

Power Inductor



BPMS 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

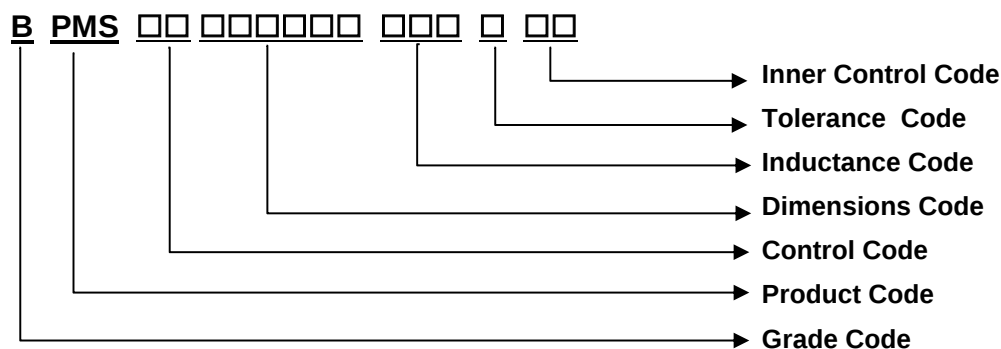
Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BPMS	10.0	4.4	6.0	0.05, 0.08



BPMS00100460 Series Specification

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

2 Part Numbering:



3 Rating:

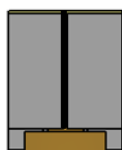
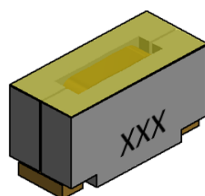
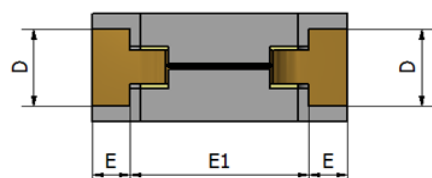
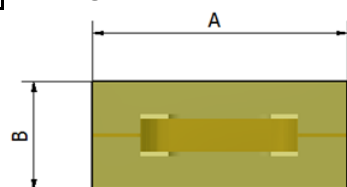
Operating Temperature: $-40^{\circ}\text{C} \sim 125^{\circ}\text{C}$ (Including self - temperature rise)

Storage Temperature: (on tape & reel): -20°C to $+40^{\circ}\text{C}$; 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: 10.0 ± 0.2	mm
B: 4.4 ± 0.2	mm
4.4 ± 0.3 (For 50N)	mm
C: 6.0 Max.	mm
D: 3.20 Typ.	mm
E: 1.50 Typ.	mm
E1: 7.00 Typ.	mm

Marking XXX

Marking color:Black

Net Weight (grms)

SIZE CODE	Net Weight (grms)
100460	1.57(Typ.)

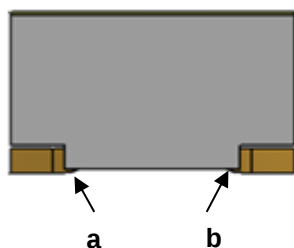
BPMS00100460 Series Specification

6 Electrical Characteristics:

Part No.	Inductance L(nH)	Resistance RDC(mΩ)	Rated DC Current		Tolerance	Marking
			Isat1(A)	Irms(A)		
BPMS0010046050N□VE	50	0.25 Max.	120	60	K,L,M	50N
BPMS0010046070N□VE	70	0.23 ±10%	104	70	K,L,M	70N
BPMS0010046080N□VE	80	0.25 Max.	90	45	K,L,M	80N

RDC TEST POINT

The nominal DCR is measured from point "a" to point "b" .



