Power Inductor

BPMV 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. Surface mount inductors designed for high speed, high current switch mode Surface mount inductors designed for high speed, high current switch mode applications requiring lower inductance
3. Gapped ferrite cores for maximum efficiency Customized specifications are available

Applications

1. Voltage regulator modules (VRMs) for servers, microprocessors
2. High frequency, high current switching power supplies

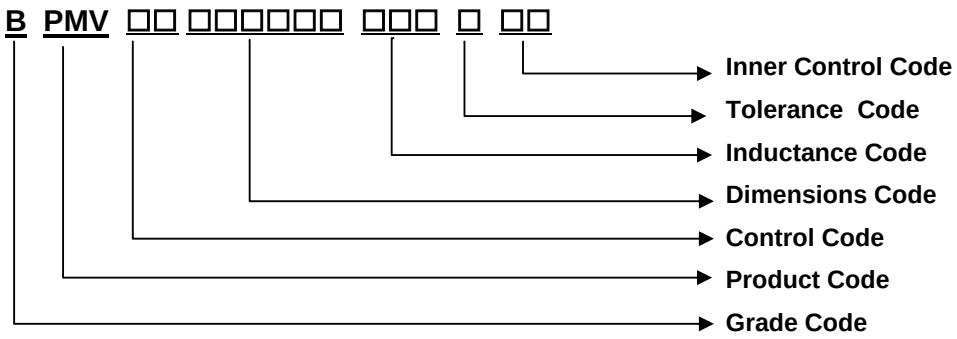
Product Information

Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPMV	7.6	8.1	12.0	0.09 ~ 0.47
	10.0	4.6	6.0	
	10.0	4.4	6.0	
	9.6	6.45	9.0	
	9.6	6.4	9.0	
	10.0	6.0	12.0	
	10.0	7.0	10.0	
	10.7	7.5	9.5	
	10.7	7.5	12.0	

BPMV00110810 Series Specification

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

2 Part Numbering:



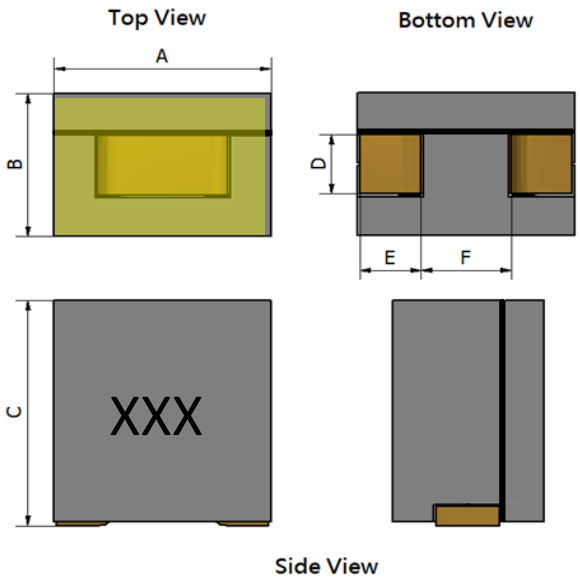
3 Rating:

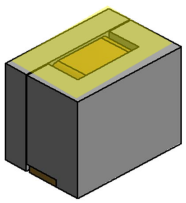
Operating Temperature: －40℃ ~ 125℃(Including self - temperature rise)
Storage Temperature: (on tape & reel): -20°C to +40°C; 75% RH max.

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:





Marking XXX

Marking color:Black

Note：Standard of the printing area, parts of the surface are the qualified Marking non-directional printing limit

A: 10.7 Max. mm
B: 7.5 Max. mm
C: 9.5 Max. mm
D: 2.80 Typ. mm
E: 2.80 Typ. mm
F: 4.60 Typ. mm

Net Weight (grms)

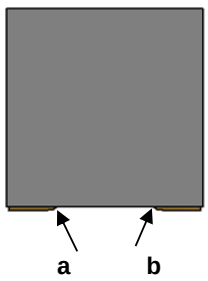
SIZE CODE	Net Weight (grms)
110810	3.29 (Typ.)

6 Electrical Characteristics:

Part No.	Inductance L(nH)	Resistance RDC(mΩ)	Isat 1(A)	Rated DC Current Isat 2(A)	Irms(A)	Tolerance	Marking
BPMV00110810R12□00	120	0.23±5%	105	87	61	K,L,M	R12
BPMV00110810R15□00	150	0.23±5%	90	70	61	K,L,M	R15
BPMV00110810R20□00	200	0.23±5%	70	58	61	K,L,M	R20
BPMV00110810R22□00	220	0.23±5%	64	51	61	K,L,M	R22
BPMV00110810R25□00	250	0.23±5%	56	45	61	K,L,M	R25
BPMV00110810R27□00	270	0.23±5%	55	44	61	K,L,M	R27
BPMV00110810R30□00	300	0.23±5%	47	37	61	K,L,M	R30
BPMV00110810R32□00	320	0.23±5%	42	36	61	K,L,M	R32
BPMV00110810R36□00	360	0.23±5%	38	34	61	K,L,M	R36
BPMV00110810R40□00	400	0.23±5%	36	29	61	L,M	R40
BPMV00110810R47□00	470	0.23±5%	28	25	61	M	R47

RDC TEST POINT

The nominal DCR is measured from point 〝a〞 to point 〝b〞 .



NOTE: L Test Frequency : 100kHz/1.0V

tolerance K=±10% , L=±15% ,M=±20%

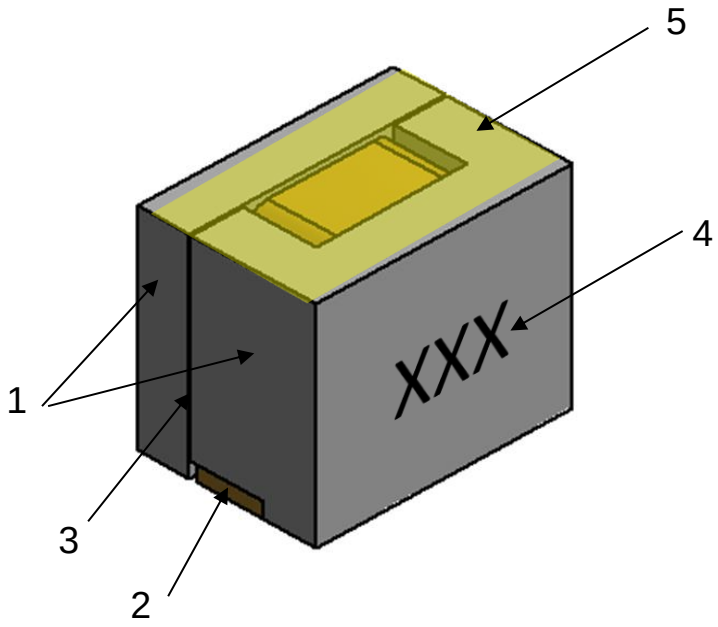
※ Isat1： Based on inductance change (△L/Lo： drop 20% Typ.)@ ambient temp. 25℃

※ Isat2： Based on inductance change (△L/Lo： drop 20% Typ.)@ ambient temp.100℃

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

Rated DC Current： The less value which is Isat1 or Irms .

6 6.1 Construction:



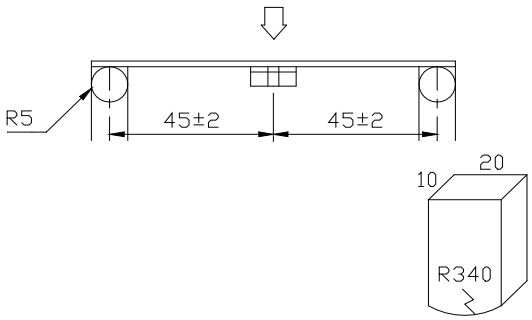
6.2 Material List:

NO.	ITEM	DESCRIPTION & TYPE
1	CORE	FERRITE
2	CLIP	COPPER FOIL
3	ADHESIVE	EPOXY RESIN
4	INK	Ink(Black)
5	Mylar	Polyester Film

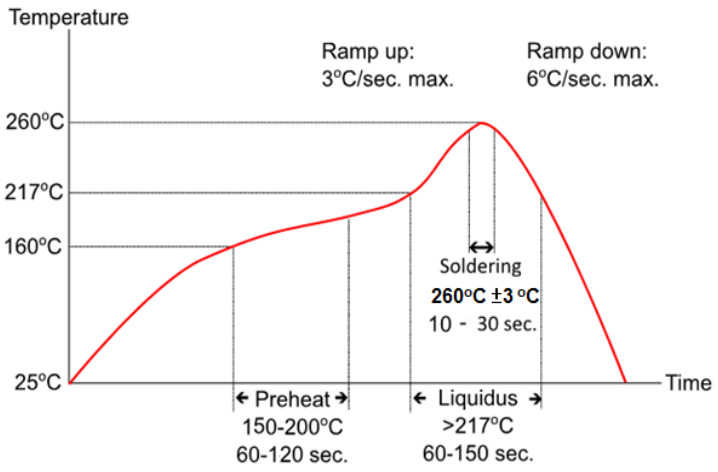
ELECTRICAL

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

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.

