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

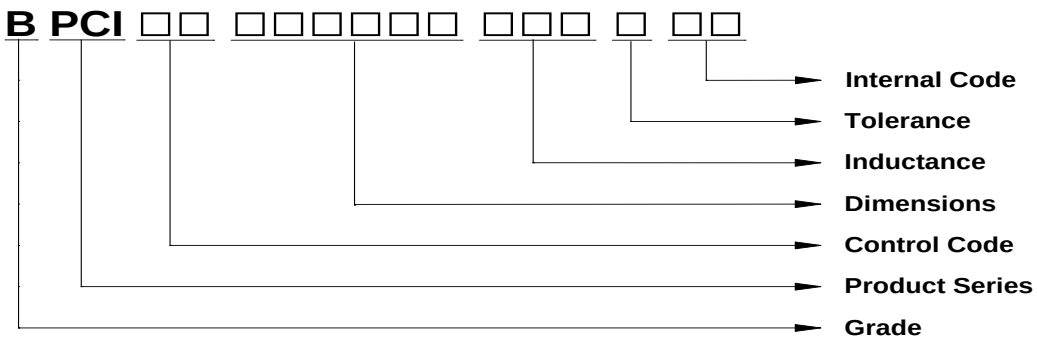
Product Information

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:

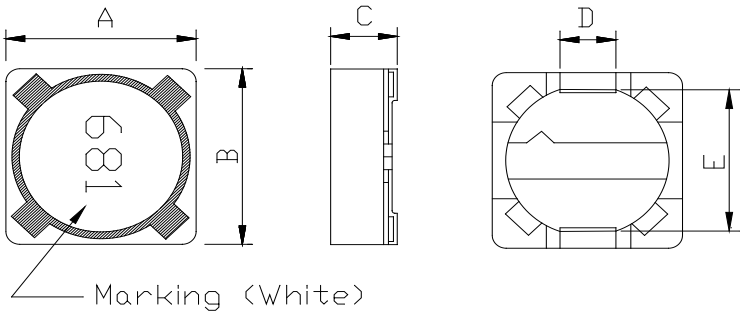
Operating Temperature: －40℃ ~ 125℃(Including self - temperature rise)
Storage Temperature: (on tape & reel): -20°C to +40°C; 75% RH max.

4 Standard Testing Condition:

	Unless otherwise specified	In case of doubt
Temperature	Ordinary Temperature(15 to 35℃)	20 to 30℃
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: 4.60 Max. mm
D: 2.00 Typ. mm
E: 5.00 Typ. mm



Marking XXX
Marking color:White

Net Weight (grms)

SIZE CODE	Net Weight (grms)
070746	0.70(Typ.)

BPCI00070746 Series Specification

6 Electrical Characteristics:

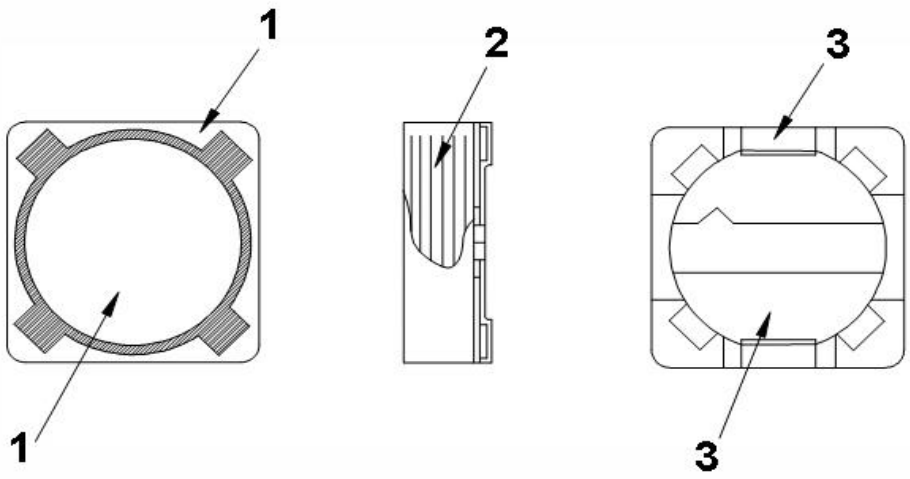
Part No.	Inductance L(μH)	Test Frequency	Resistance RDC(Ω) Typ.	Rated DC Current Isat(A)	Rated DC Current Irms(A)	Tolerance	Marking
BPCI000707461R5☐A0	1.5	100kHz/0.25V	8.9m	7.00	6.60	T	1R5
BPCI000707461R8☐A0	1.8	100kHz/0.25V	10.5m	6.70	5.90	T	1R8
BPCI000707462R2☐A0	2.2	100kHz/0.25V	12.6m	6.50	5.00	T	2R2
BPCI000707463R3☐A0	3.3	100kHz/0.25V	16.9m	5.90	4.80	T	3R3
BPCI000707464R7☐A0	4.7	100kHz/0.25V	23.5m	4.50	4.20	T	4R7
BPCI000707466R8☐A0	6.8	100kHz/0.25V	28.2m	4.30	4.00	M,T	6R8
BPCI000707468R2☐A0	8.2	100kHz/0.25V	44.1m	3.40	2.53	M,T	8R2
BPCI00070746100☐A0	10	100kHz/0.25V	48.9m	3.20	3.00	M,T	100
BPCI00070746150☐A0	15	100kHz/0.25V	63.7m	2.48	2.11	M,T	150
BPCI00070746220☐A0	22	100kHz/0.25V	92.5m	2.13	1.75	M,T	220
BPCI00070746270☐A0	27	100kHz/0.25V	0.115	1.95	1.59	M,T	270
BPCI00070746330☐A0	33	100kHz/0.25V	0.143	1.73	1.41	M	330
BPCI00070746470☐A0	47	100kHz/0.25V	0.216	1.41	1.15	M	470
BPCI00070746560☐A0	56	100kHz/0.25V	0.260	1.30	1.14	M,T	560
BPCI00070746680☐A0	68	100kHz/0.25V	0.291	1.20	1.12	M	680
BPCI00070746820☐A0	82	100kHz/0.25V	0.260	0.90	0.84	M	820
BPCI00070746101☐A0	100	100kHz/0.25V	0.383	0.99	0.86	M	101
BPCI00070746151☐A0	150	100kHz/0.25V	0.580	0.83	0.80	M	151
BPCI00070746181☐A0	180	100kHz/0.25V	0.770	0.80	0.73	M,T	181
BPCI00070746221☐A0	220	100kHz/0.25V	0.920	0.78	0.65	M,T	221
BPCI00070746331☐A0	330	100kHz/0.25V	1.410	0.54	0.45	M	331
BPCI00070746471☐A0	470	100kHz/0.25V	2.440	0.49	0.40	M	471
BPCI00070746102☐A0	1000	100kHz/0.25V	3.890	0.31	0.27	M	102

NOTE: tolerance M=±20% T=±30%

1. Isat : Based on inductance change (△L/Lo：drop 30% Max.) @ ambient Temperature : 25°C

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

6 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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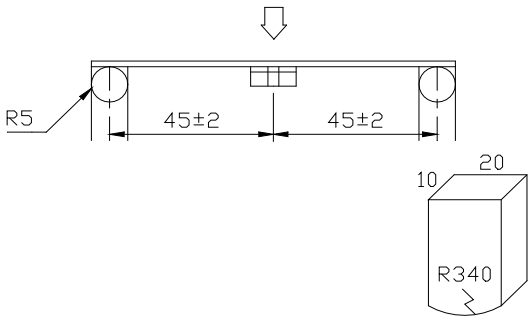
ELECTRICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Temperature characteristics	△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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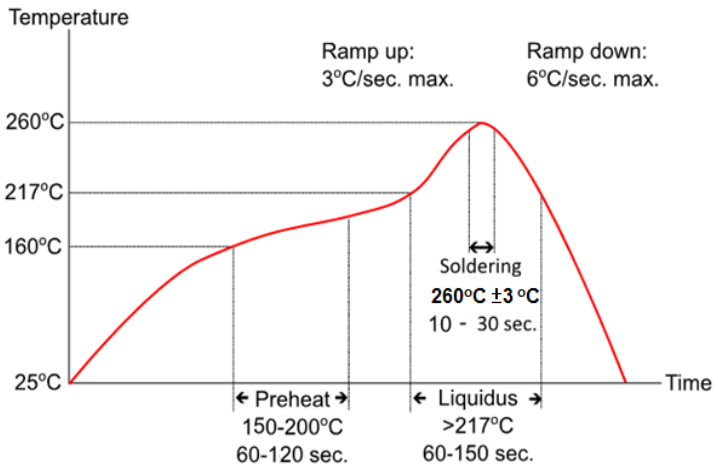
MECHANICAL

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±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≦±10%

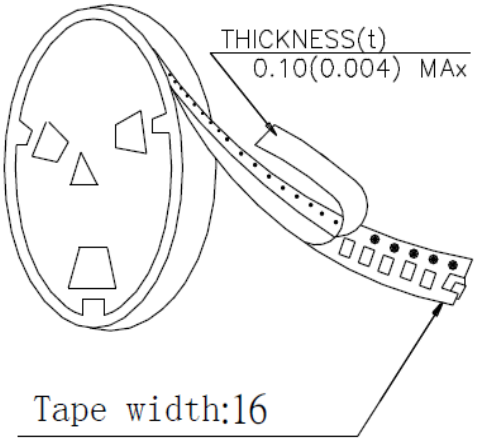
There shall be no other dama-ge of problems</td><td>The sample shall be subject to 5 continuos cycles, such as shown in the table 2 below and then it shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made.

table 2
<table>
<tr><th></th><th>Temperature</th><th>Duration</th></tr>
<tr><td>1</td><td>－40±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≦±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>

7 Packaging:

7.1 Packaging -Cover Tape

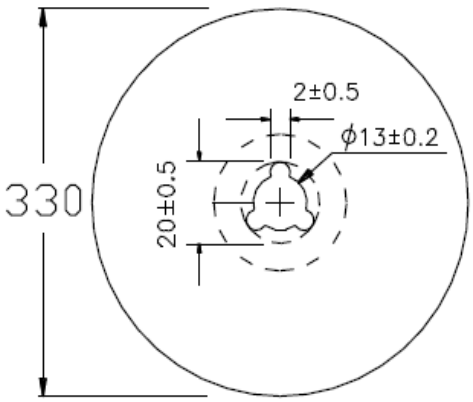


7.2 Packaging Quantity

TYPE	PCS/REEL
BPCI00070746	1000

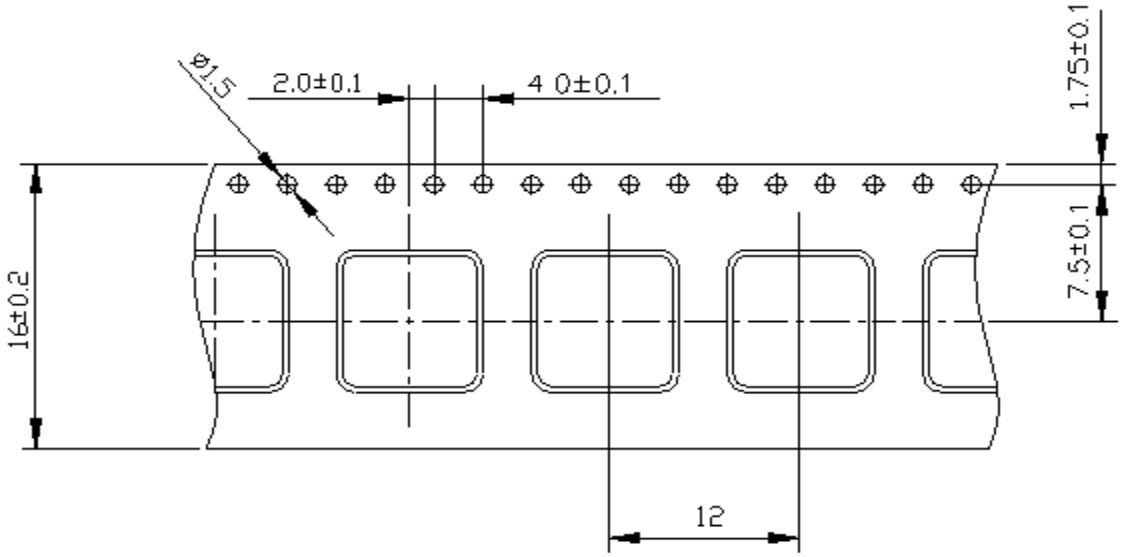
7.3 Reel Dimensions

Unit : mm

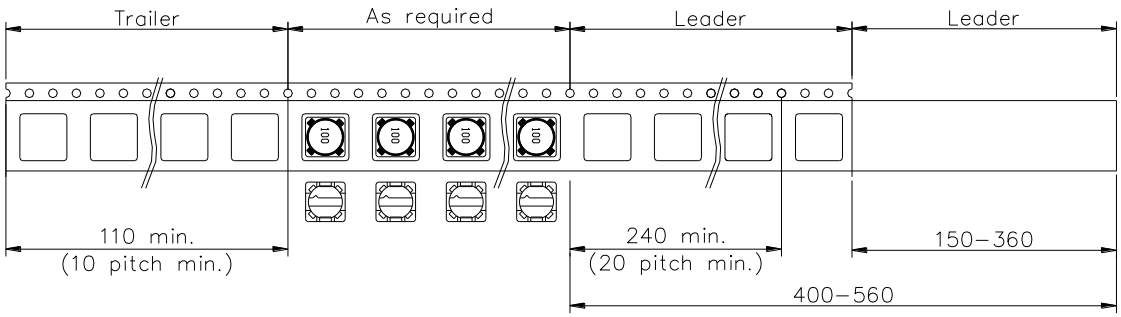


7 Packaging:

7.4 Tape Dimensions in mm

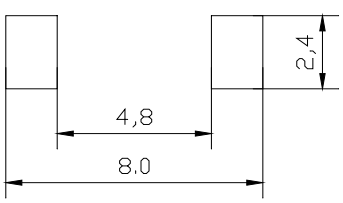


Unreeling Direction



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.