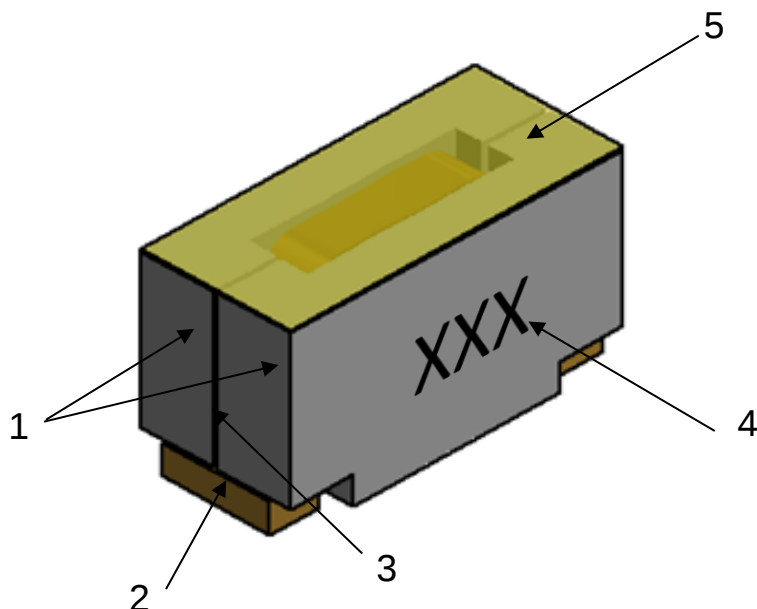
Test Frequency:100kHz/1.0V

NOTE: tolerance K=±10% , L=±15% ,M=±20%

- Isat : Based on inductance change ($\Delta L/L_0$: drop 20% Typ.)@ ambient temp. 25°C
Isat : Based on inductance change ($\Delta L/L_0$: drop 30% Typ.)@ ambient temp. 25°C(For 50N□VE)
- 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	Sinter Alloy Core
2	CLIP	COPPER FOIL
3	ADHESIVE	EPOXY RESIN
4	INK	Ink(Black)
5	Mylar	Polyester Film

BPMS00100460 Series Specification

Mechanical performance test

TEST ITEM	SPECIFICATION	TEST DETAILS
Bending	Change from an initial value Inductance: within $\pm 10\%$	Apply pressure gradually in the direction of the arrow at a rate of about 0.5mm/s until bent depth reaches 2mm and hold for 30 sec. Boad : 40*100mm , thickness: 1mm
Adhesion strength	Change from an initial value Inductance: within $\pm 10\%$	A static load using a R0.5 pressing tool shall be applied to the body of the specimen in the direction of the arrow and shall be hold for 60 $\pm$ 5 sec. Mesure after removing pressure.
Vibration	Change from an initial value Inductance: within $\pm 10\%$	The specimen shall be subjected to a vibration of 1.5mm amplitude, sweep frequency 10~55Hz(10Hz to 55Hz to 10Hz in aperiod of one minute) for 2hr in each of 3(X,Y,Z) axes.
Mechanical shock	Change from an initial value Inductance: within $\pm 10\%$	Dropped onto printed circuit board from 100cm height three times in x, y, z directions. The terminals shall be protected.
Solderability	New solder shall cover 90% minimum of the surface immersed.	Electrode shall be immersed in flux at room temperature and then shall be immersed in solder bath after preheat. Preheat 160 $\pm$ 10 $^{\circ}$ C , 90 sec Soldering 245 $\pm$ 5 $^{\circ}$ C , 3 $\pm$ 1 sec
Resistance to soldering heat	Change from an initial value Inductance: within $\pm 10\%$	Reflow soldering method Preheat 150~180 $^{\circ}$ C , 90~120sec Peak temp. 260 $^{\circ}$ C (230 $^{\circ}$ C over 30~40 Sec.) The specimen shall be subjected to the reflow process under the above condition 3 times. Test board shall be 0.8mm thick. Base material shall be glass epoxy resin. Resistance to Solder Heat – Solder Iron Method MIL-STD-883, Method 2036.1 Condition A: 350 $^{\circ}$ C, 4-5 seconds In this method a solder iron tip is applied to the terminals of the inductors for indicated time and temperature

BPMS00100460 Series Specification

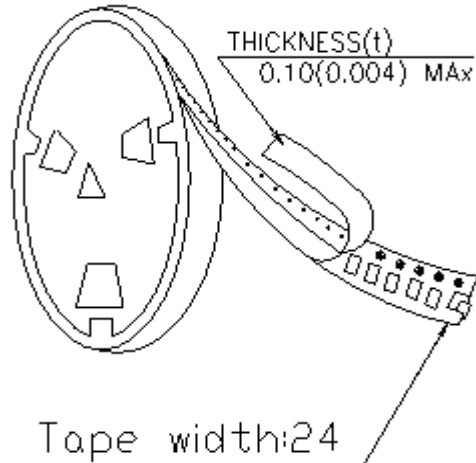
Climatic test

TEST ITEM	SPECIFICATION	TEST DETAILS
Low temperature	Change from an initial value Inductance: within $\pm 10\%$	The specimen shall be stored at a temperature of $-40\pm 3^{\circ}\text{C}$ for 96hr. then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. measurement shall be made within 1hr.
Dry heat	Change from an initial value Inductance: within $\pm 10\%$	The specimen shall be stored at a temperature of $85\pm 3^{\circ}\text{C}$ for 96hr. then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. measurement shall be made within 1hr.
Dump heat	Change from an initial value Inductance: within $\pm 10\%$	The specimen shall be stored at a temperature of $60\pm 3^{\circ}\text{C}$ with relative humidity of 90~95% for 96h. Then it shall be stabilized under standard atmospheric conditions for 1hr before measurement. Measurement shall be made within 1hr.
Temperature cycle	Change from an initial value Inductance: within $\pm 10\%$	The specimen shall be subjected to 10 continuous cycles of temperature change of -40°C for 30 min and $+155^{\circ}\text{C}$ for 30 min with the transit period of 2 min or less. Then it shall be stabilized under standard atmospheric conditions for 1hr before measurement.