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%

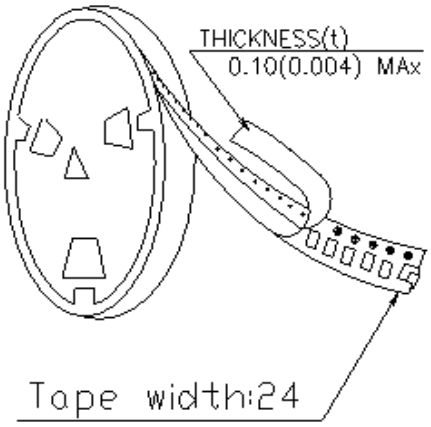
There shall be no other dama-ge of problems</td><td>The sample shall be subject to 5 continuos cycles, such as shown in the table 2 below and then it shall be subjected to standard atmospheric conditions for 1 hour, after which measurement shall be made.

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

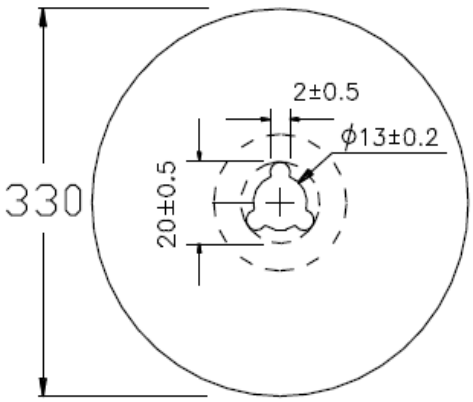


7.2 Packaging Quantity

TYPE	PCS/REEL
BPMI00110810	500

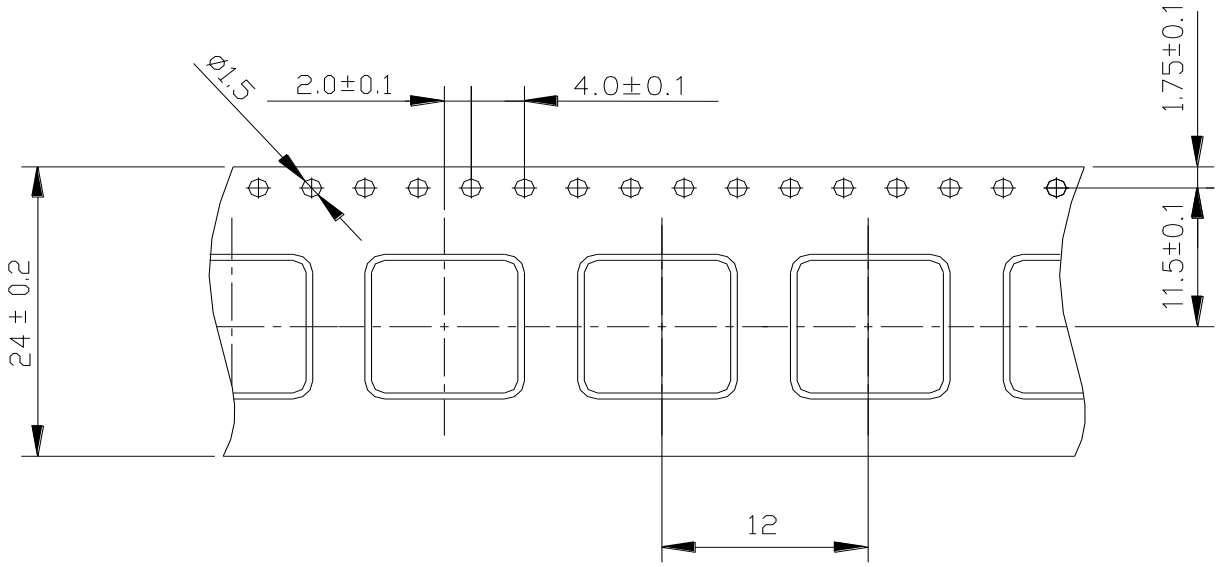
7.3 Reel Dimensions

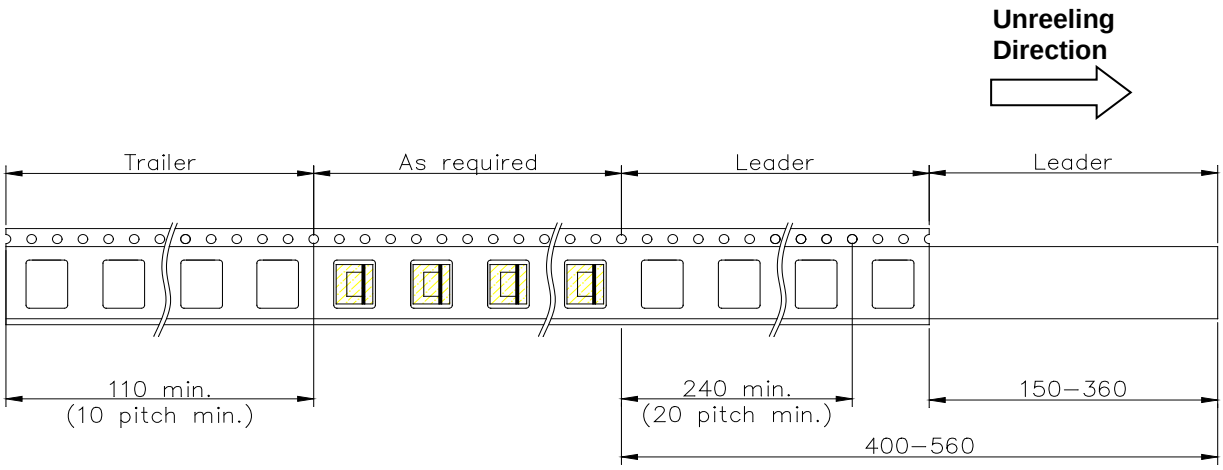
Unit : mm



7 Packaging:

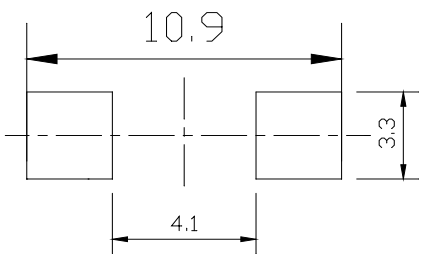
7.4 Tape Dimensions in mm





8 Recommended Land Pattern:

(STANDARD PATTERN) **Unit : mm**



9 Note:

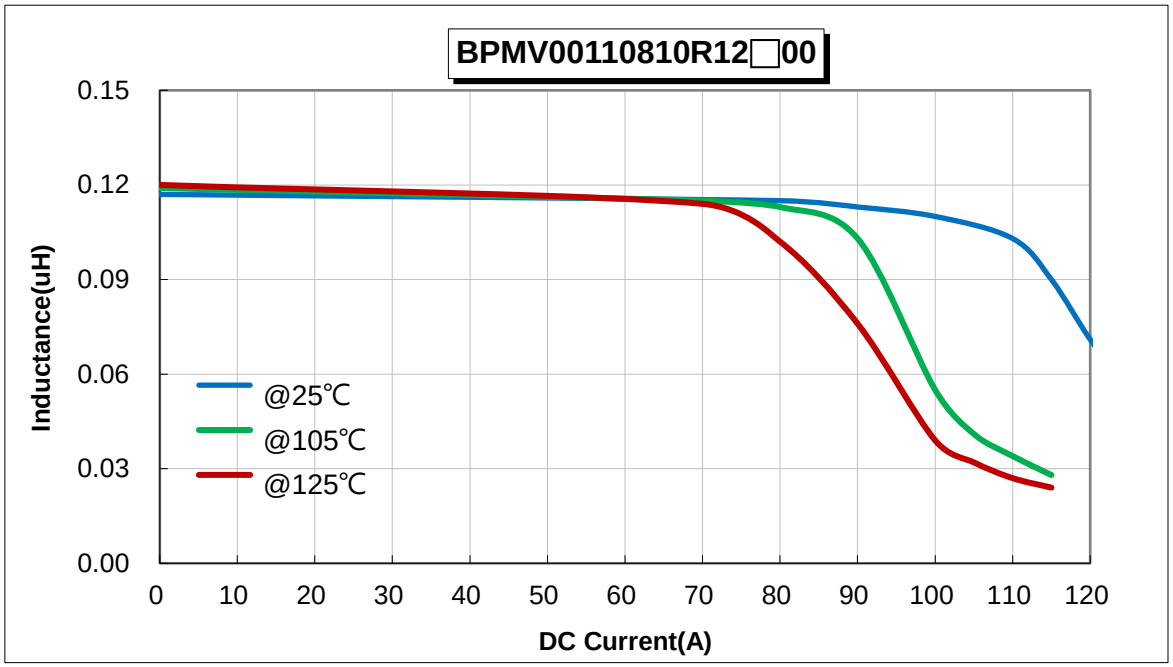
1. Please make sure that your product has been evaluated and confirmed against your specifications when our product is mounted to your product.
2. Do not knock or drop.
3. All the items and parameters in this product specification have been prescribed on the premise that our product is used for the purpose,under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

Storage Condition:The temperature should be within-40°C ~105°C and humidity should be less than 75%RH. The product should be used within 12 months from the time of delivery. In addition, suggest to use product within 6 months from the time of delivery.