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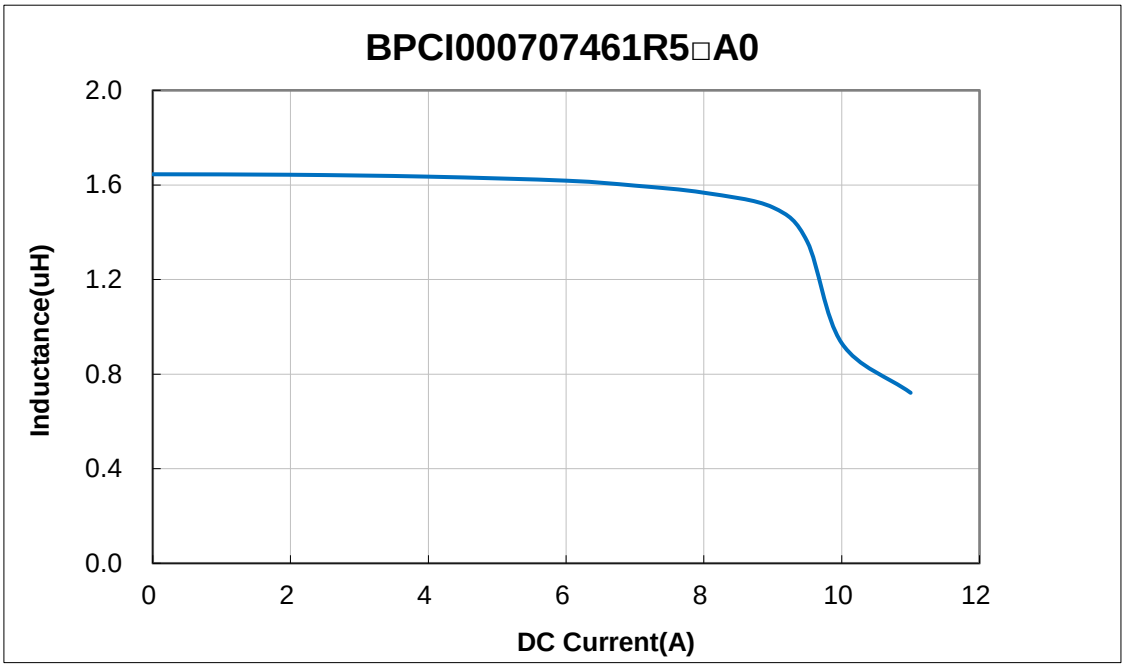
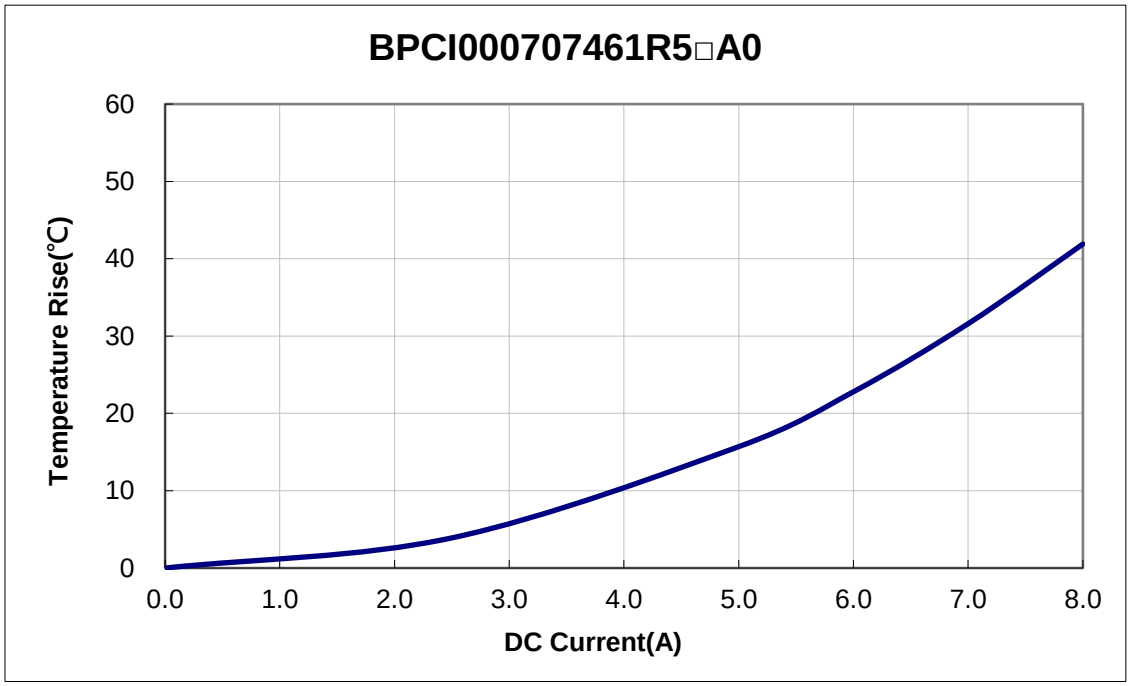
TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/0.25V



TEMPERATURE vs. DC CURRENT



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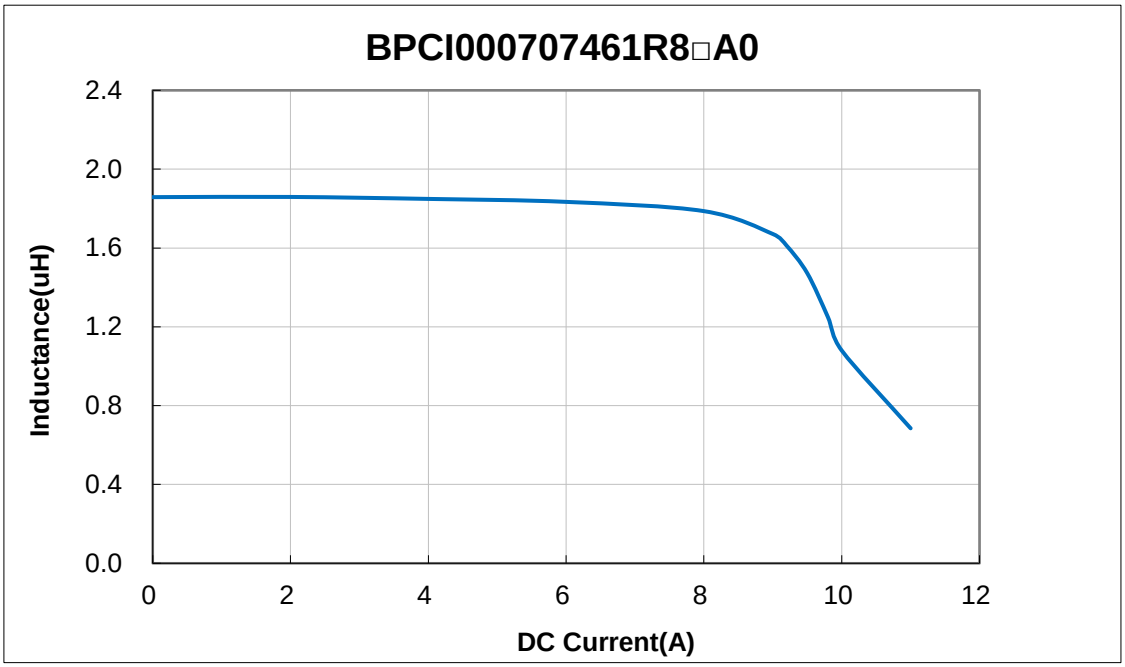
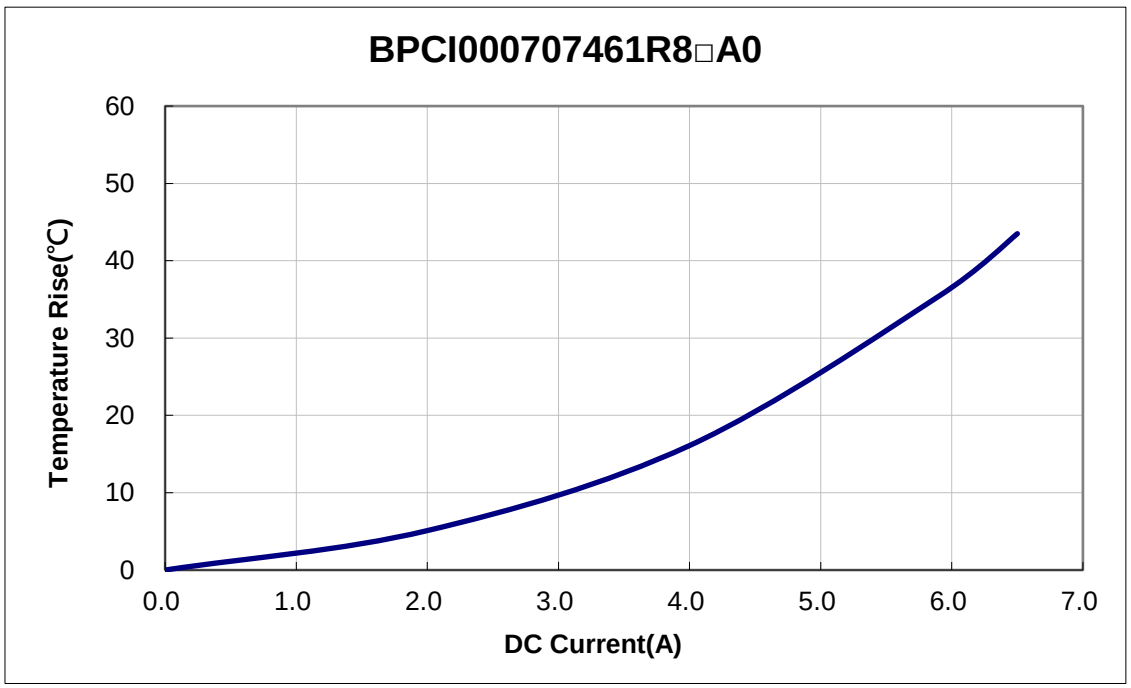


TEMPERATURE vs. DC CURRENT



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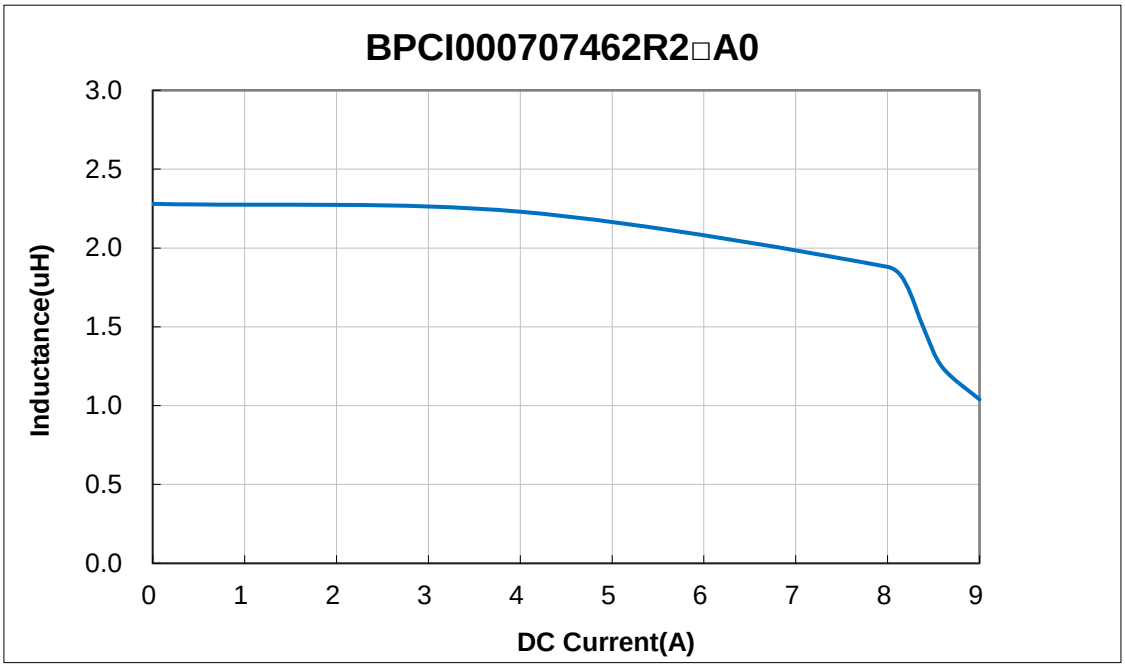

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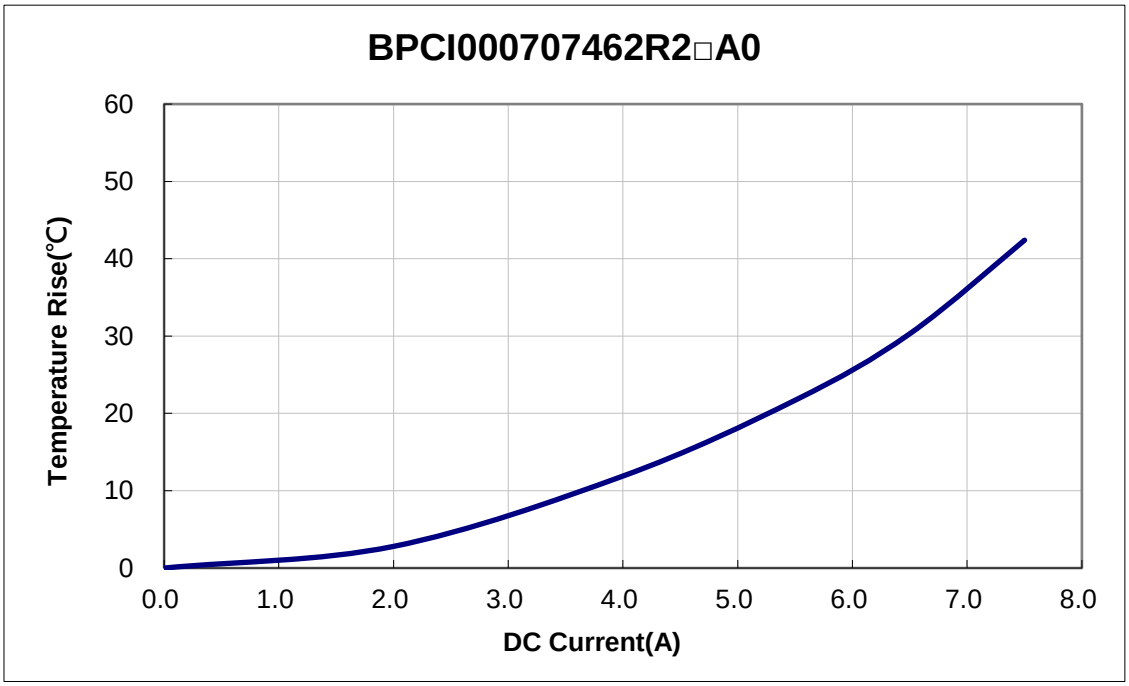

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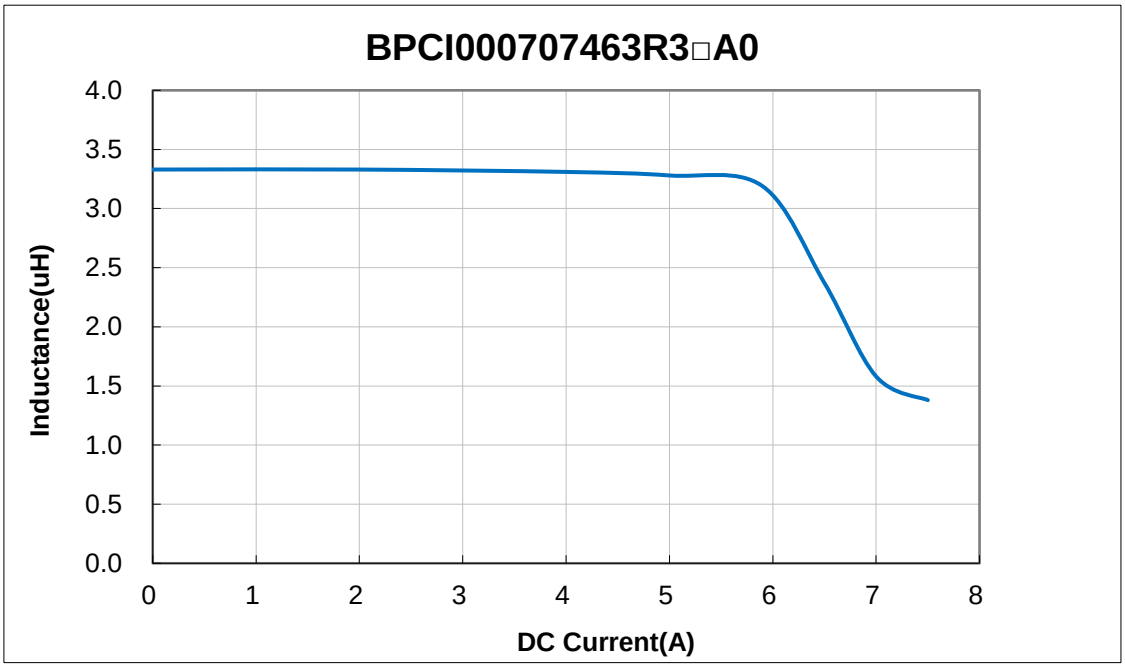
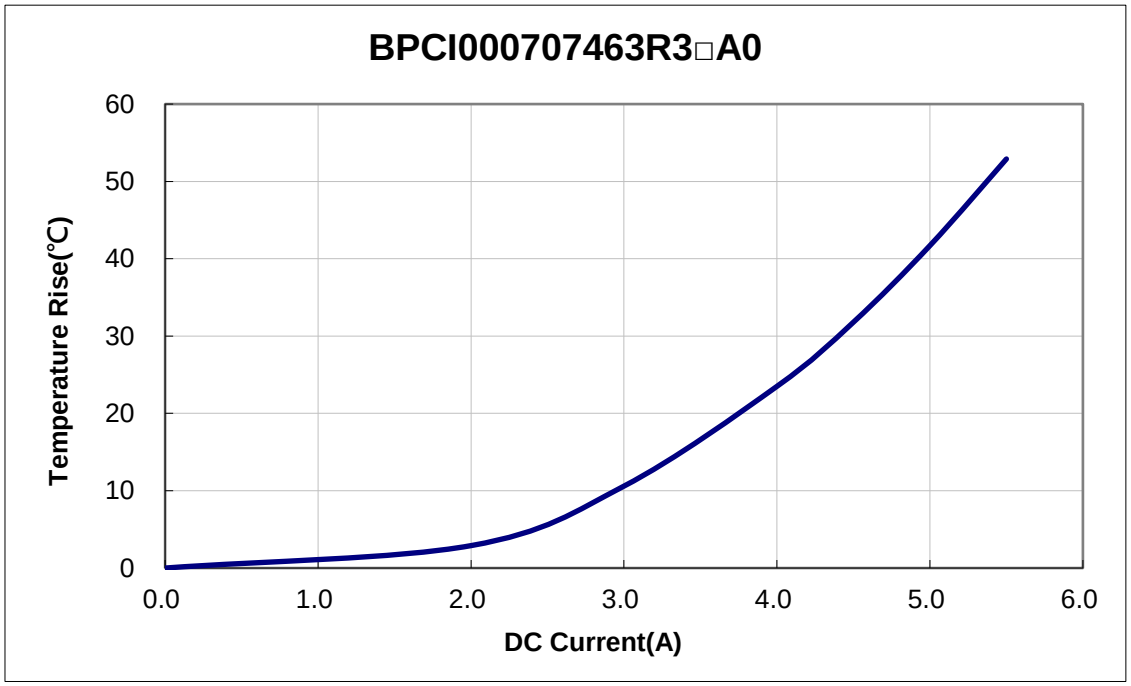


