Power Inductor

BEBE Series

Overview

The BEBE Series is designed specifically to enhance the performance of both PFM and PWM applications. The Rac value at light load and the DCR value at heavy load are both exceptional.
Furthermore, the saturated current performance is also optimal, helping to reduce the ripple current and enhance the efficiency.

Benefits

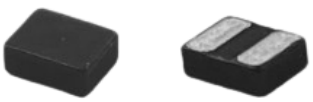
1. High performance (Isat) realized by metal dust core
2. Low coil resistance with large currents.

Applications

1. Smartphones, wearable devices, Pad, Notebook

Product Information

Series	L (mm)	W(mm)	T (mm)	Inductance (μH)
BEBE	1.4	1.2	0.65	0.08 ~ 2.2
	1.4	1.2	0.8	
	2.0	1.2	0.8	
	2.0	1.2	1.0	
	2.0	1.2	1.2	
	2.5	2.0	1.0	
	2.5	2.0	1.2	
	3.2	2.5	0.8	
	3.2	2.5	1.0	

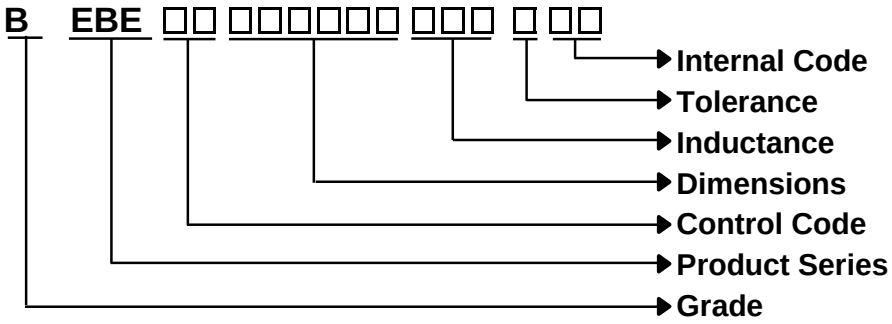


BEBE00141208 Series Specification

1 Scope

This specification applies to large current and low loss SMD power inductor

2 Part numbering



3 Temperature rating

Operating Temperature: - 55°C~125°C

Storage Temperature: (on tape & reel): -20°C to +40°C; 75% RH max.

4 Marking

No Marking

5 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

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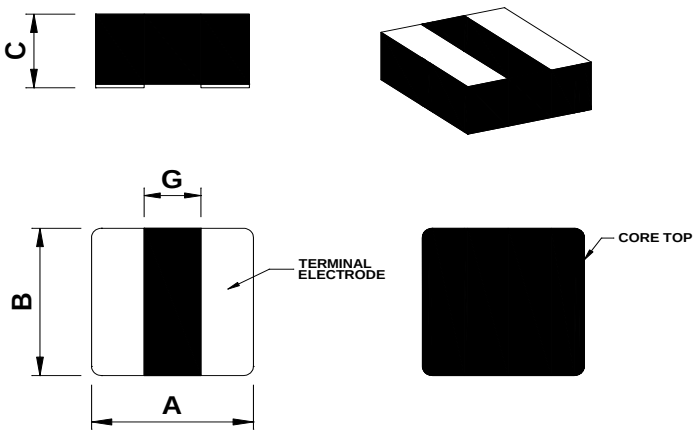
6 Configuration and dimensions



Dimensions in mm

Type	141208
A	1.4 ± 0.2
B	1.2 ± 0.2
C	0.8 Max
G	0.53 Typ

Size Code	Net Weight(Grams)
141208	0.01 Typ

7 Electrical characteristics

Part number	Inductance (μH)	Tolerance (±%)	Test Freq.	Irms(A) Max.(Typ.)	Isat(A) Max.(Typ.)	RDC(mΩ) Max.(Typ.)
BEBE00141208R24MMA	0.24	20	1MHz,1V	5.3(5.8)	6.5(7.1)	21.5(18.0)
BEBE00141208R33MMA	0.33	20	1MHz,1V	3.6(4.0)	4.5(5.0)	25.0(23.0)
BEBE00141208R47MMA	0.47	20	1MHz,1V	3.0(3.3)	4.0(4.5)	30.0(28.0)
BEBE001412081R0MMA	1.00	20	1MHz,1V	2.3(2.6)	2.5(2.8)	77.0(70.0)
BEBE00141208R33MMS	0.33	20	1MHz,1V	3.6(4.0)	5.5(5.7)	25.0(23.0)
BEBE00141208R47MMS	0.47	20	1MHz,1V	3.0(3.3)	4.8(5.0)	30.0(28.0)

Note:

1.Operating temperature range -55°C to 125°C.