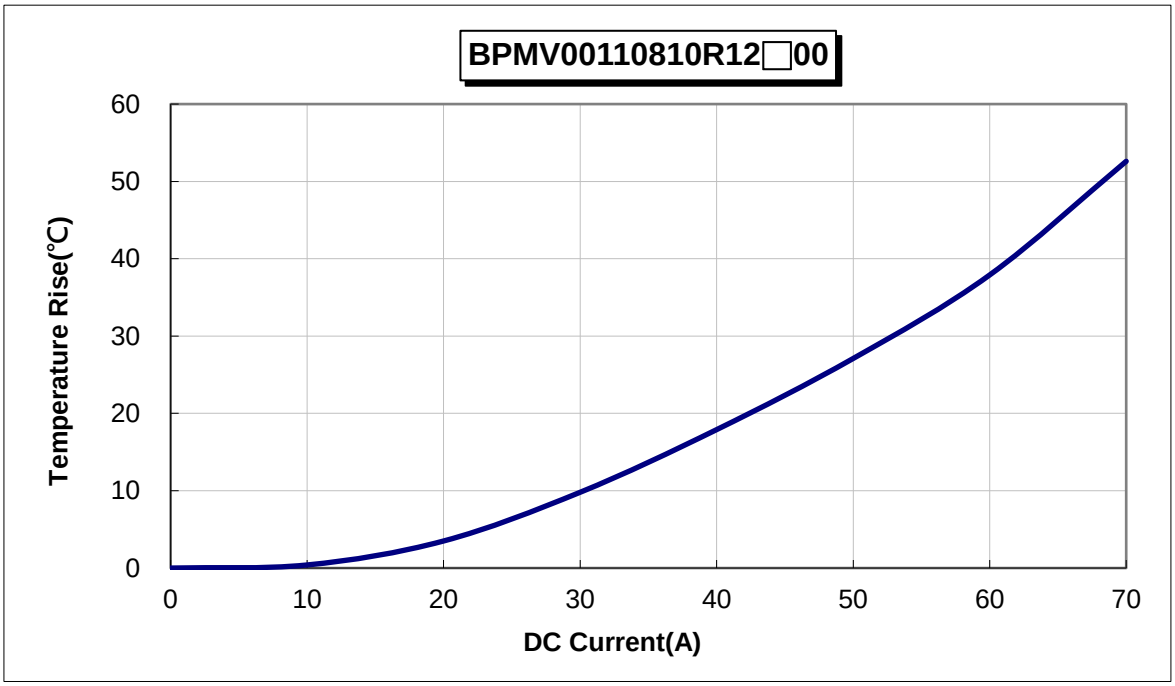
BPMV00110810 Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/1.0V



TEMPERATURE vs. DC CURRENT



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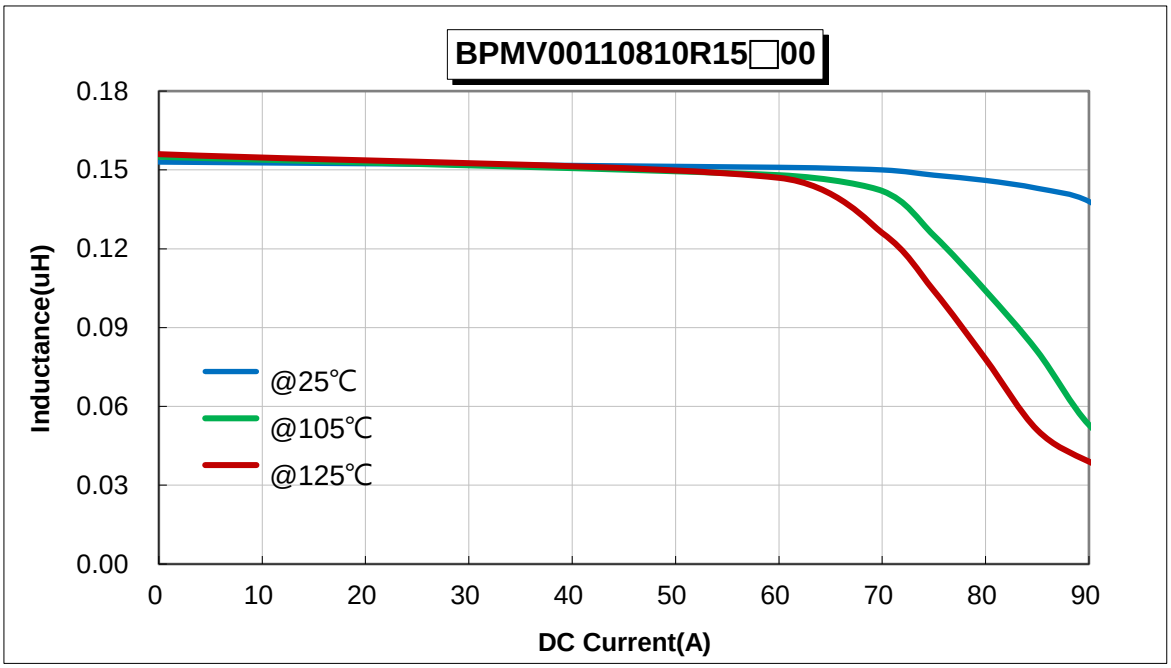
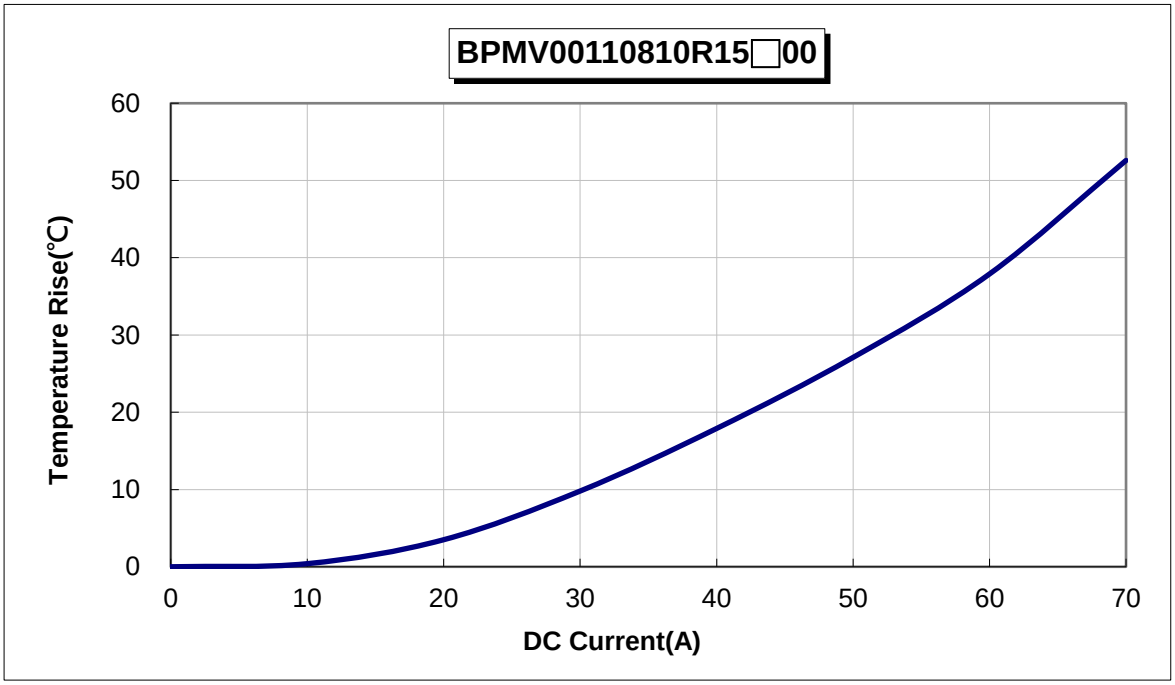