TEMPERATURE vs. DC CURRENT



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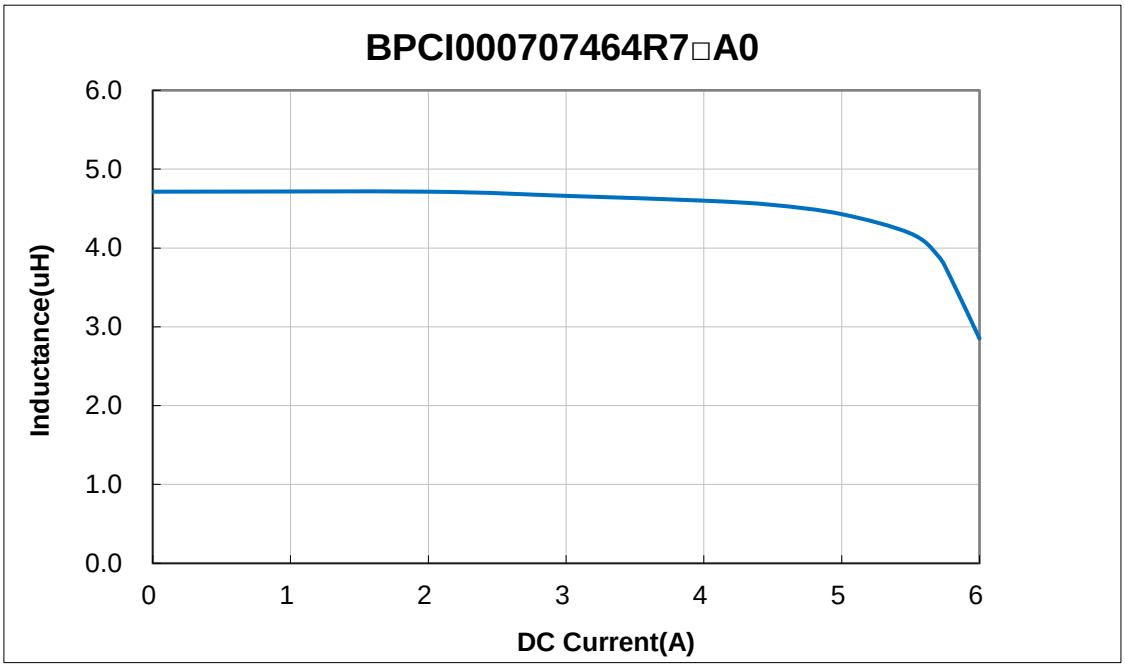
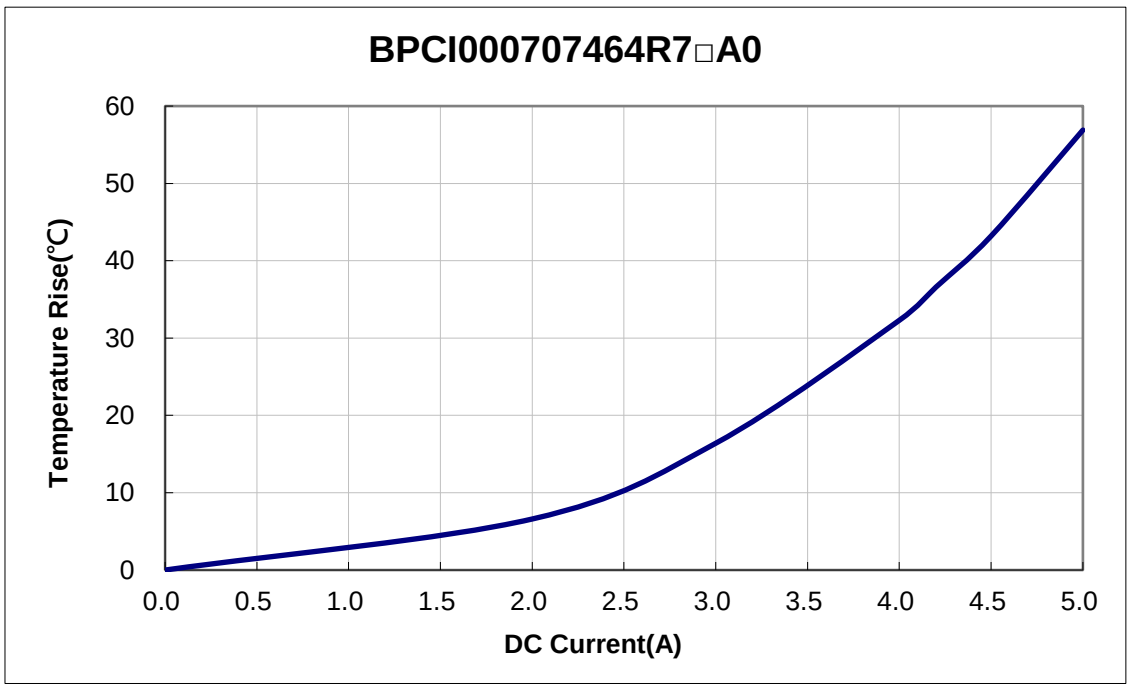


TEMPERATURE vs. DC CURRENT



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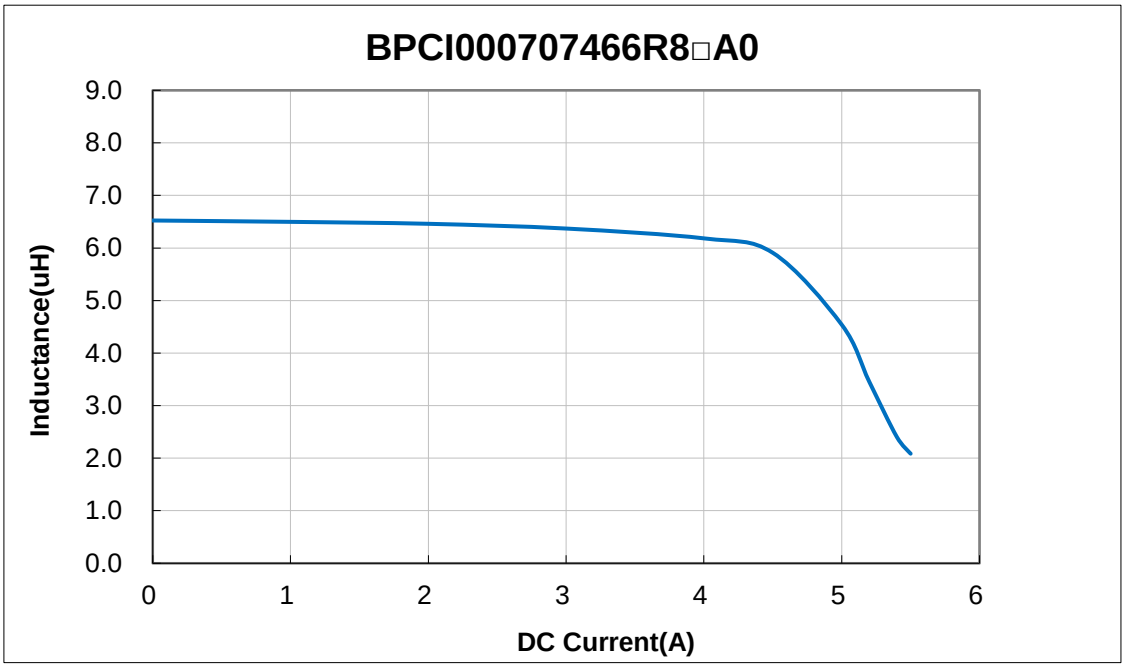

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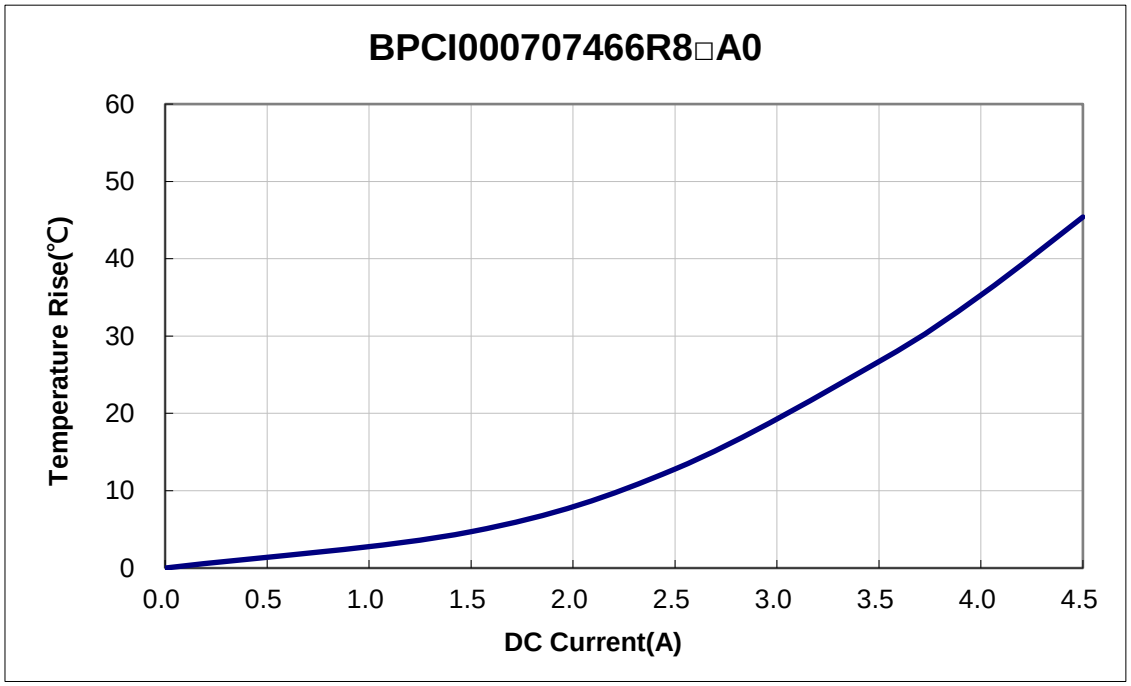

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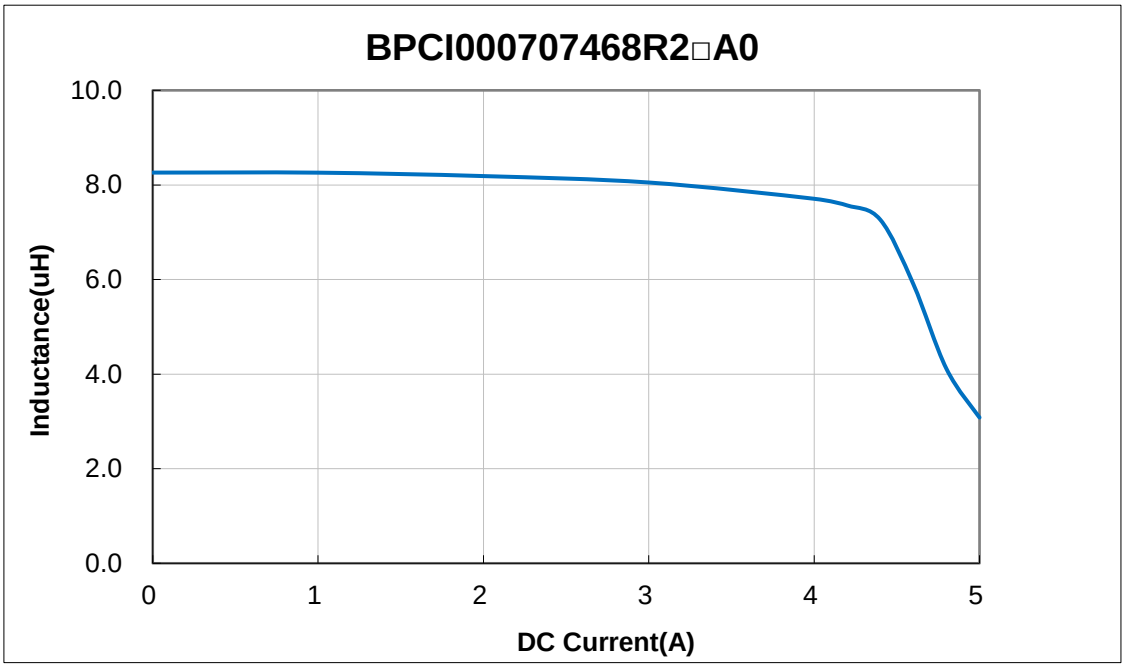

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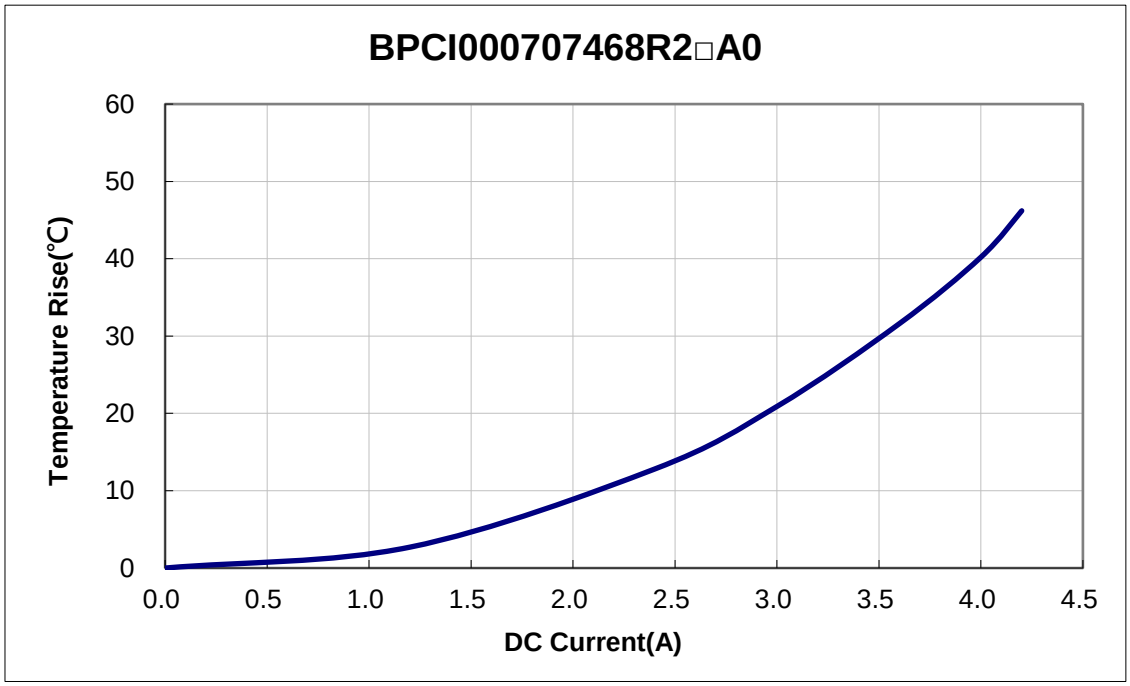