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7 Packaging:

7.1 Packaging -Cover Tape

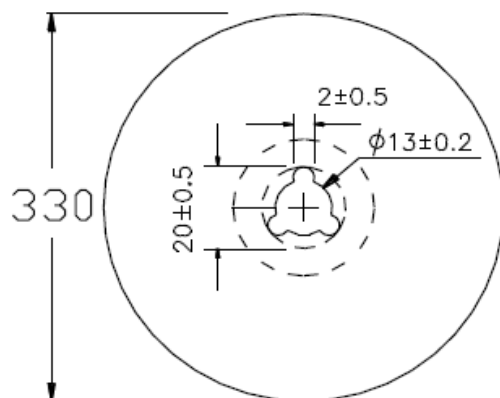


7.2 Packaging Quantity

TYPE	PCS/REEL
BPMS00100460	750

7.3 Reel Dimensions

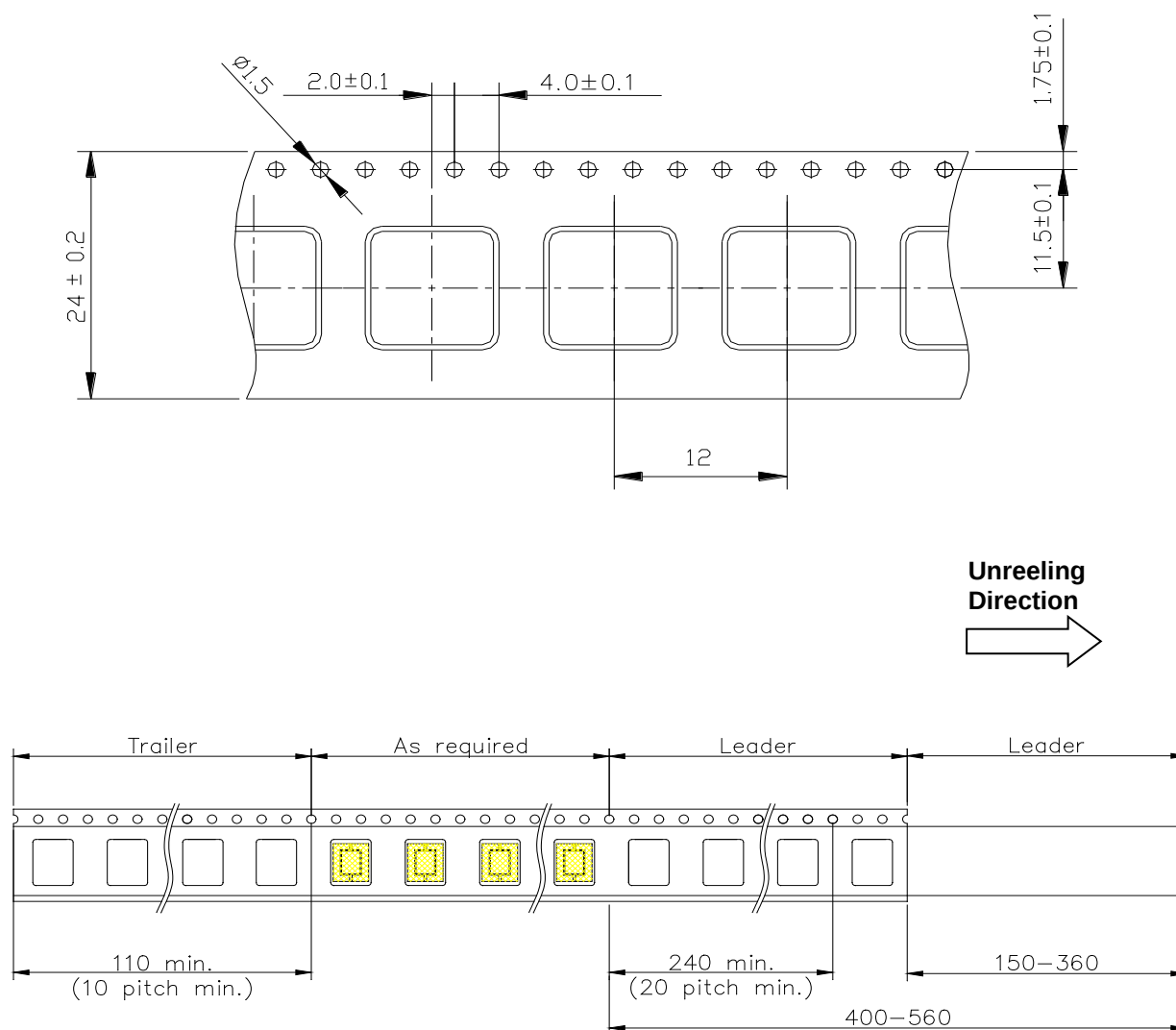
Unit : mm



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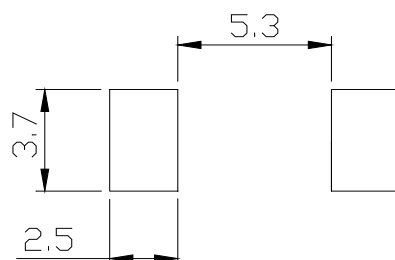