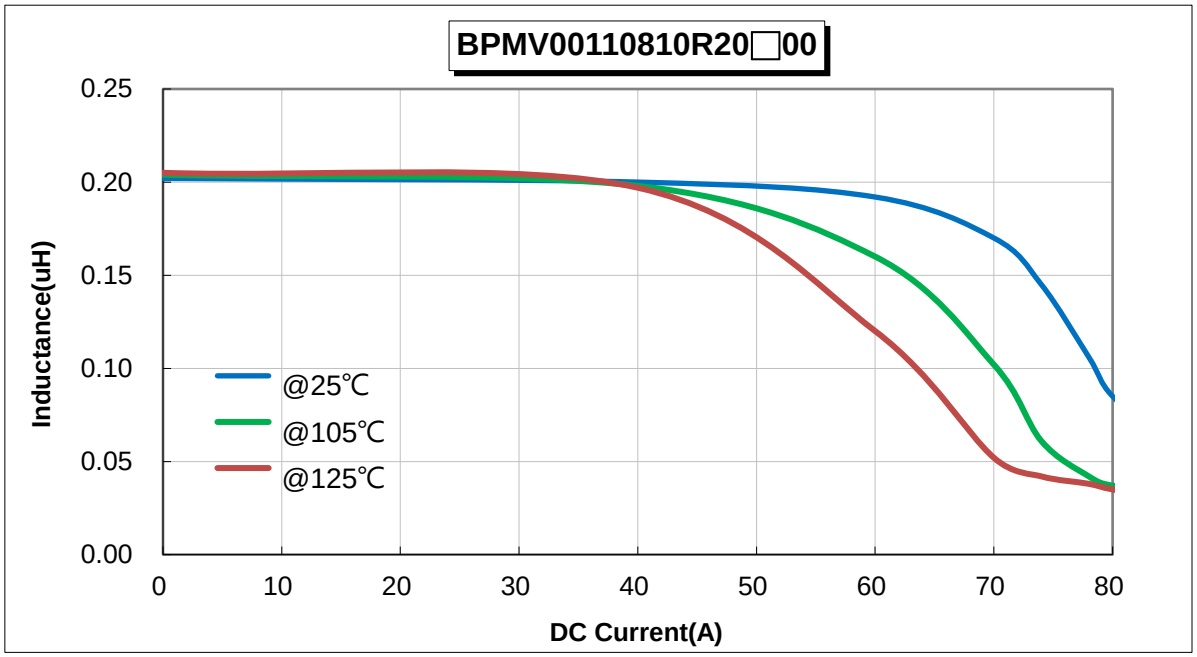
TEMPERATURE vs. DC CURRENT



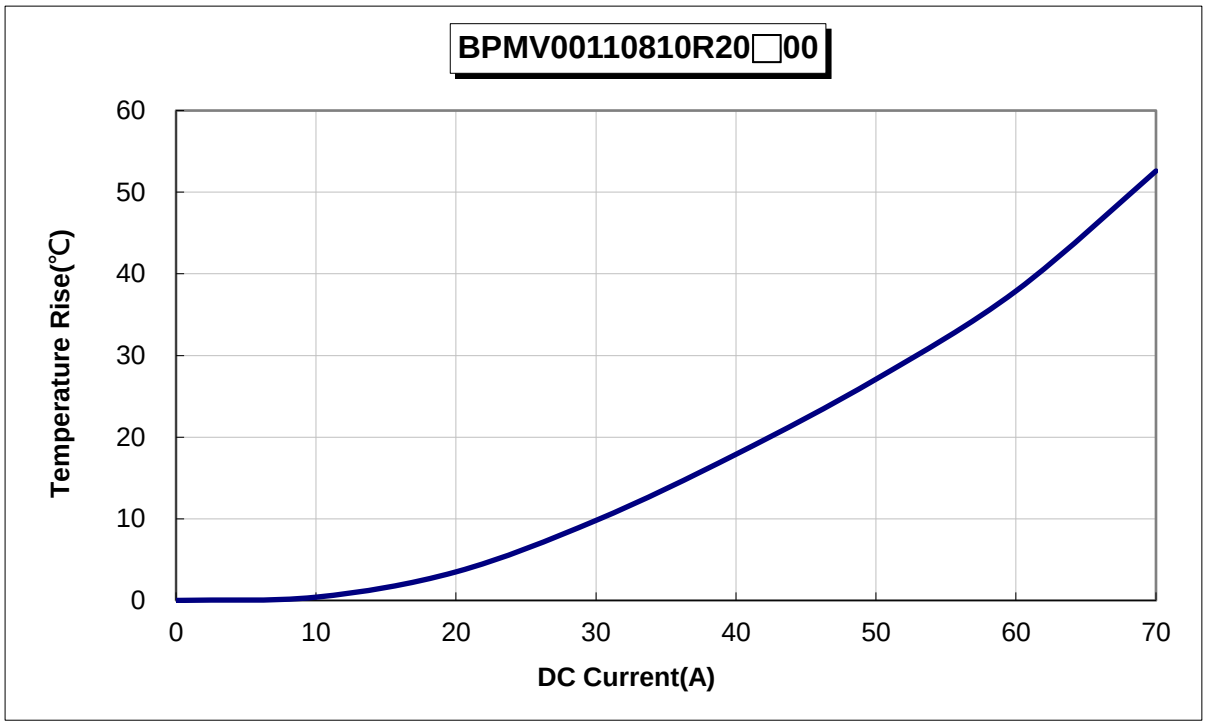
BPMV00110810 Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/1V



TEMPERATURE vs. DC CURRENT



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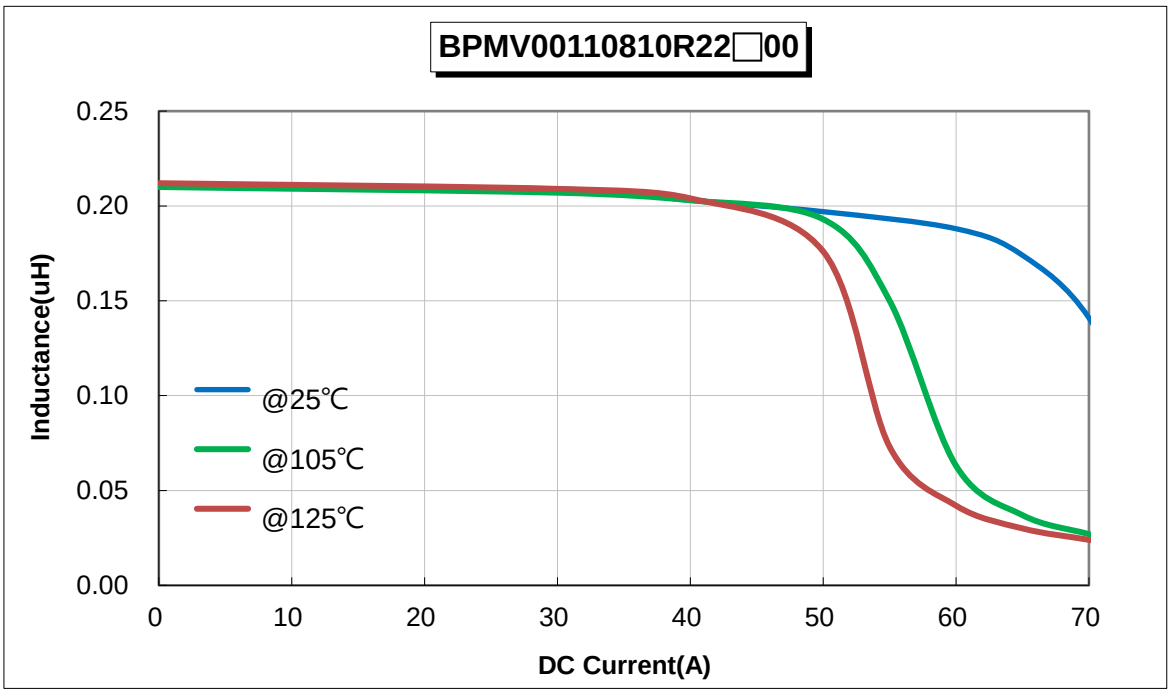
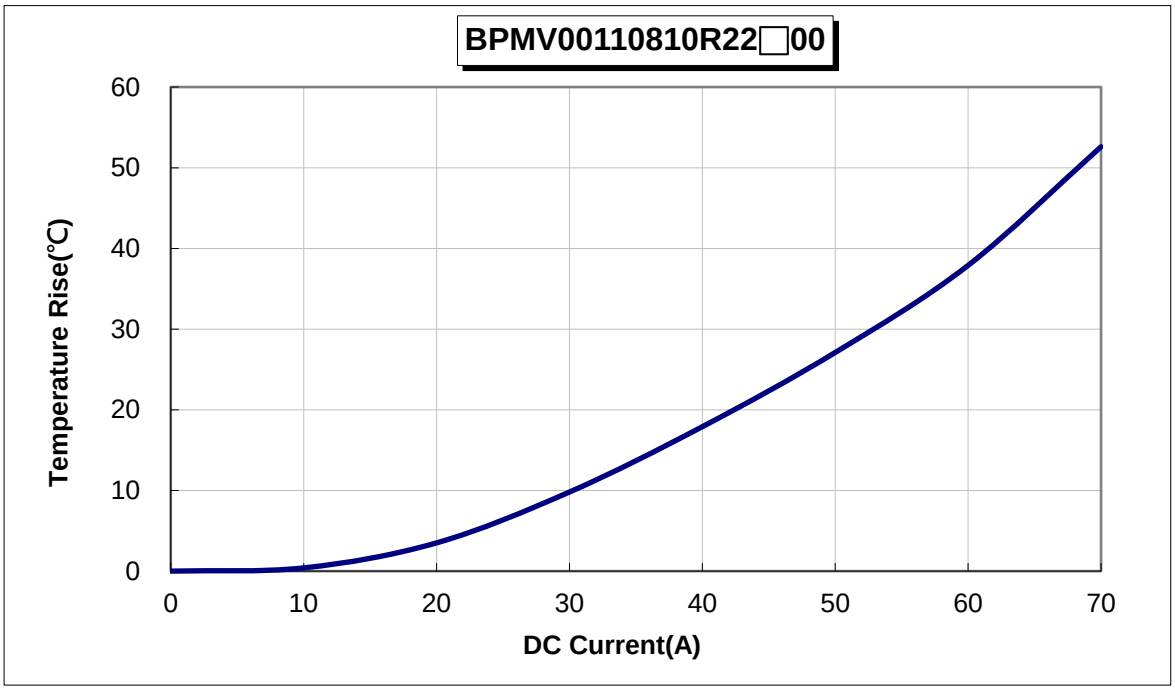
INDUCTANCE vs. DC CURRENT@100KHz/1.0V