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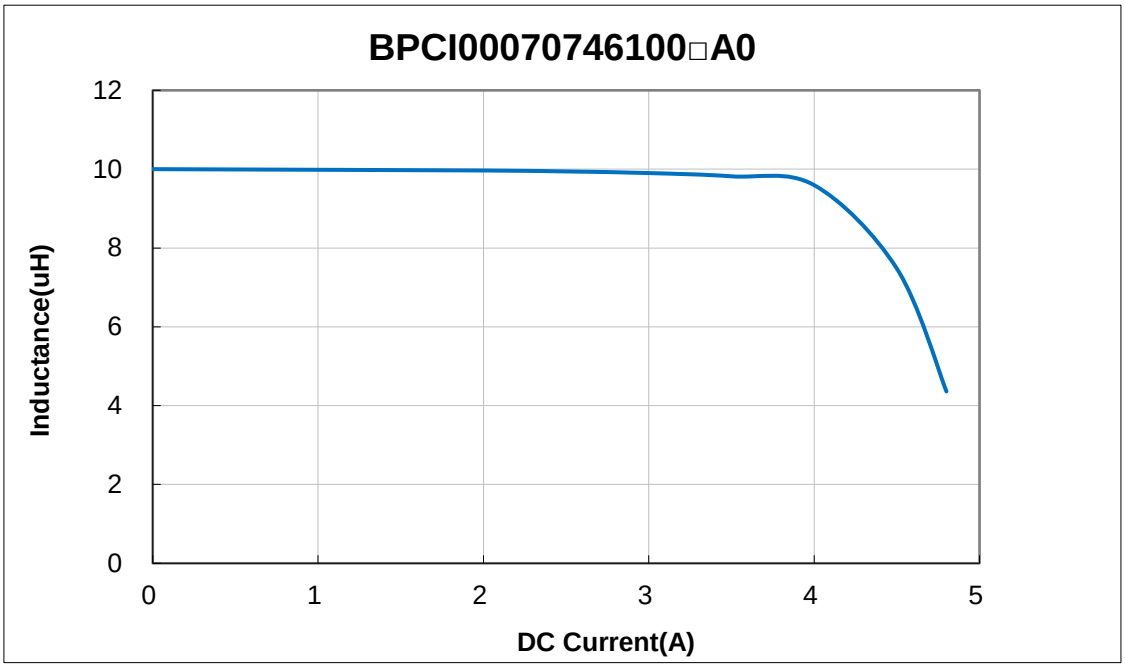

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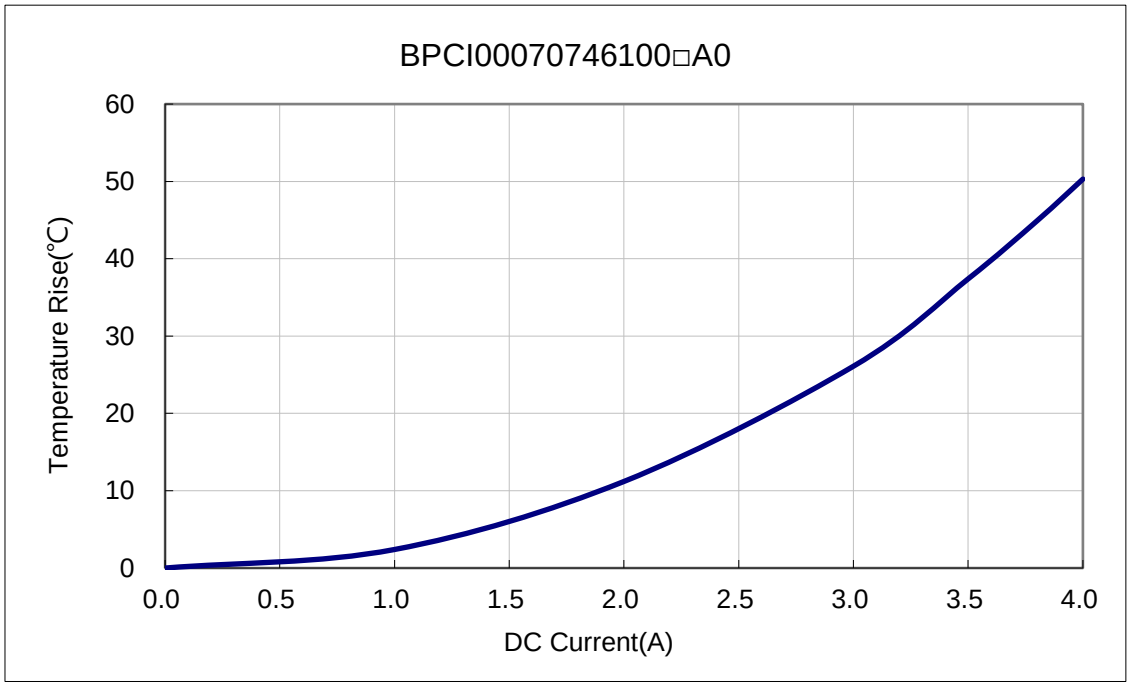

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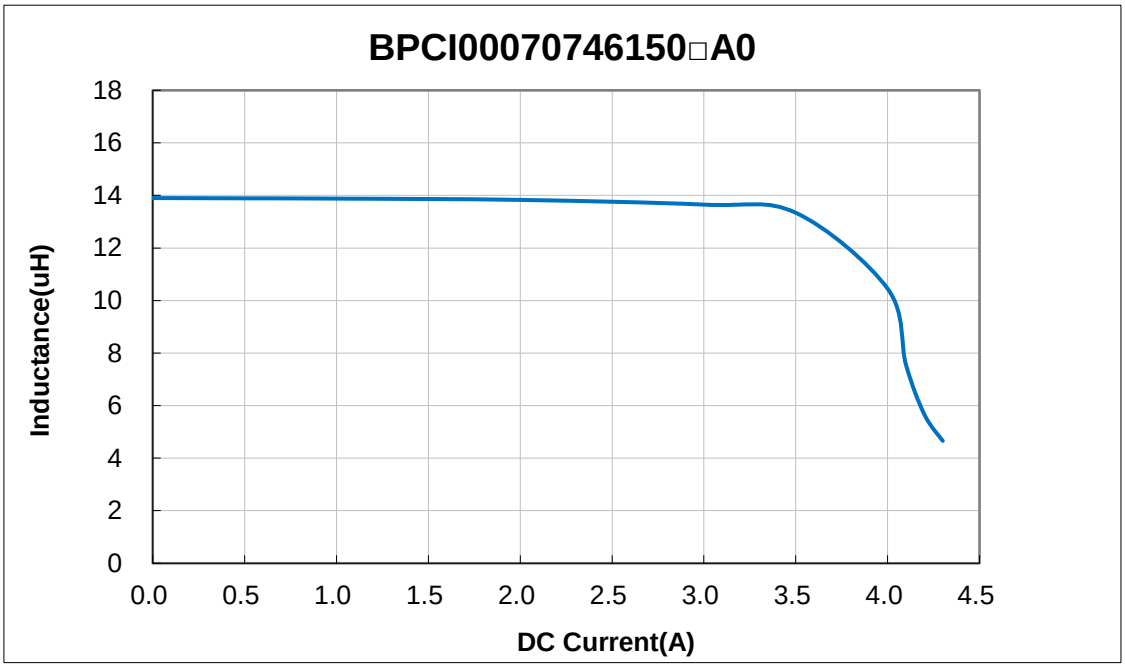

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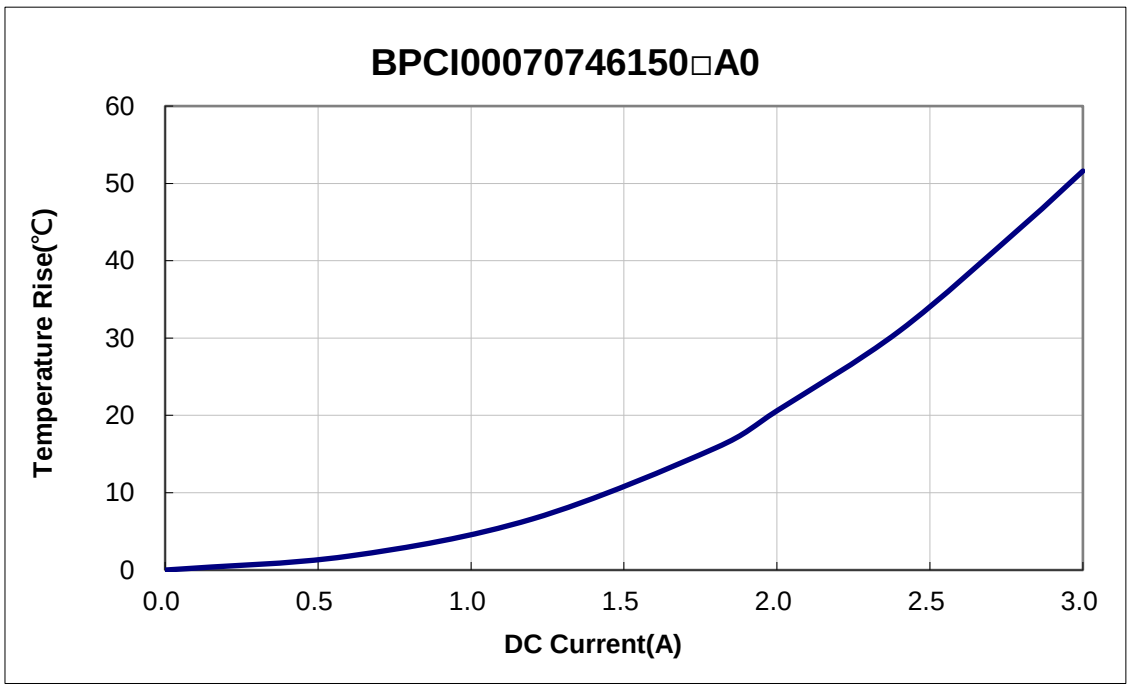

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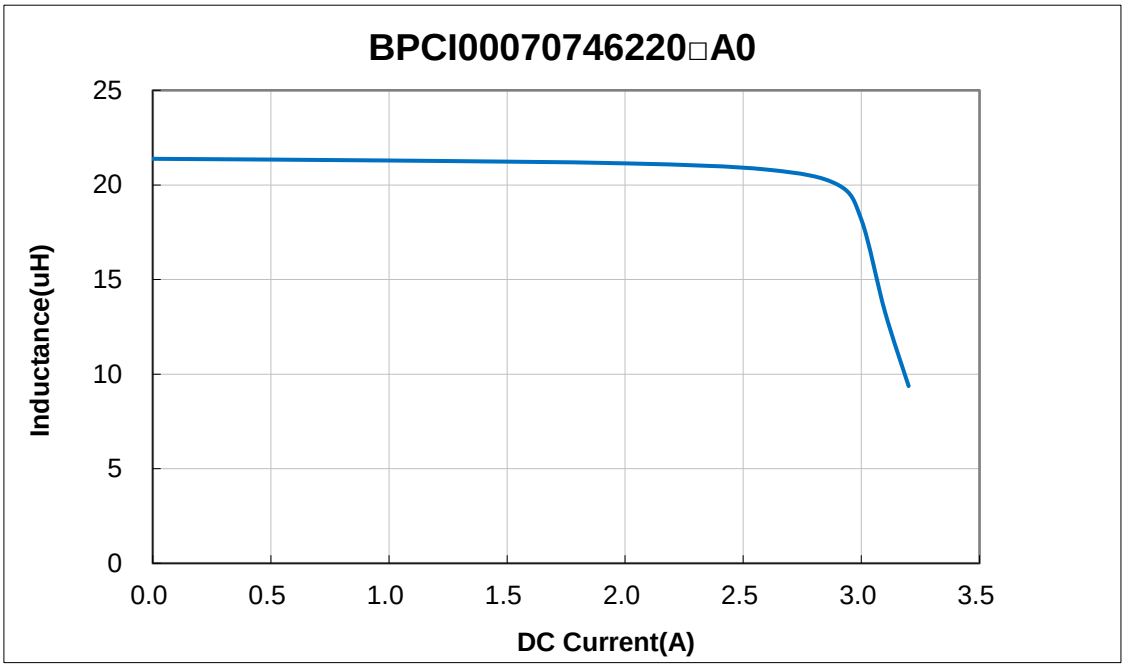

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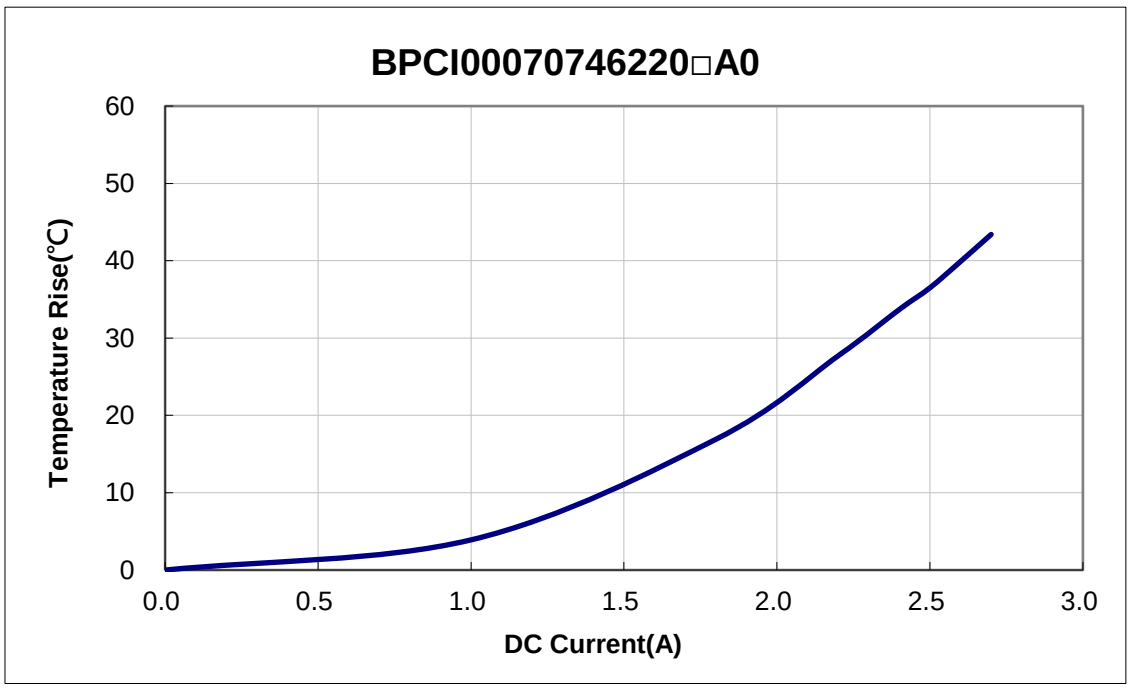

