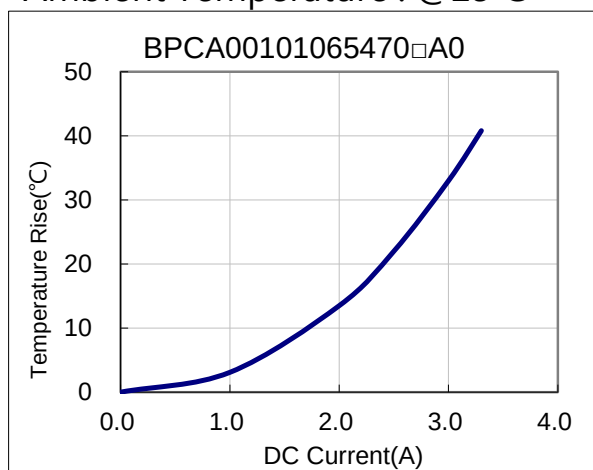


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INDUCTANCE vs. DC CURRENT@100KHz/0.25V

Ambient Temperature : @25°C



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