TEMPERATURE vs. DC CURRENT



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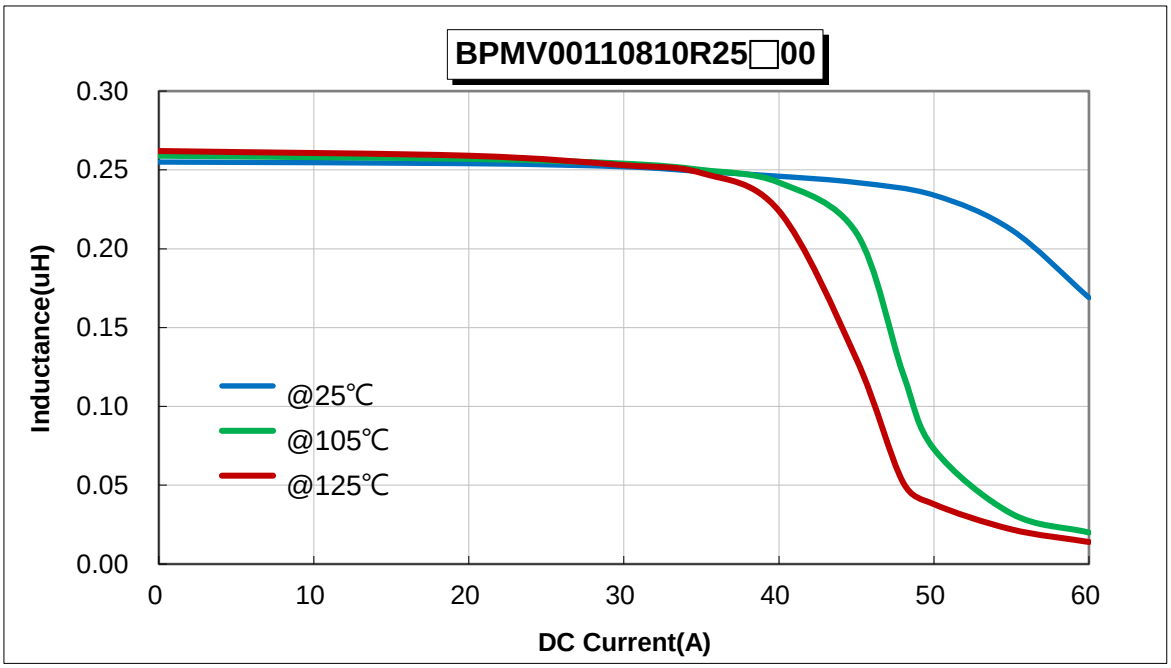
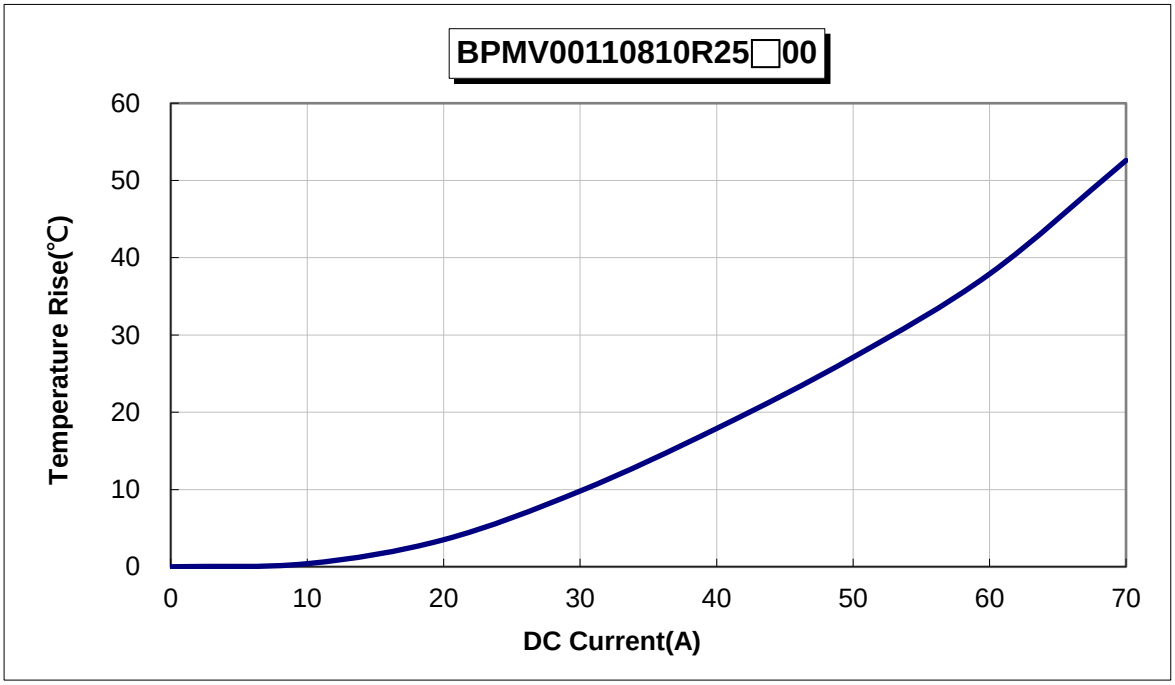