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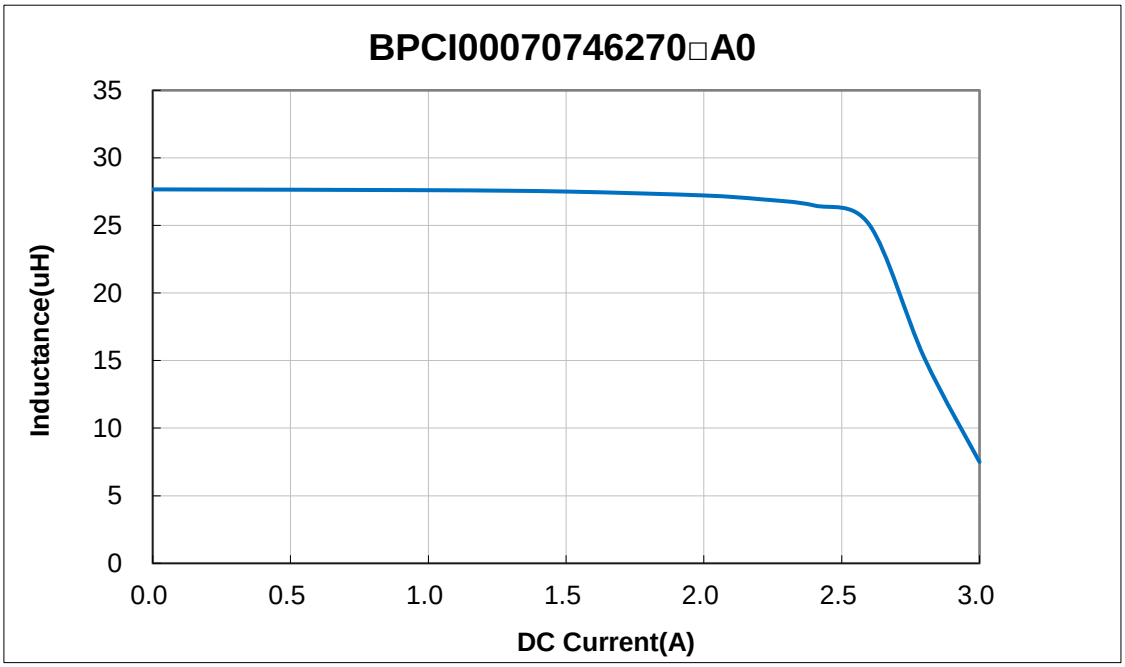
INDUCTANCE vs. DC CURRENT@100KHz/0.25V



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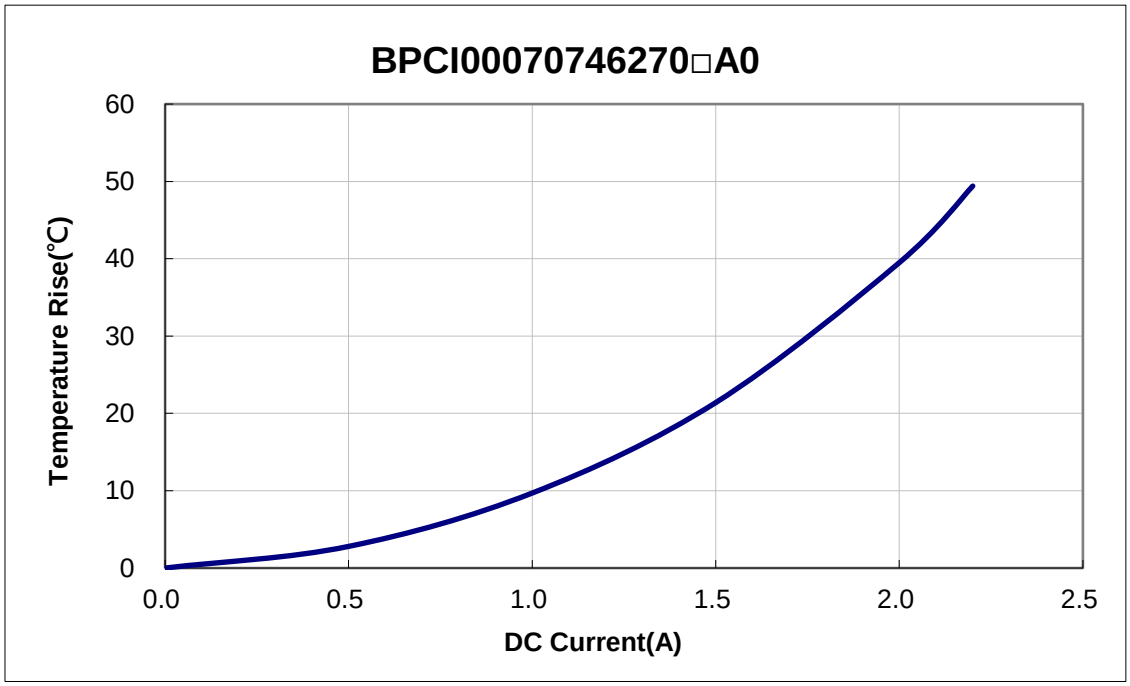

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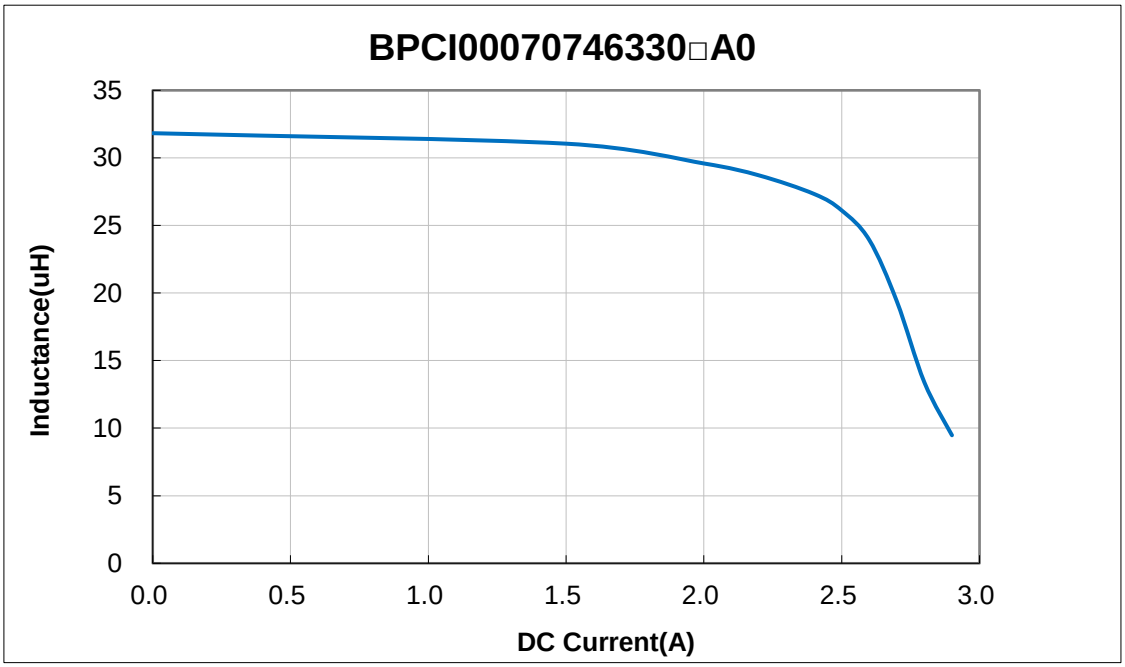
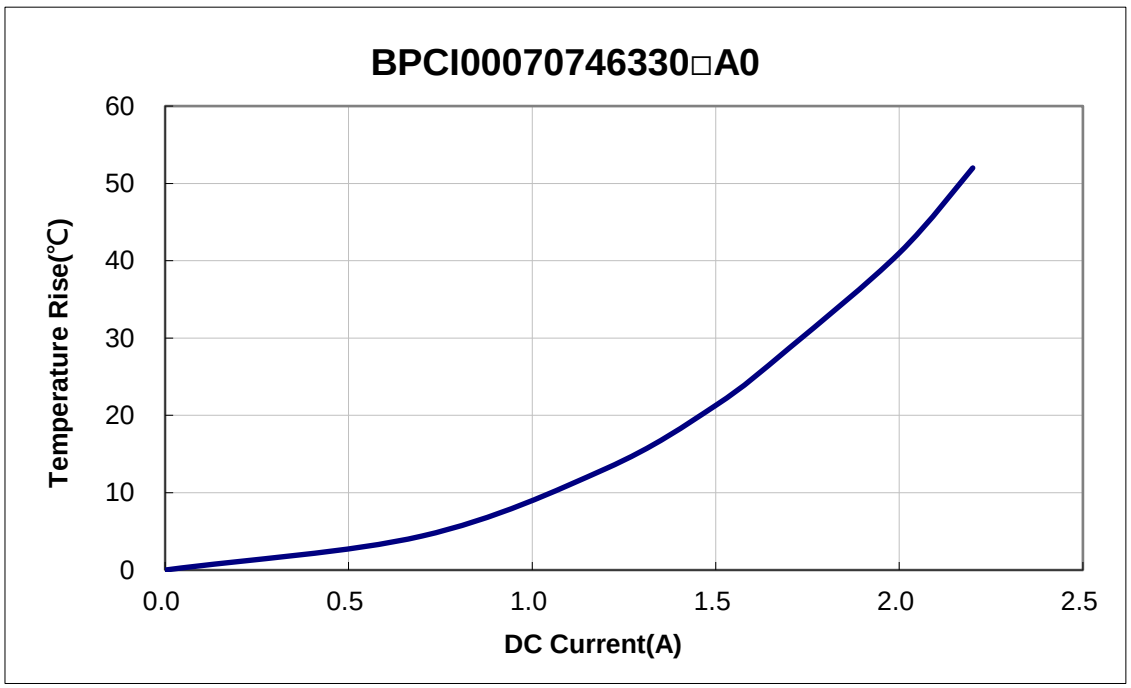


TEMPERATURE vs. DC CURRENT



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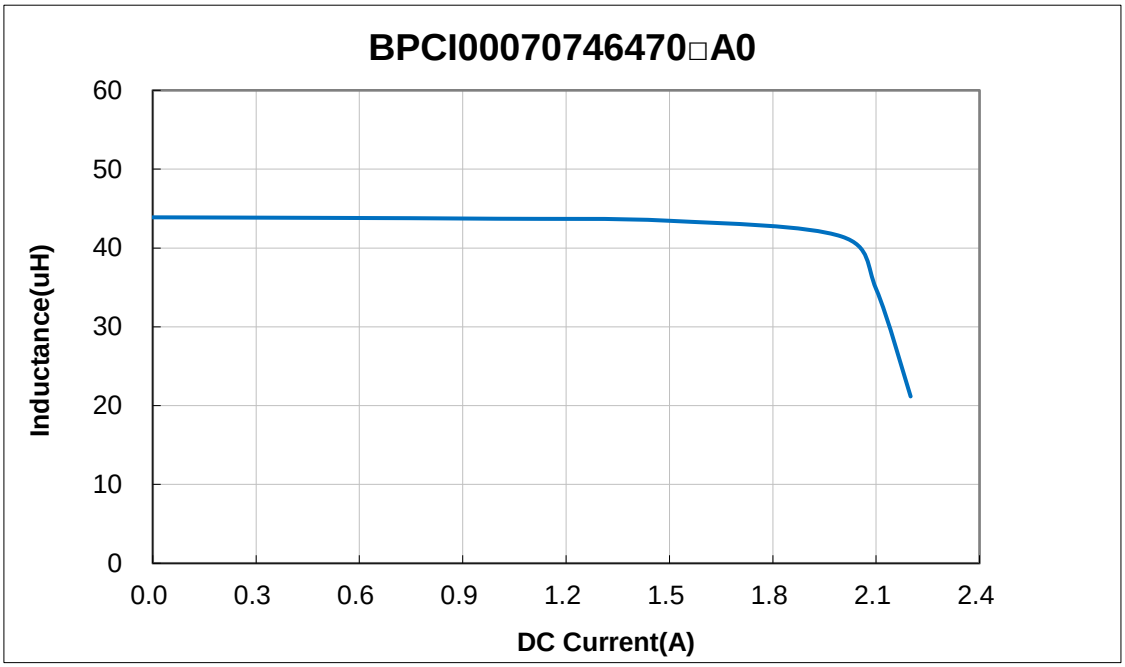
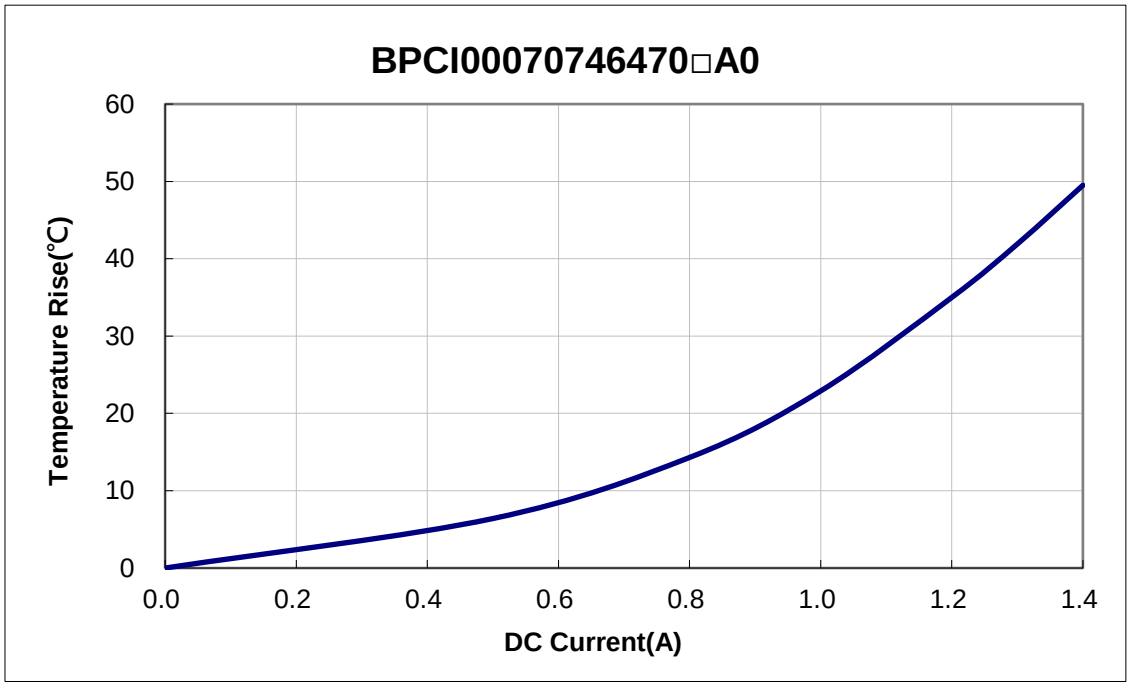
BPCI00070746 Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/0.25V