7 Packaging:

7.4 Tape Dimensions in mm



8 Recommended Land Pattern:

(STANDARD PATTERN) Unit : mm



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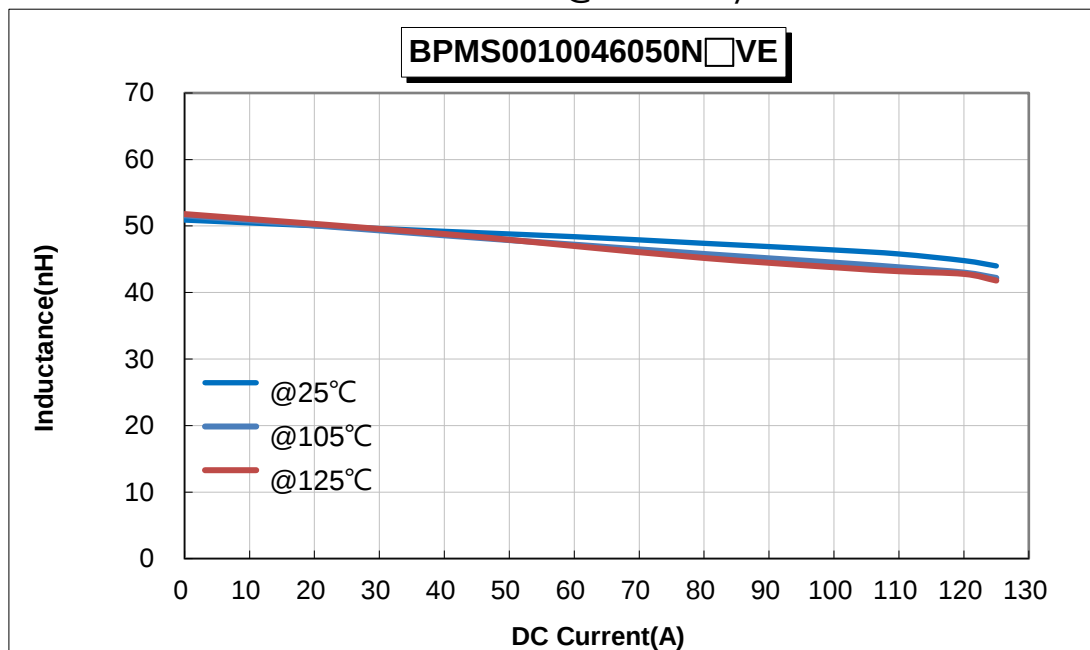
9 Note:

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.
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.