TEMPERATURE vs. DC CURRENT



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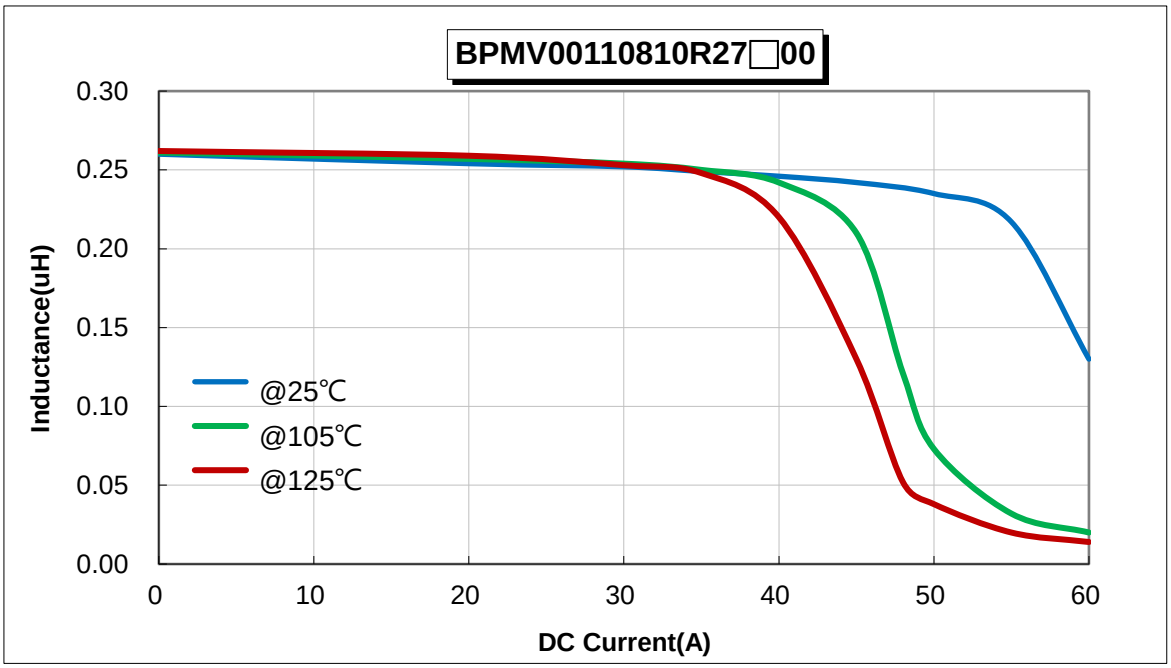
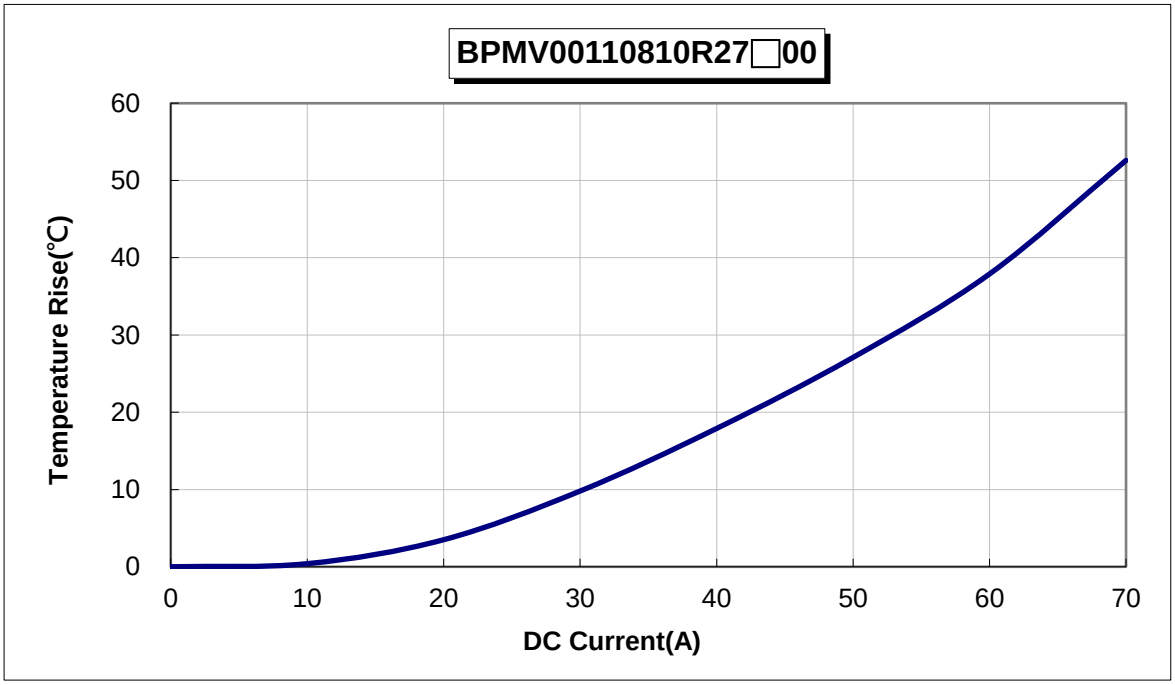


TEMPERATURE vs. DC CURRENT



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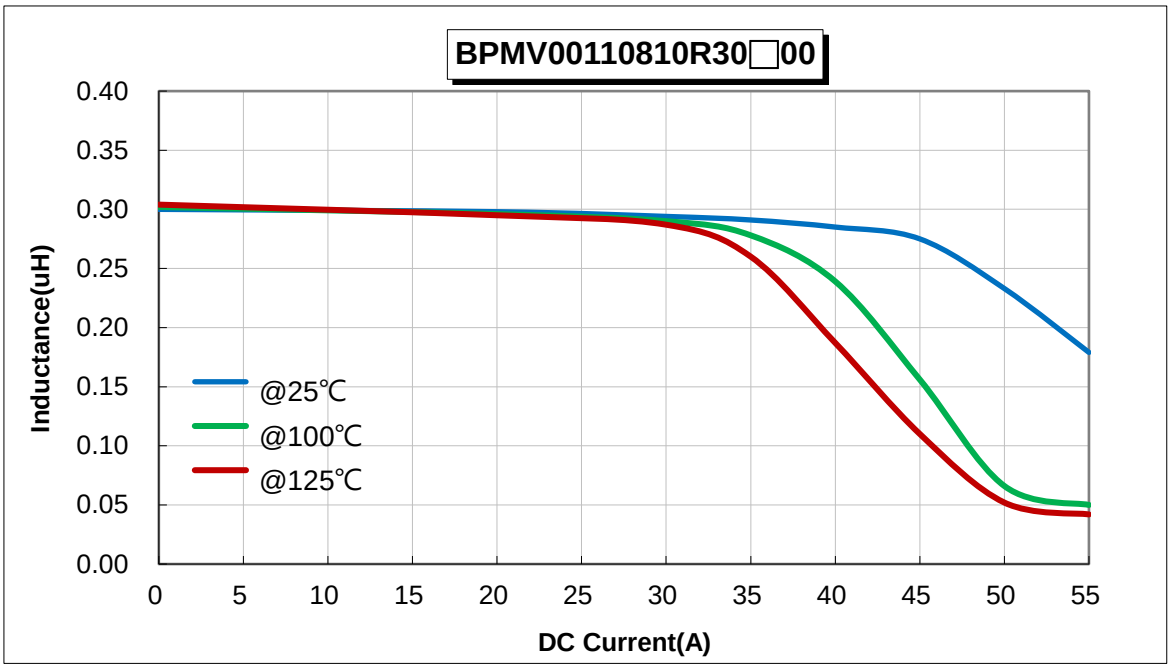

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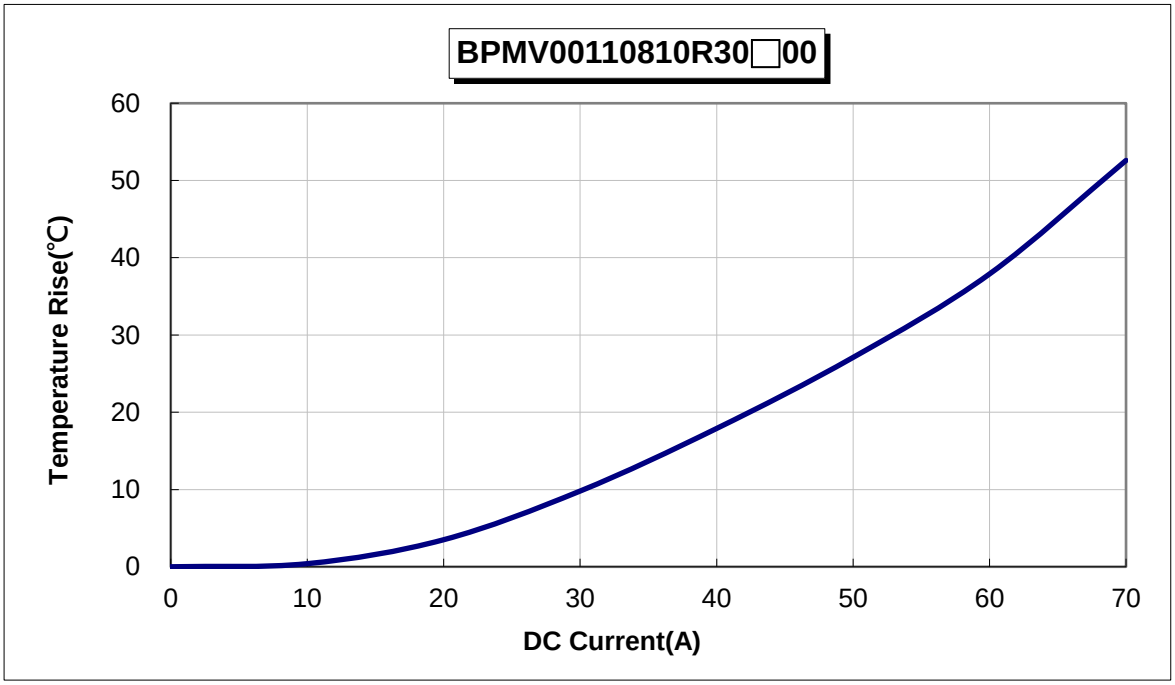