TEMPERATURE vs. DC CURRENT



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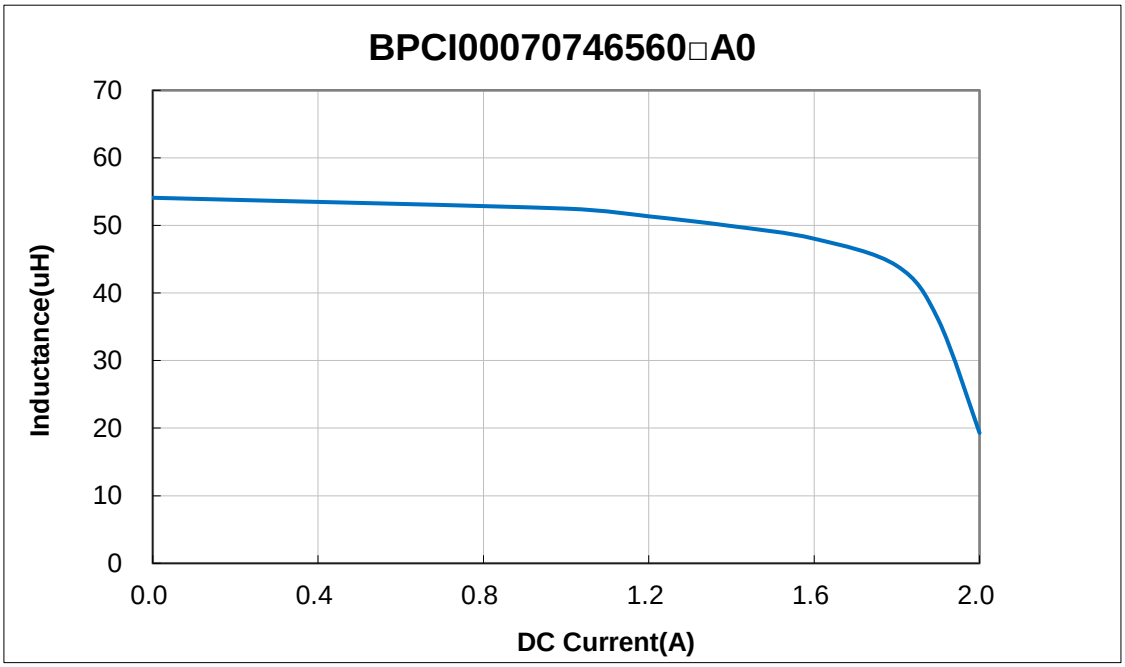
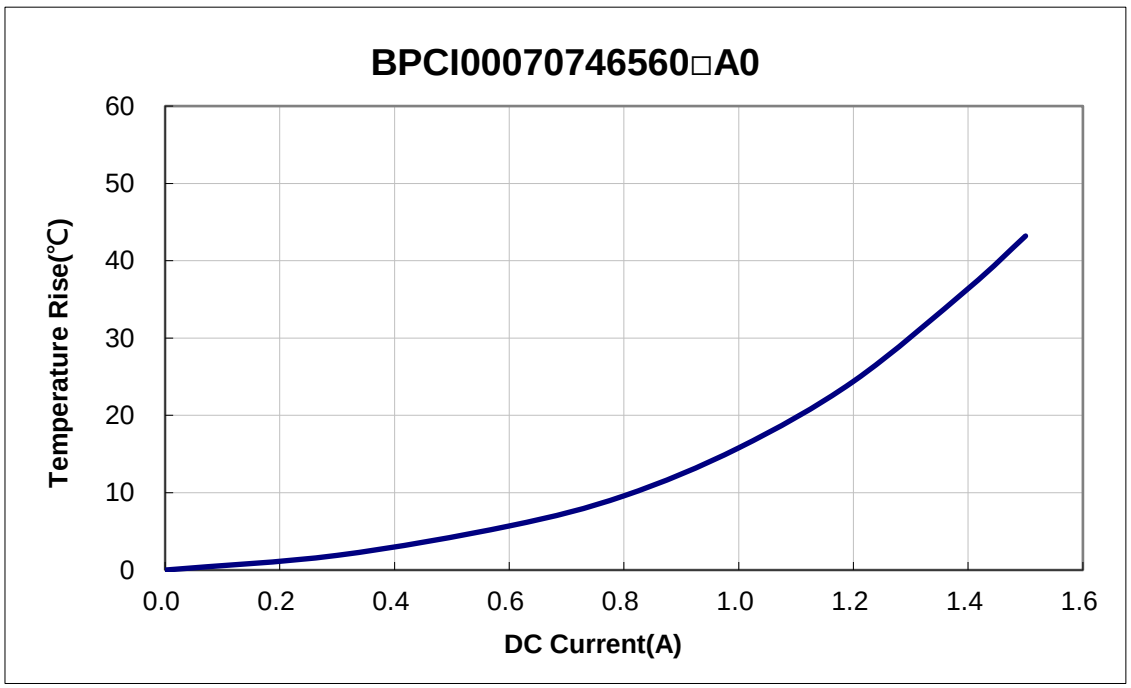
INDUCTANCE vs. DC CURRENT@100KHz/0.25V



TEMPERATURE vs. DC CURRENT



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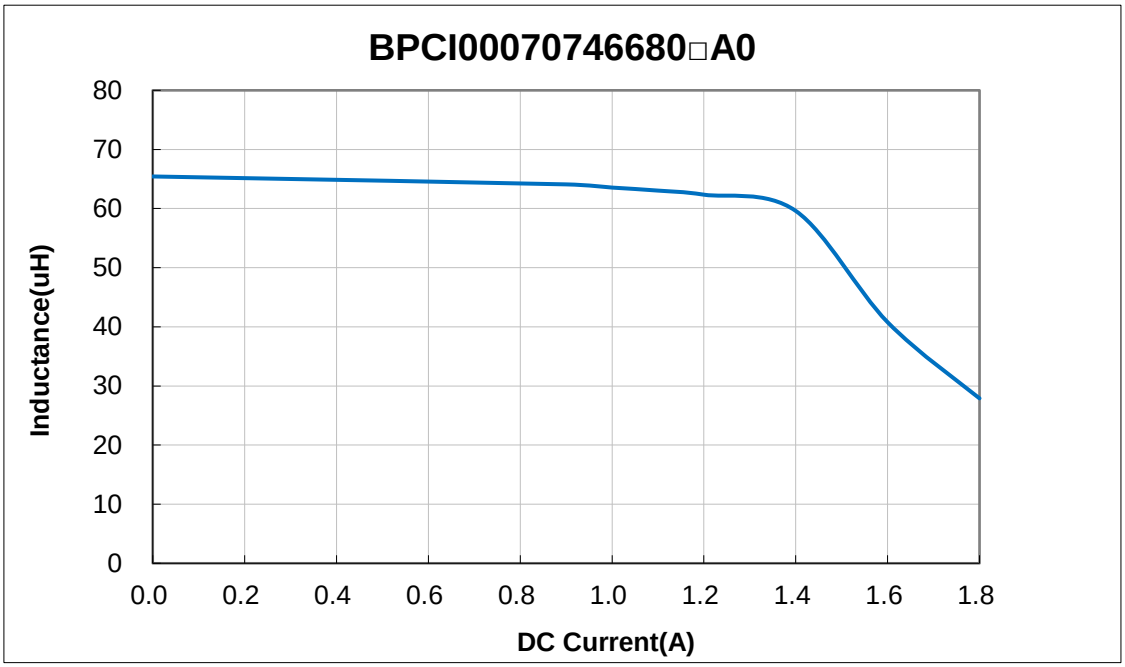
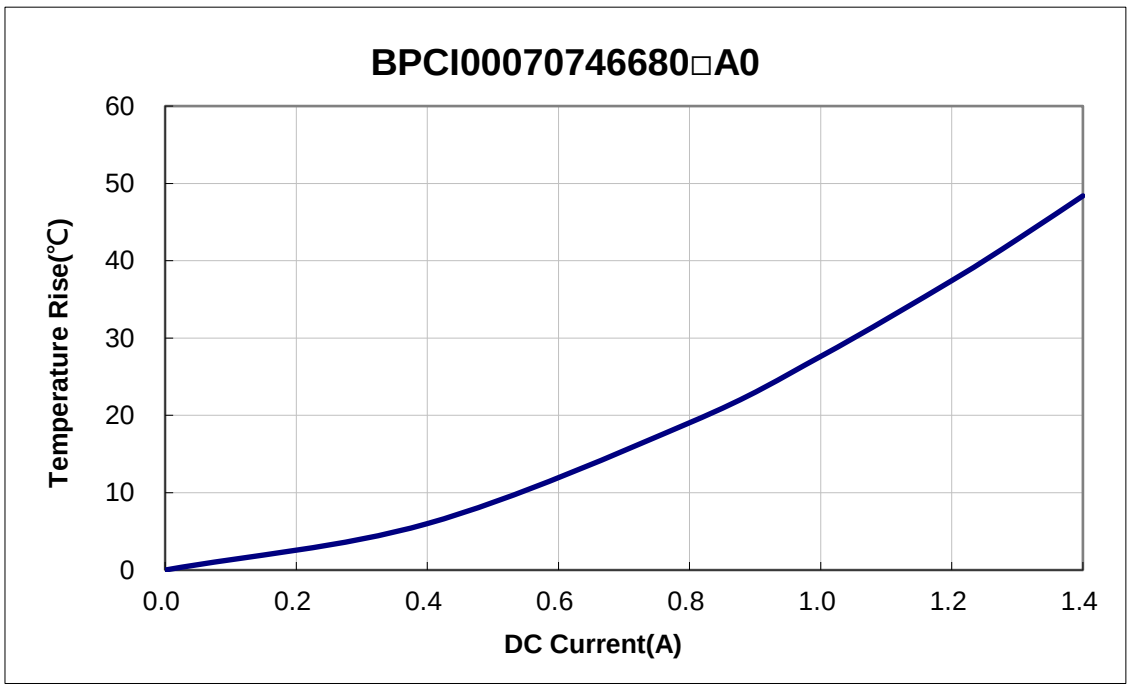


TEMPERATURE vs. DC CURRENT



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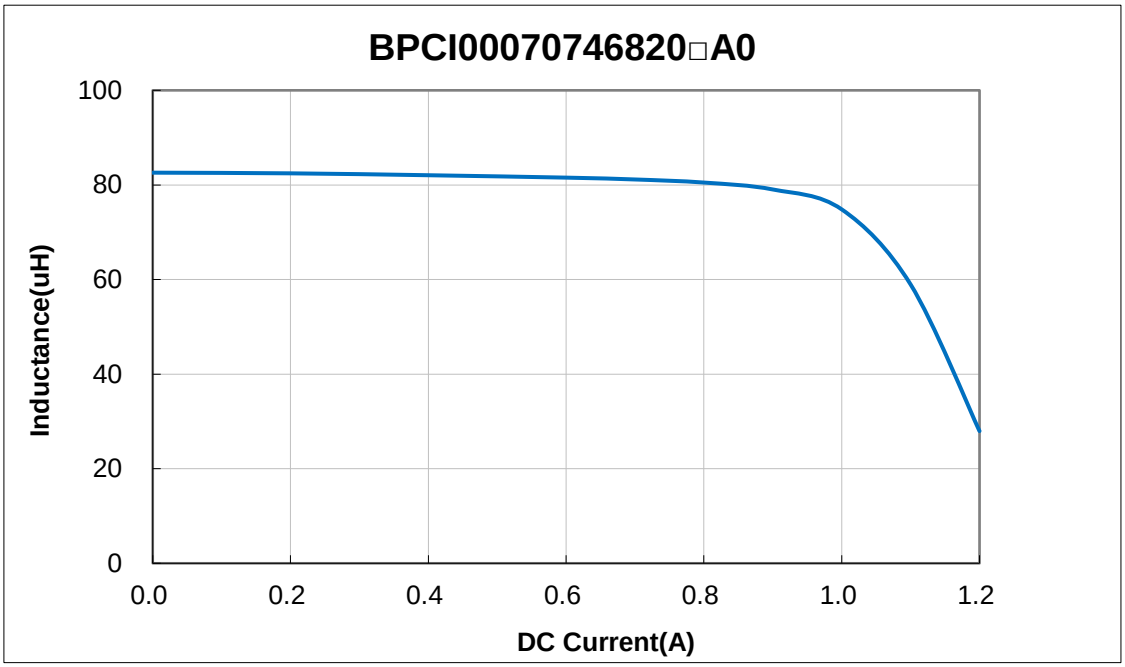
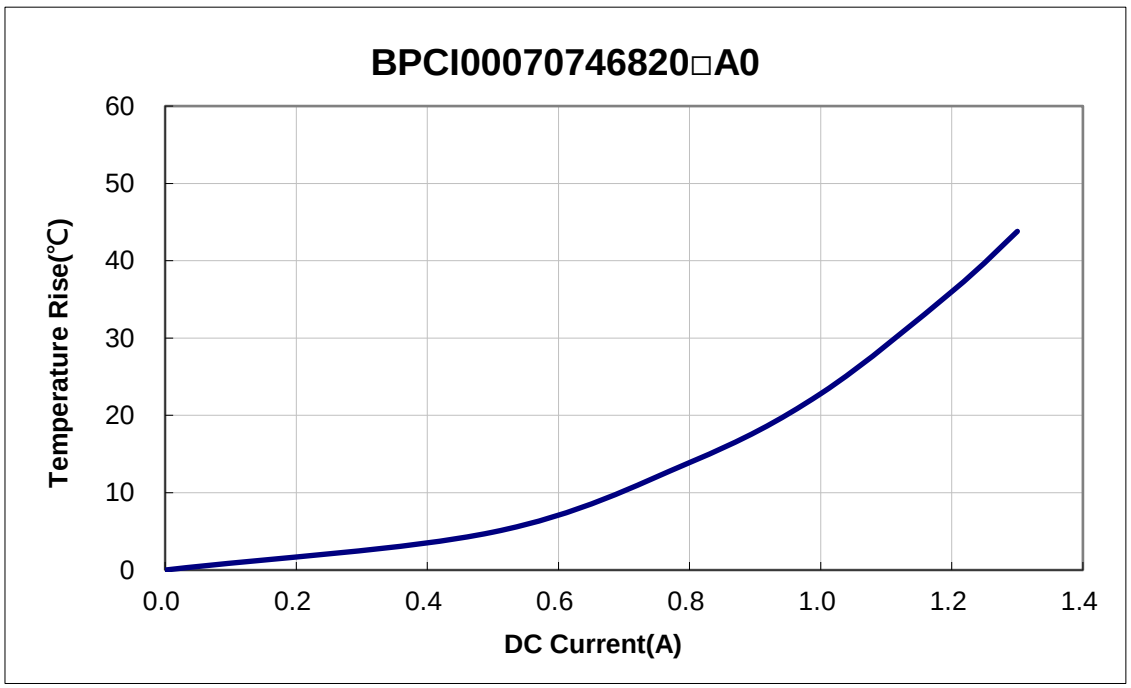


TEMPERATURE vs. DC CURRENT



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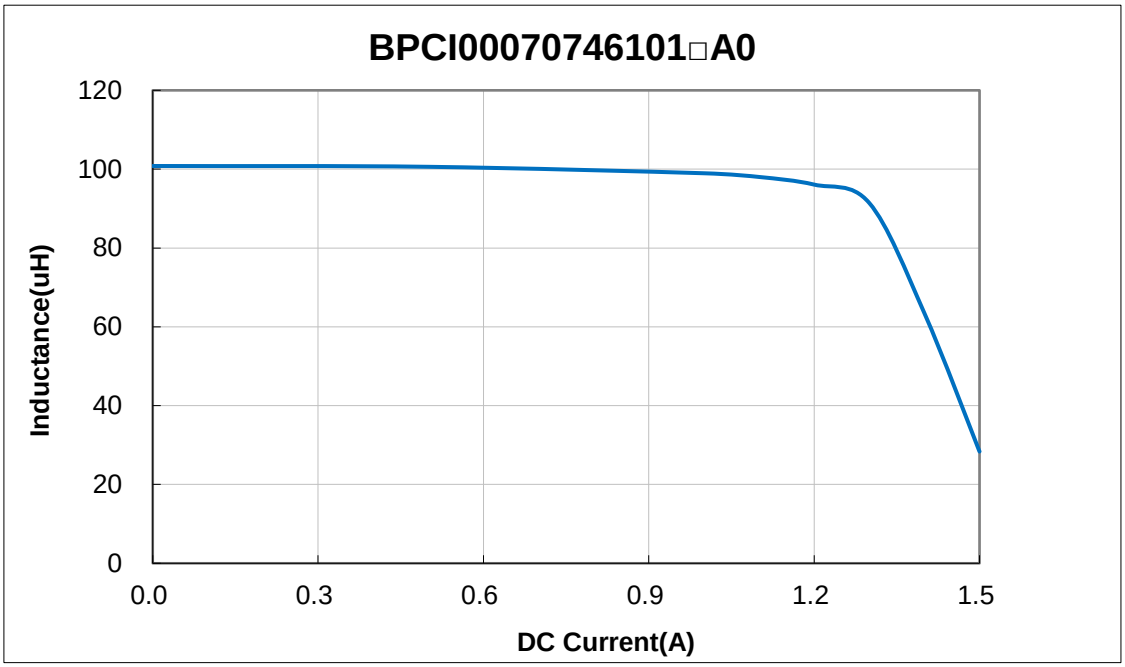
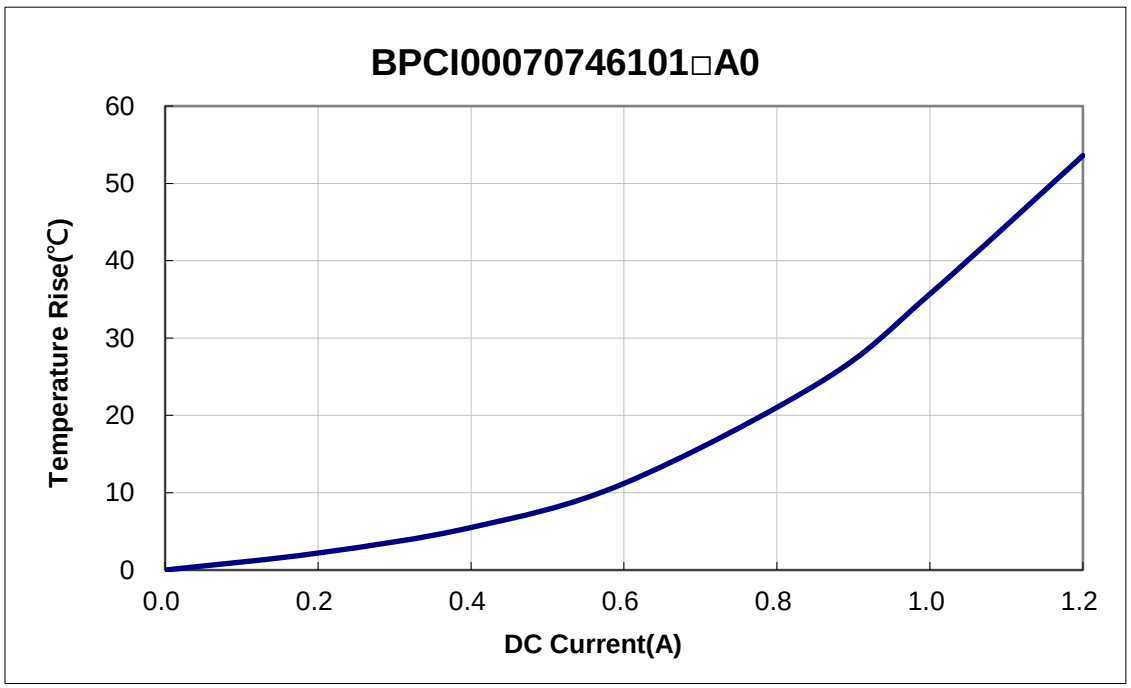