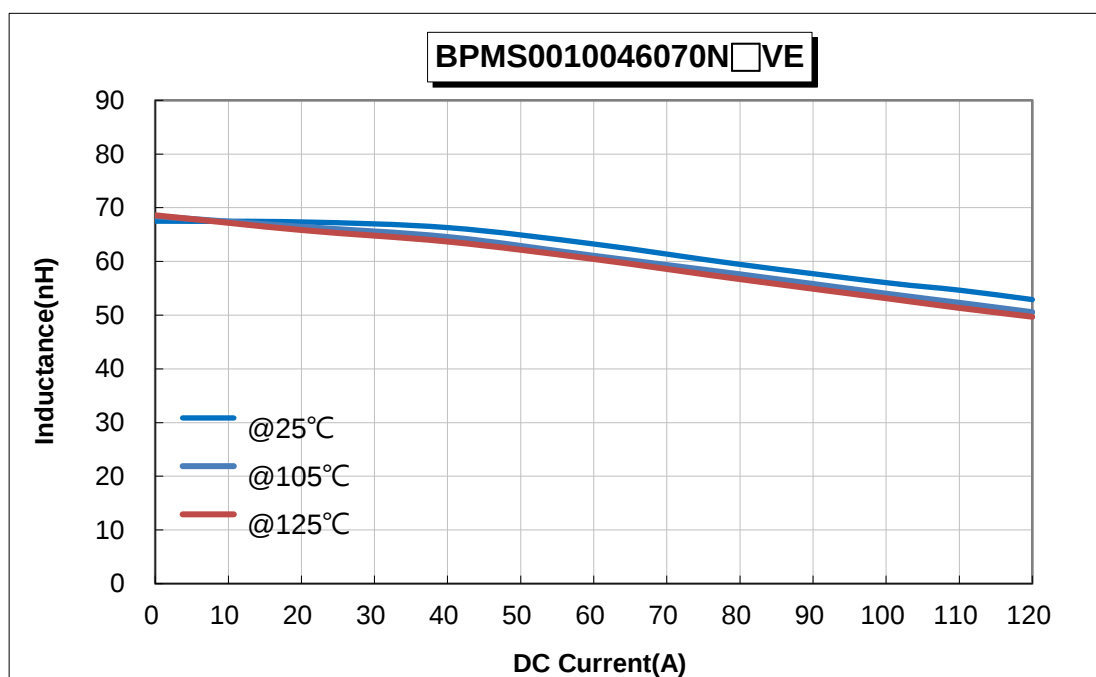
BPMS00100460 Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/1V



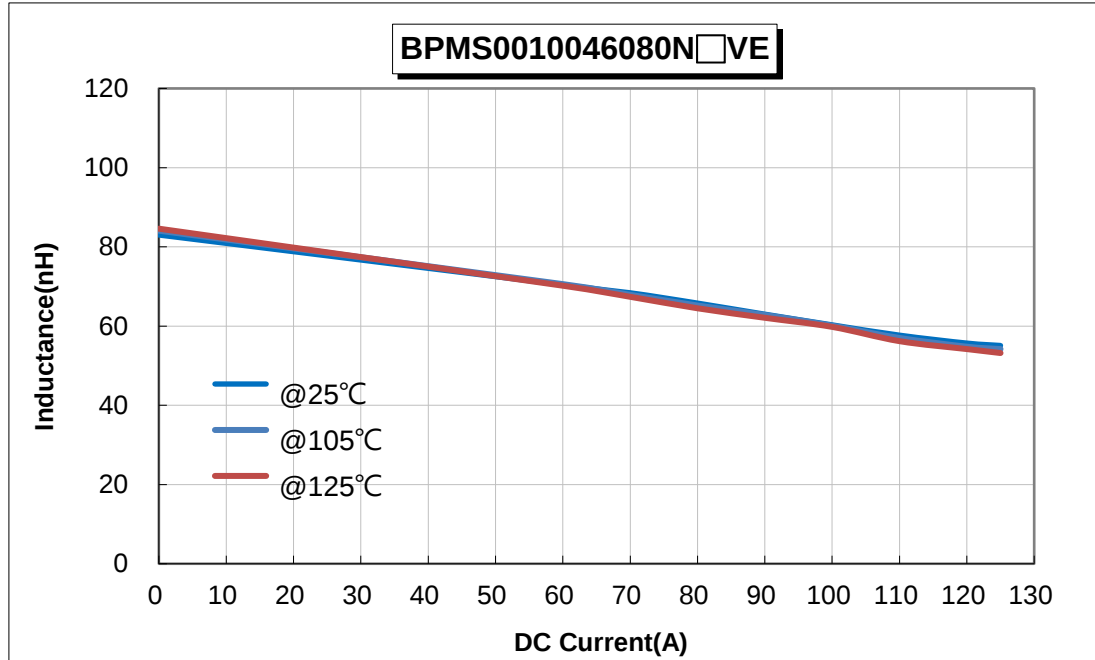
INDUCTANCE vs. DC CURRENT@100KHz/0.1V



BPMS00100460 Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

INDUCTANCE vs. DC CURRENT@100KHz/1V



BPMS00100460 Series Specification

TYPICAL ELECTRICAL CHARACTERISTICS

TEMPERATURE vs. DC CURRENT