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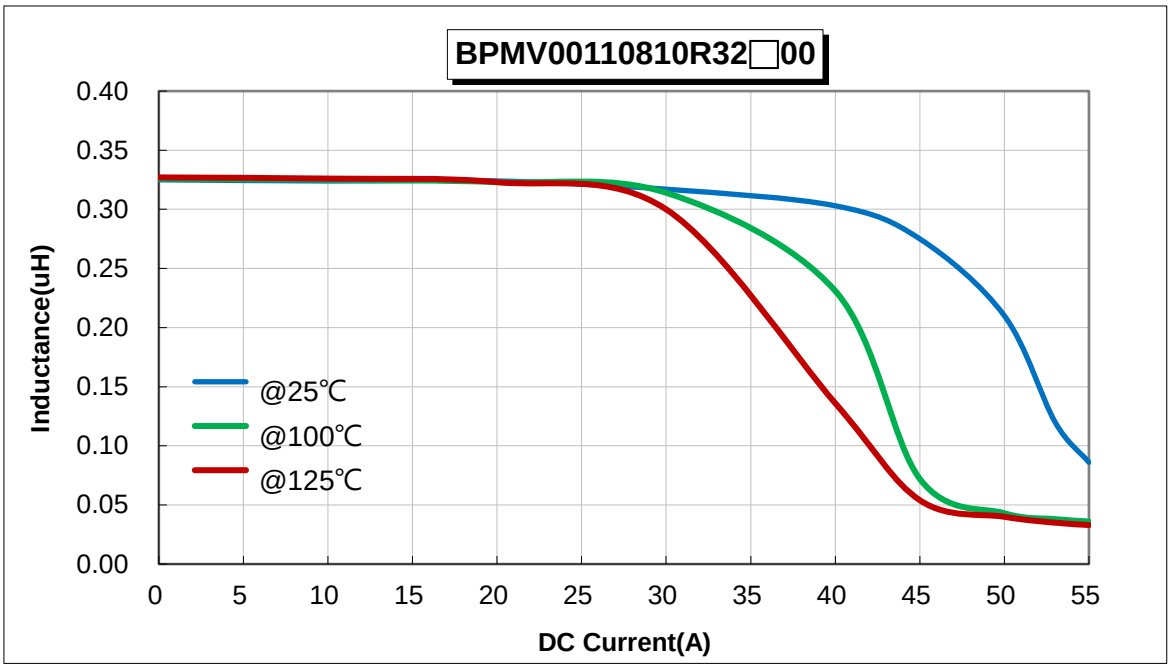

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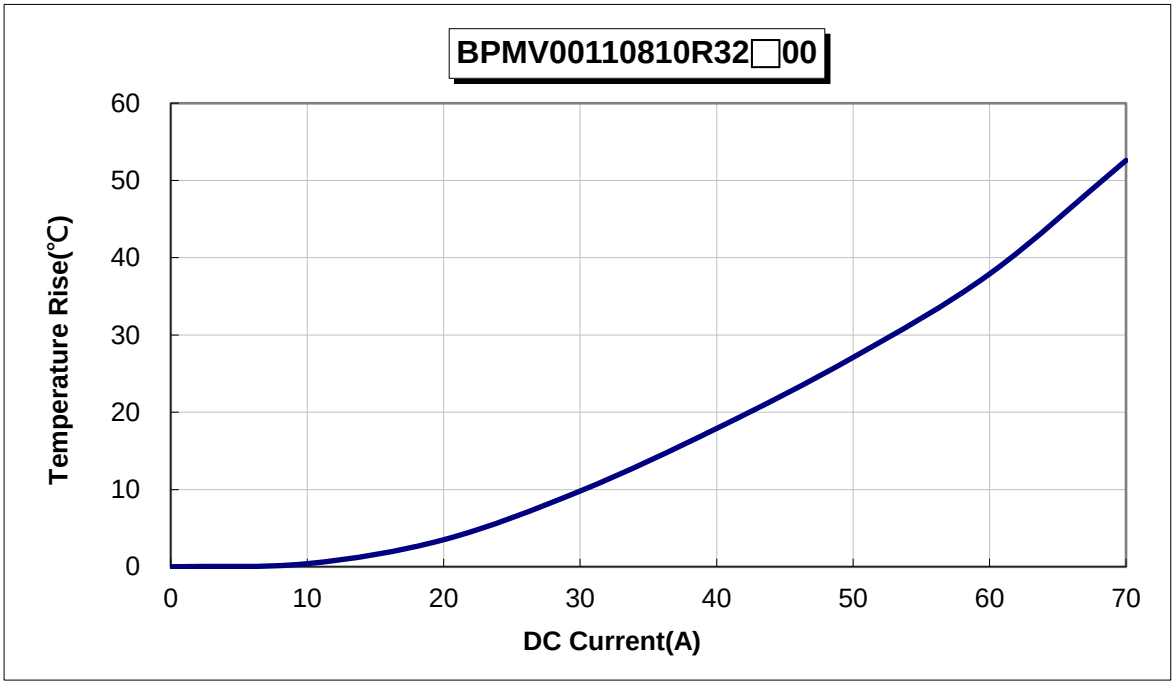

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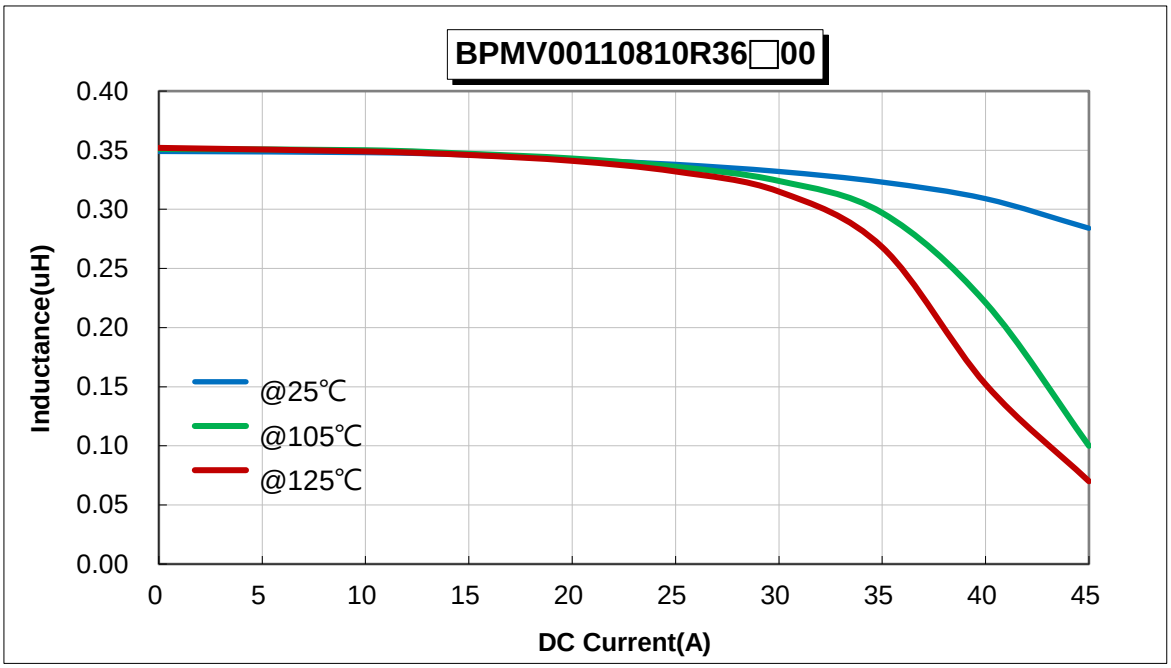

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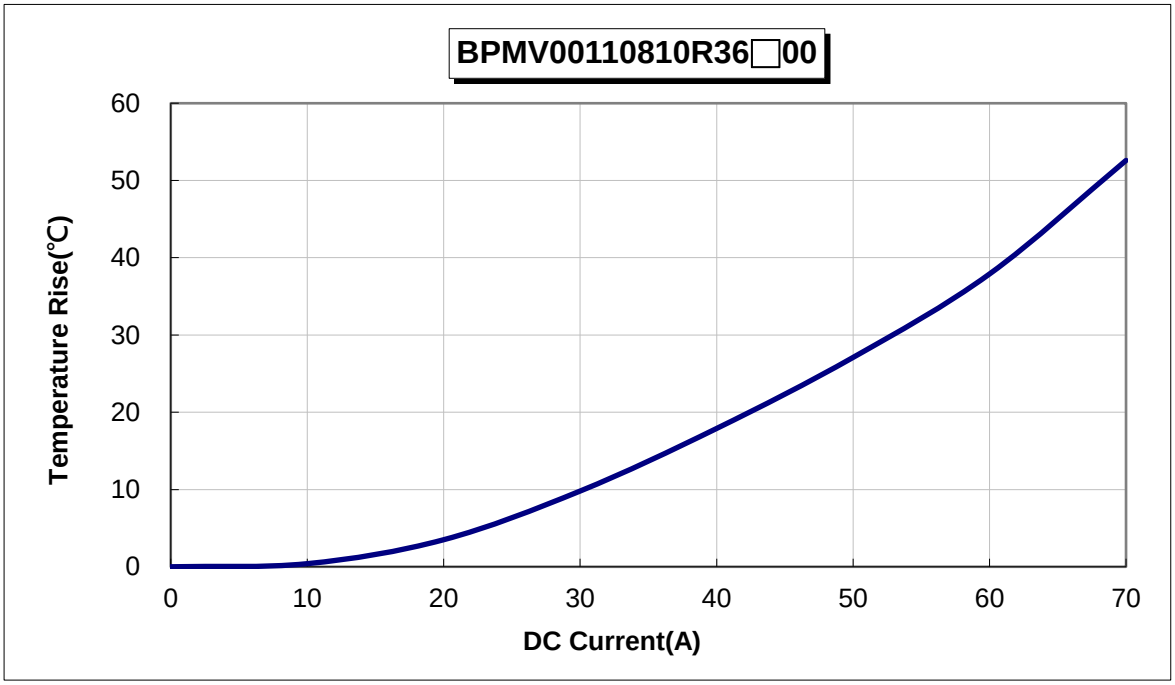