TEMPERATURE vs. DC CURRENT



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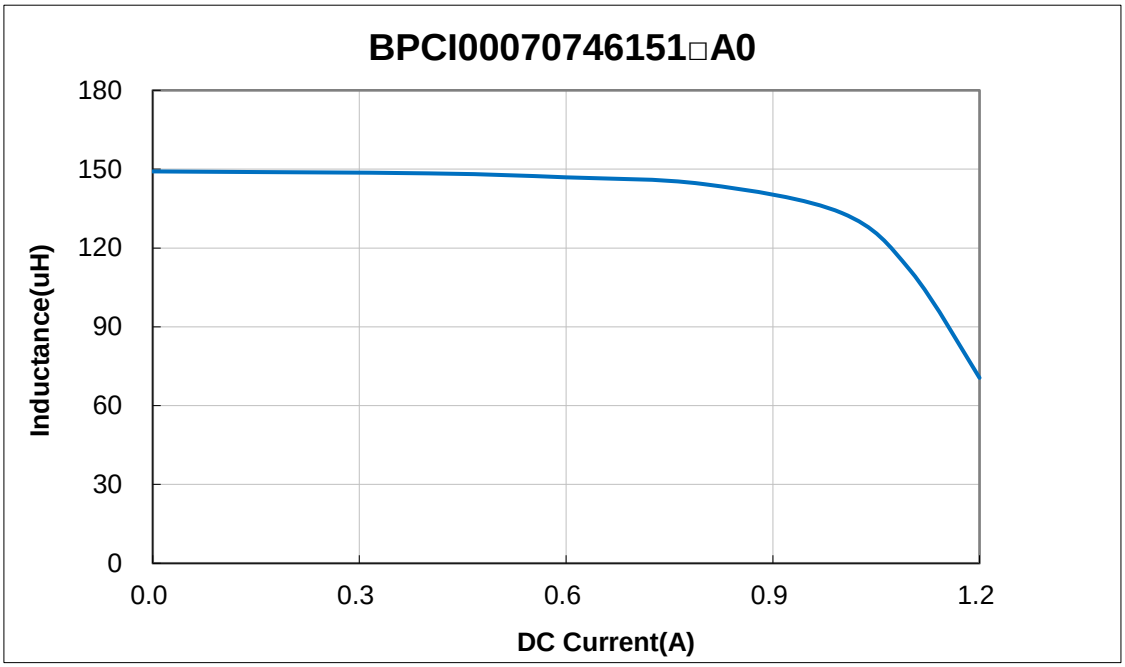
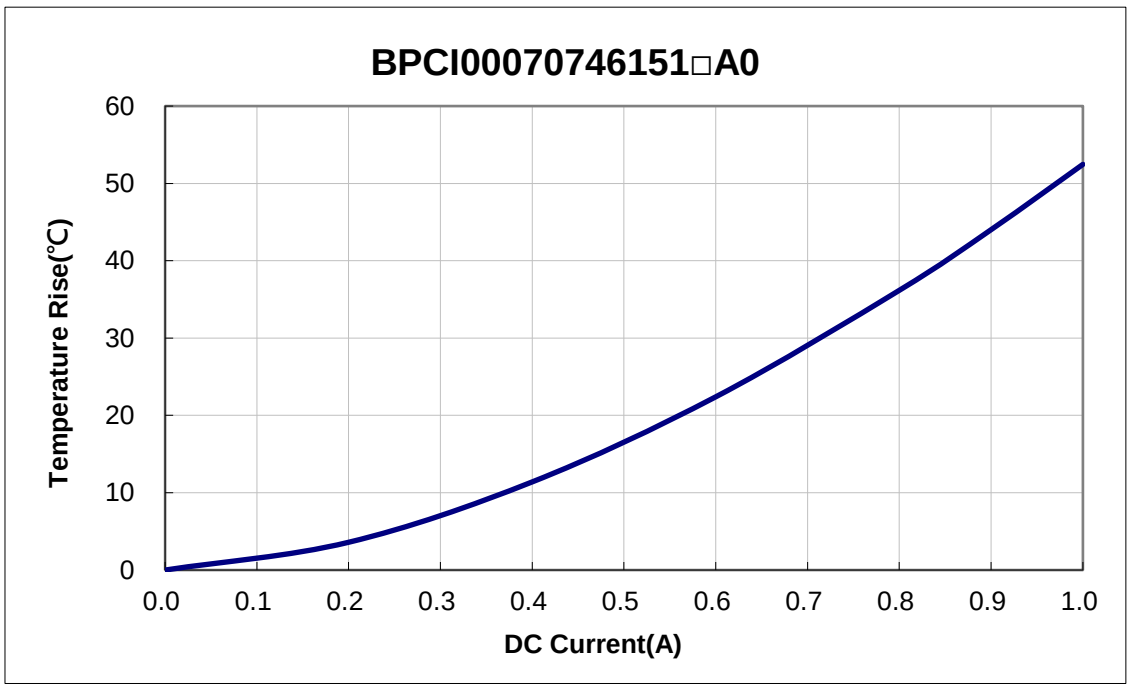


TEMPERATURE vs. DC CURRENT



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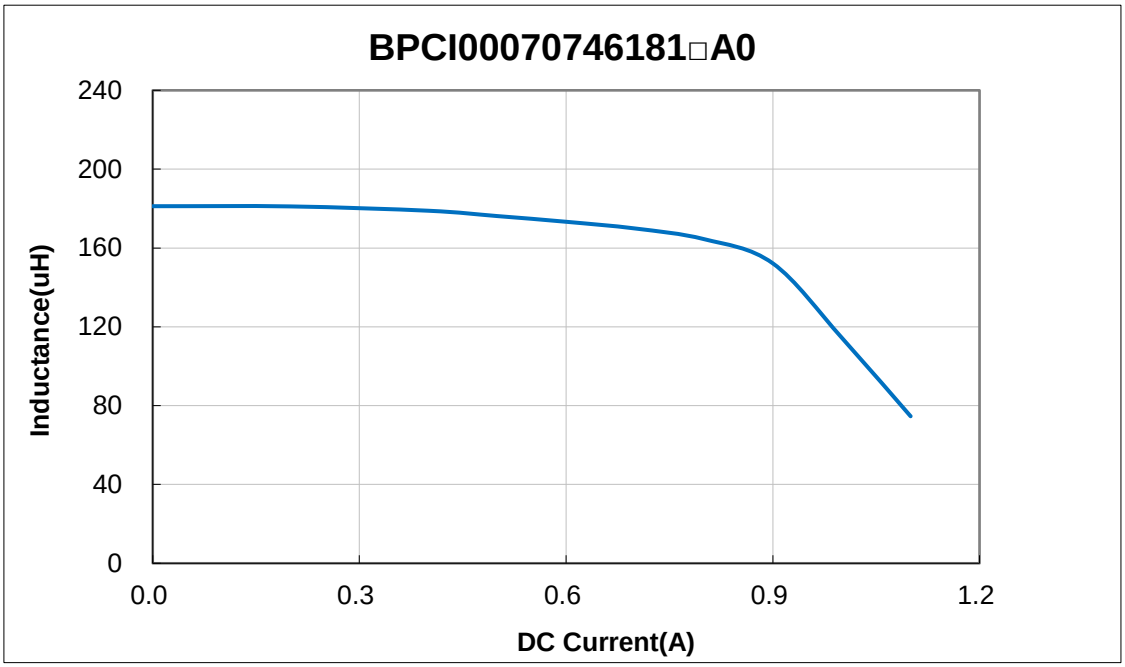
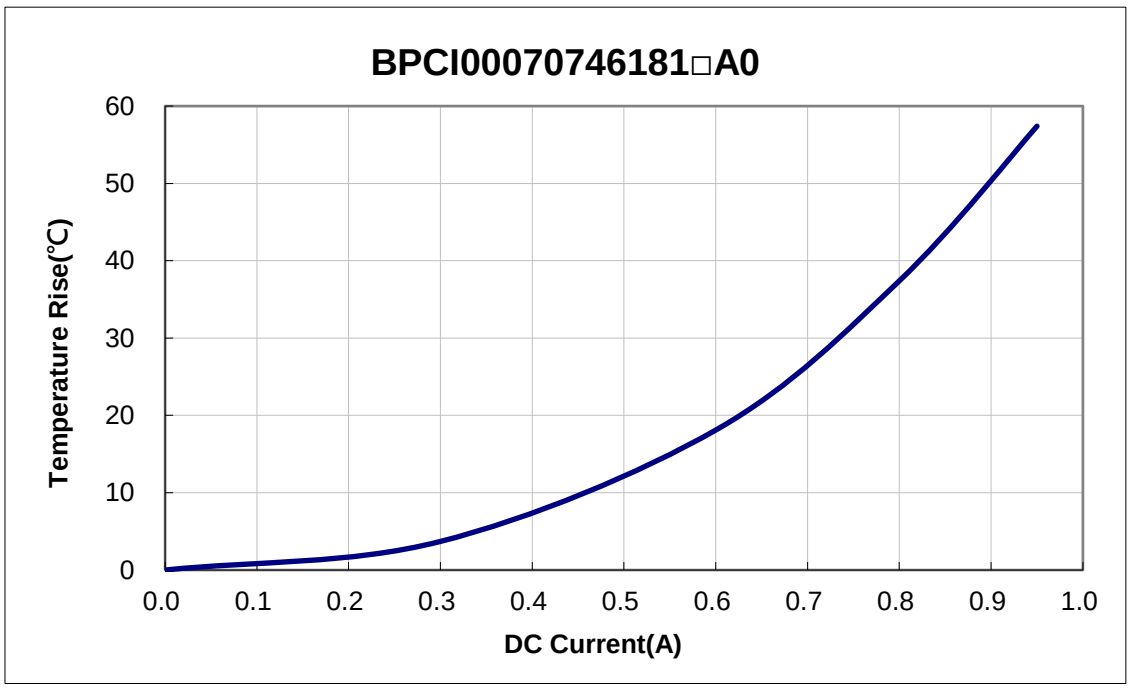


TEMPERATURE vs. DC CURRENT



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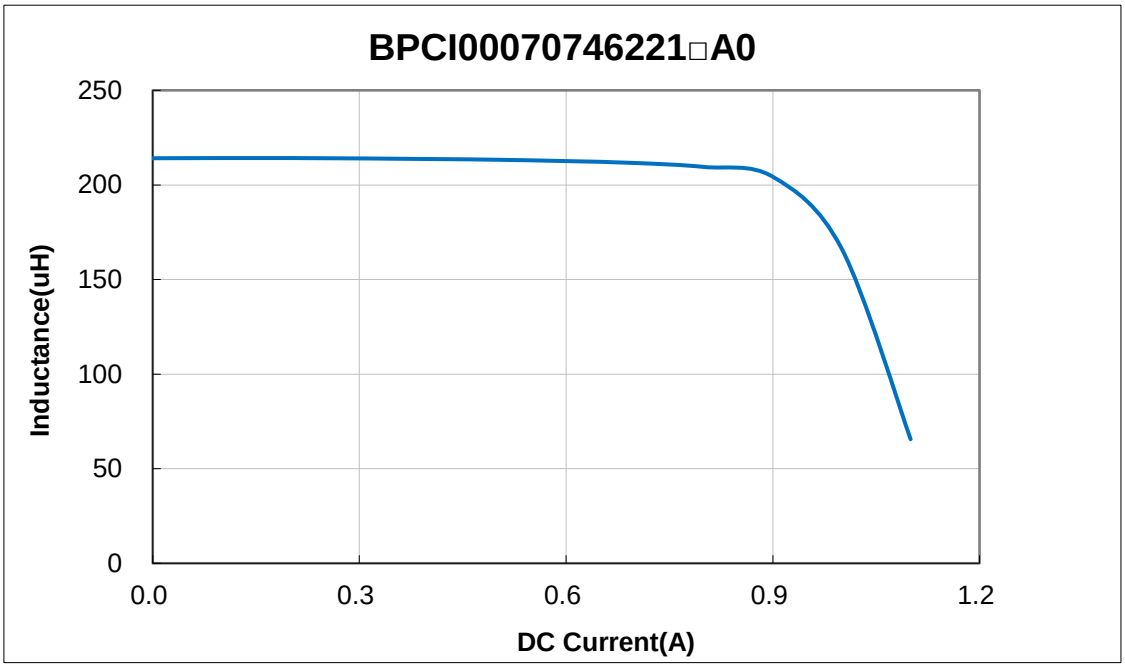
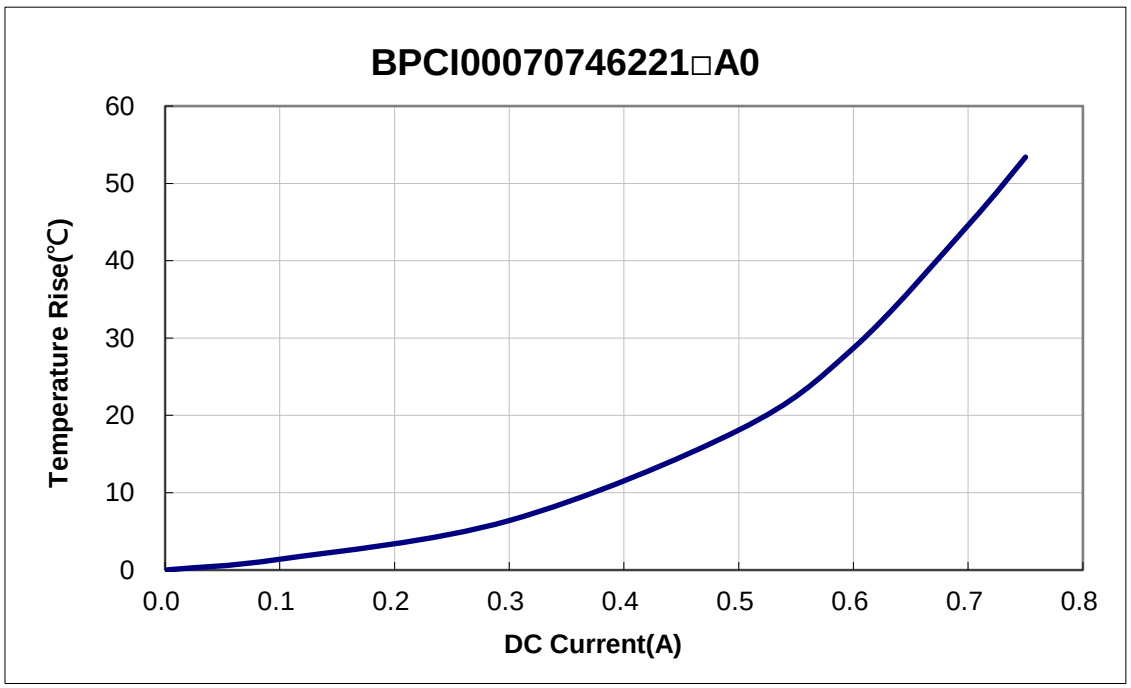