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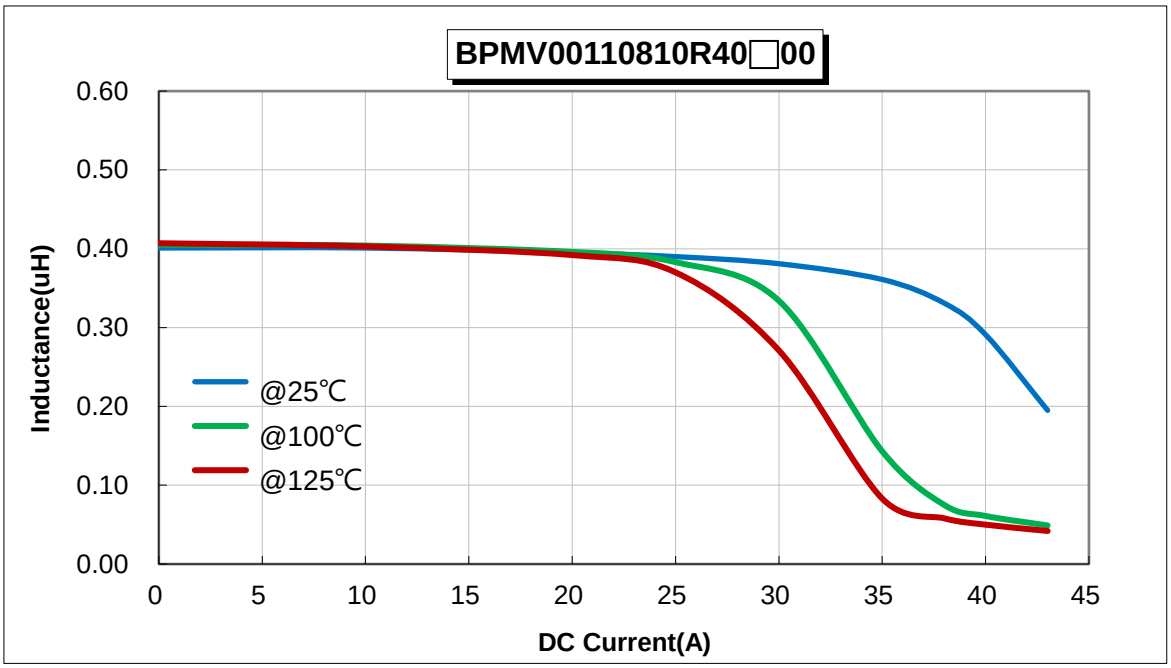

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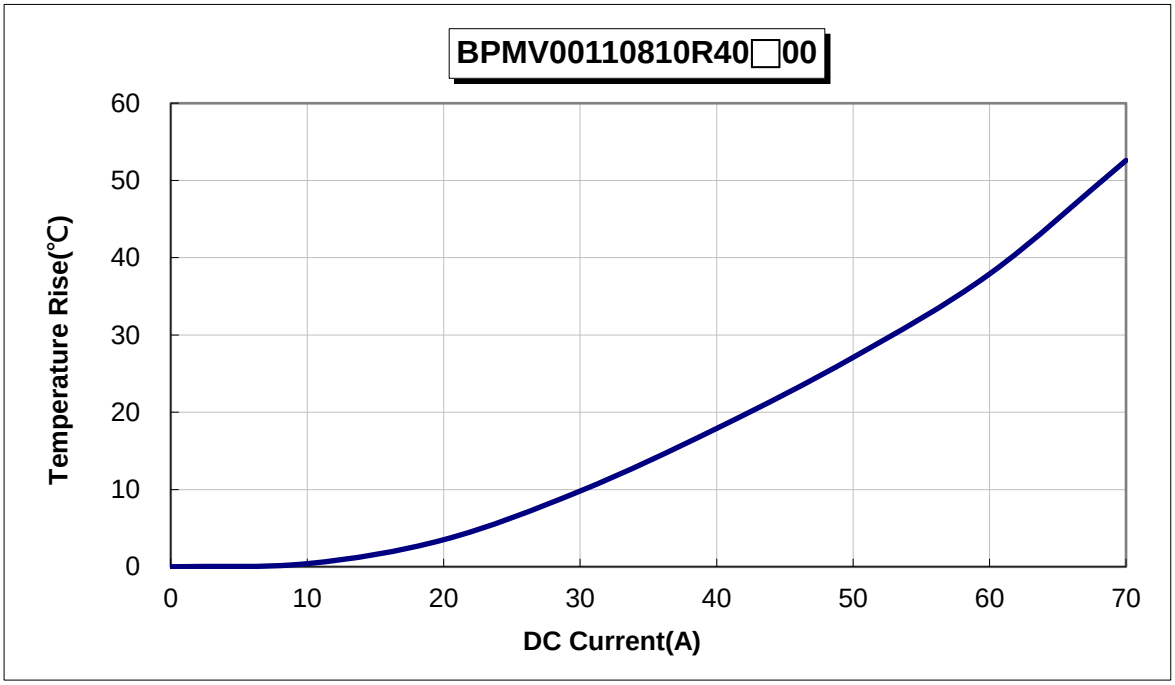

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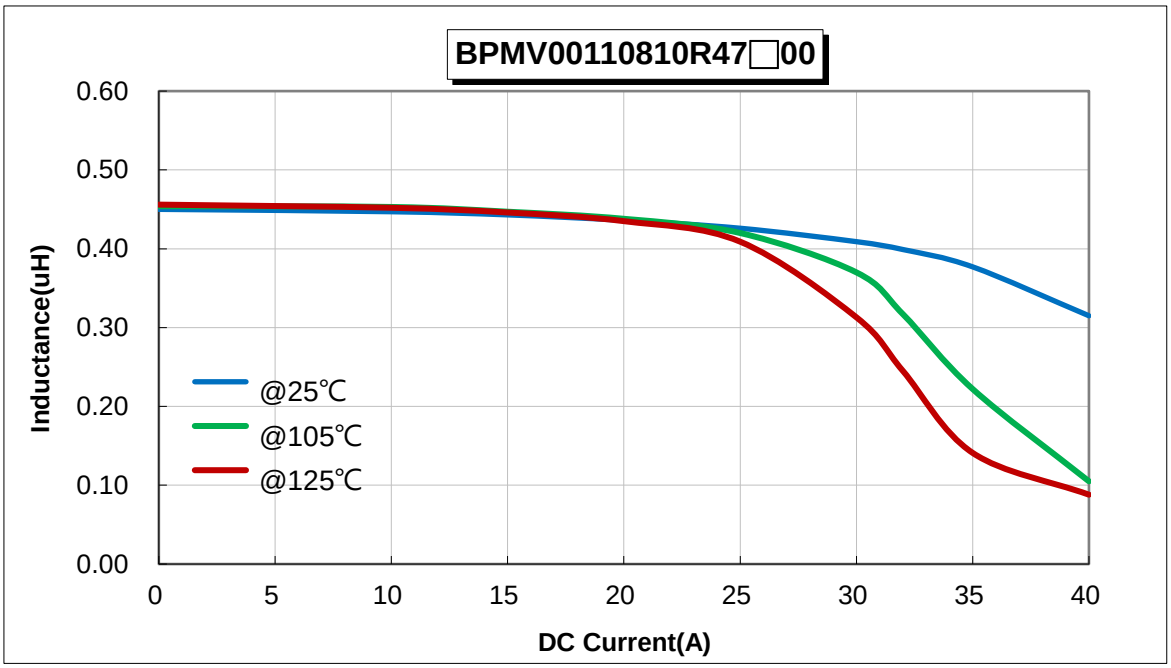

TEMPERATURE vs. DC CURRENT