TEMPERATURE vs. DC CURRENT



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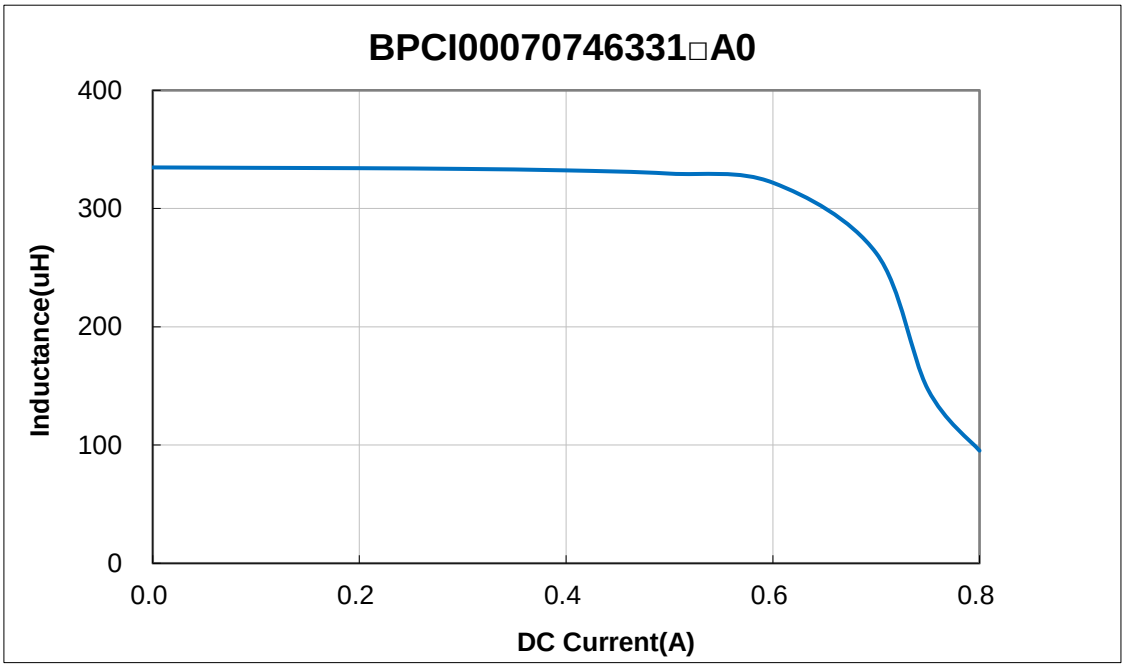
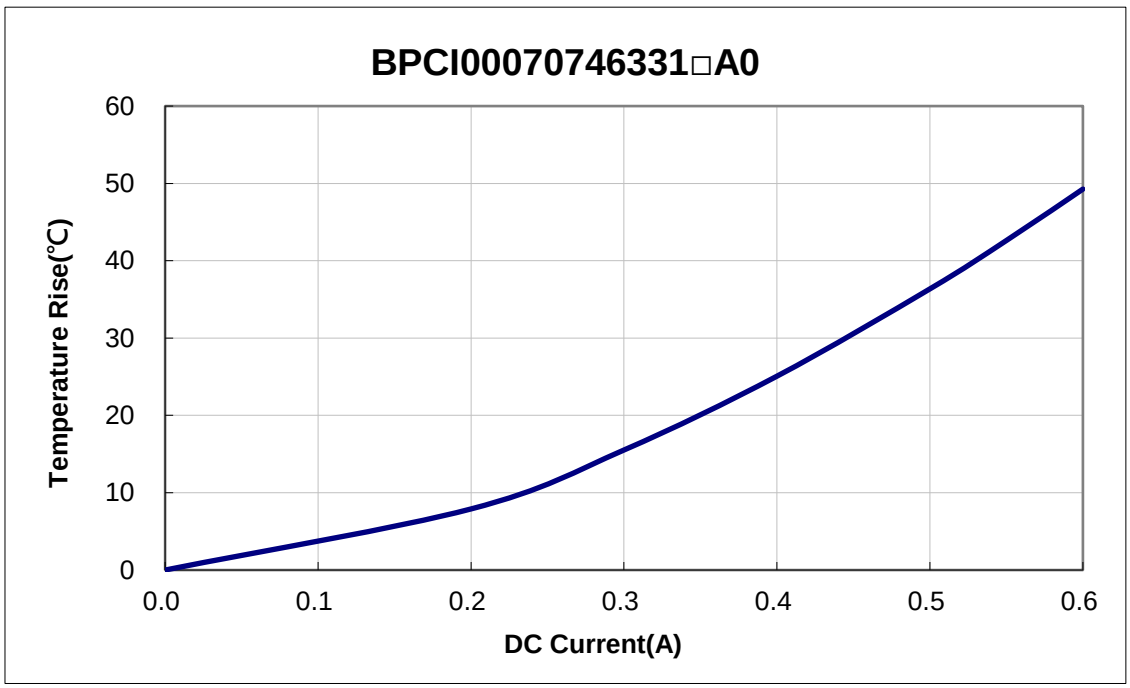


TEMPERATURE vs. DC CURRENT



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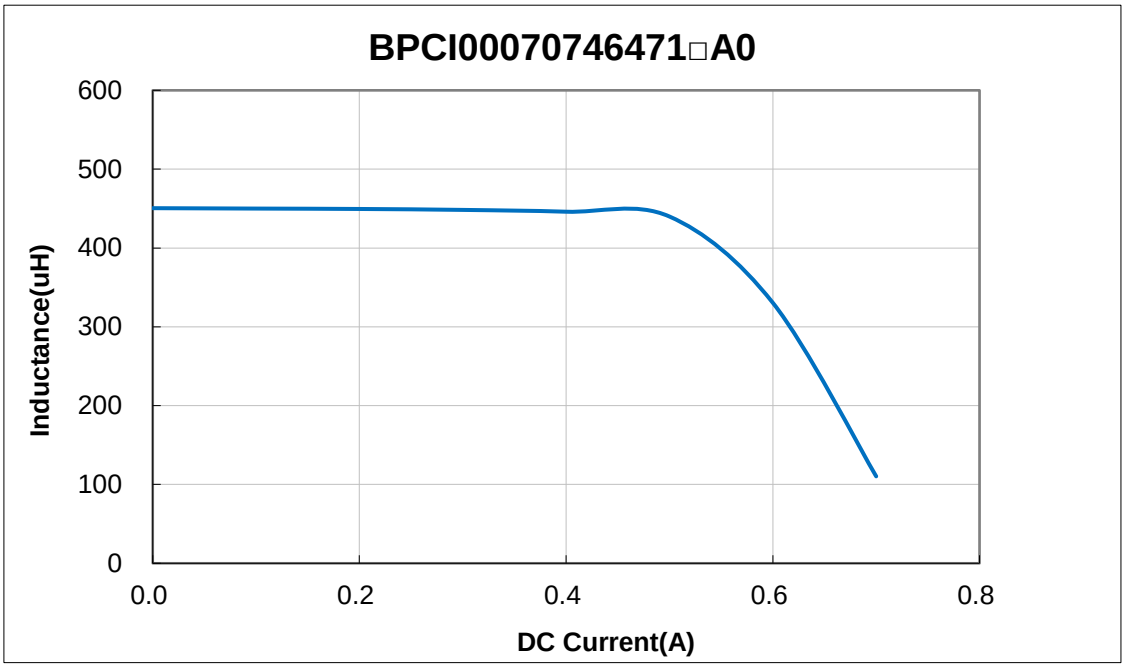

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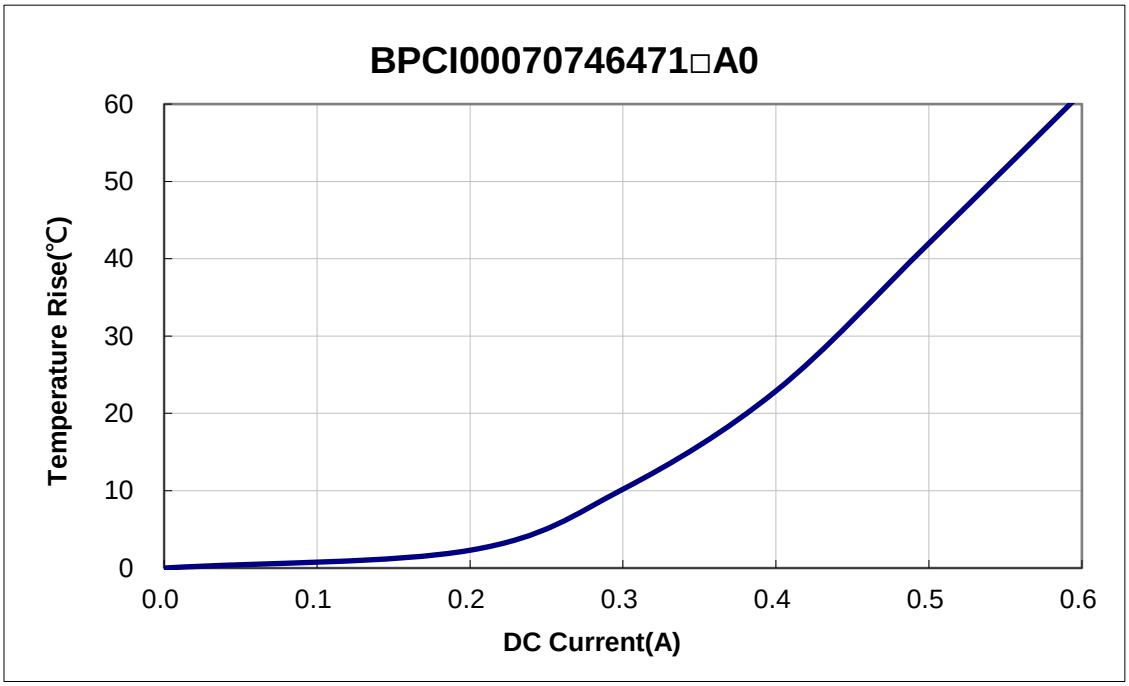

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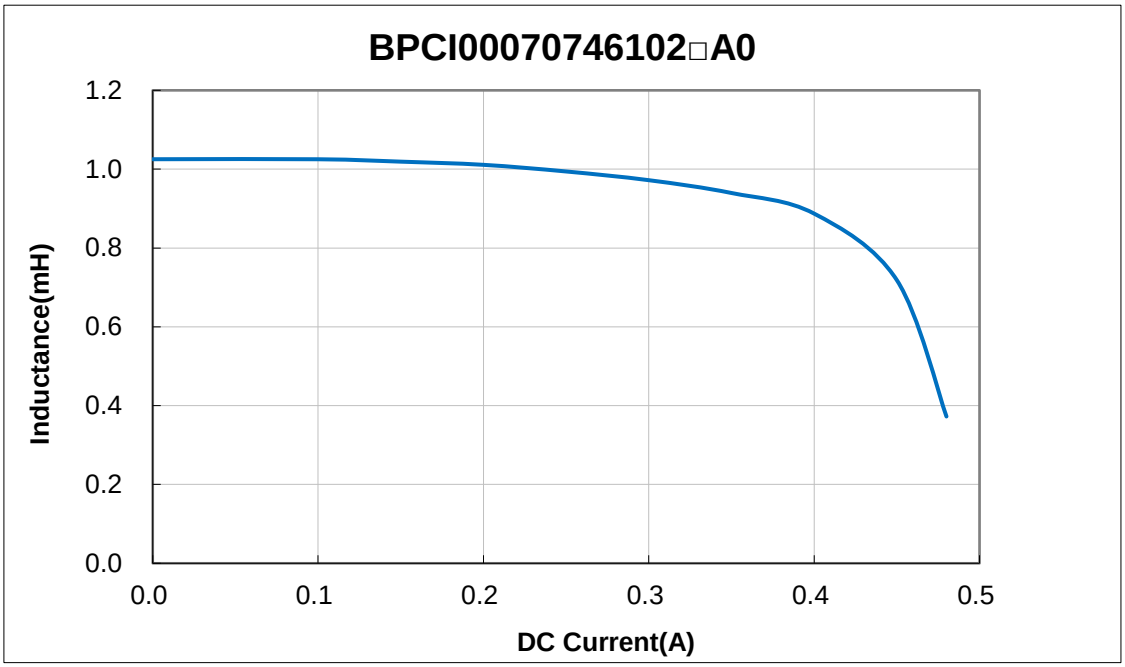

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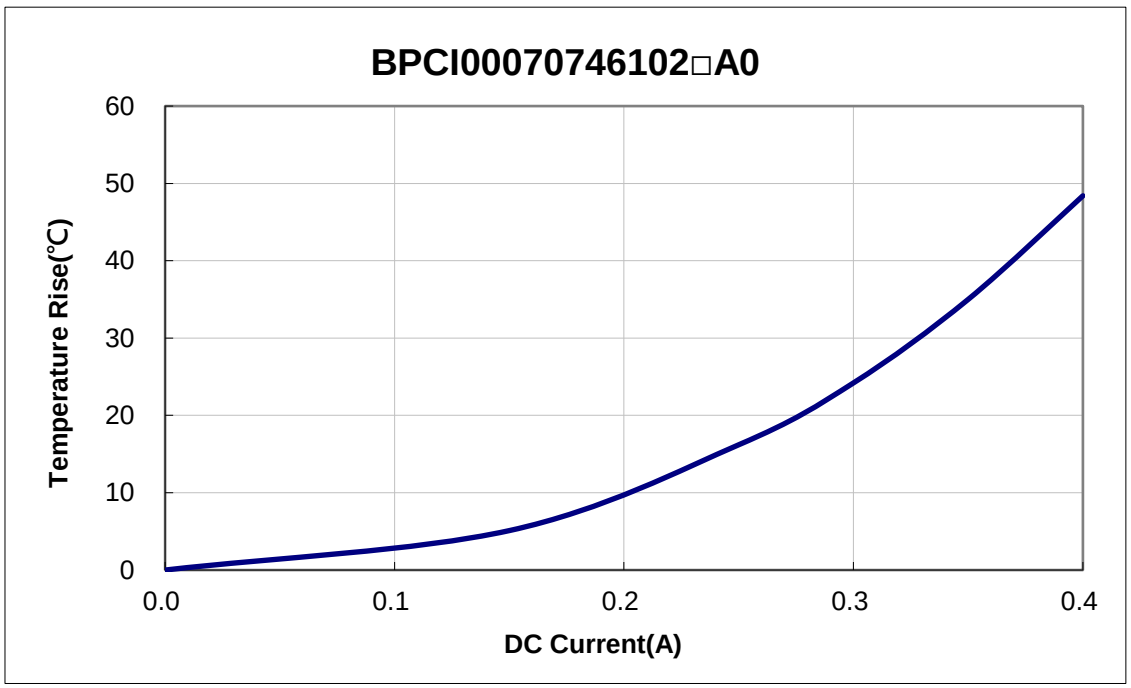

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