2.Isat for Inductance drop 30% from its value without current.

3.Irms for a 40°C temperature rise from 25°C ambient.

4.The part temperature (ambient + temp rise) should not exceed 125°C under worst case operating conditions.
Circuit design 125°C under worst case operating conditions. Component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

5.Absolute maximum voltage 15V DC. (Based on test method, it may not the sameunder different application, it is recommended to verify first.)

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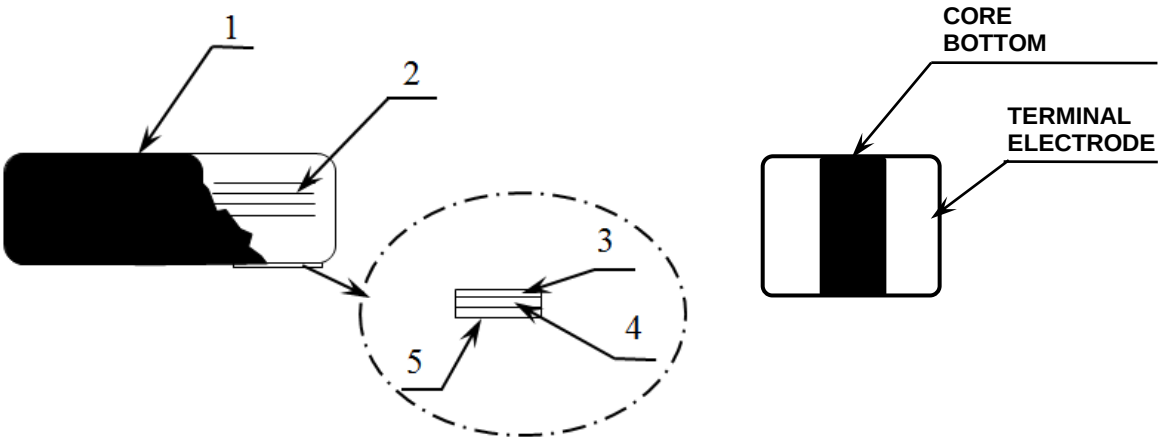
8.1 Construction



8.2 Material list

Item	Part	Description
1	Magnetic core	Magnetic metal powder
2	Coil	Enameled copper wire
3	Plating	Cu
4	Plating	Ni
5	Plating	Sn

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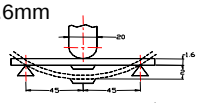
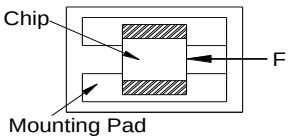
9 Reliability test items

9-1.Mechanical Performance

No	Item	Specification	Test Method
9-1-1	Flexure Strength	The forces applied on the right conditions must not damage the terminal electrode and the metal body	Test device shall be soldered on the substrate Substrate Dimension: 100x40x1.6mm Deflection: 2.0mm Keeping Time: 30sec 
9-1-2	Vibration	Appearance:No damage (for microscope of CASTOR MZ-45 20X) Inductance change shall be within ±20%	Test device shall be soldered on the substrate Oscillation Frequency: 10 to 55 to 10Hz for 1min Amplitude: 1.5mm Time: 2hrs for each axis (X, Y & Z), total 6hrs
9-1-3	Resistance to Soldering Heat	Appearance: No damage More than 75% of the terminal. electrode should be covered with solder. Inductance: within ±20% of initial value	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 260±5℃ Immersion Time: 10±1sec
9-1-4	Solder ability	The electrodes shall be at least 95% covered with new solder coating	Pre-heating: 150℃, 1min Solder Composition: Sn/Ag3.0/Cu0.5(Pb-Free) Solder Temperature: 245±5℃ Immersion Time: 4±1sec
9-1-5	Terminal Strength Test	No split termination 	Test device shall be soldered on the substrate, then apply a force in the direction of the arrow. Force : 5N Keeping Time: 10±1sec

9-2.Environmental Performance

No	Item	Specification	Test Method
9-2-1	Temperature Cycle	Appearance: No damage Inductance:within±20% of initial value	One cycle: Step / Temperature (℃) / Time (min) 1 / -55±3 / 30 2 / 25±2 / 3 3 / 125±3 / 30 4 / 25±2 / 3 Total: 100cycles Measured after exposure in the room condition for 24hrs
9-2-2	Humidity Resistance		Temperature: 60±2℃ Relative Humidity: 90 ~ 95% / Time: 500hrs Measured after exposure in the room condition for 24hrs
9-2-3	High Temperature Resistance		Temperature: 85±3℃ Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 24hrs
9-2-4	Low Temperature Resistance		Temperature: -55±3°C Relative Humidity: 0% / Time: 500hrs Measured after exposure in the room condition for 24hrs

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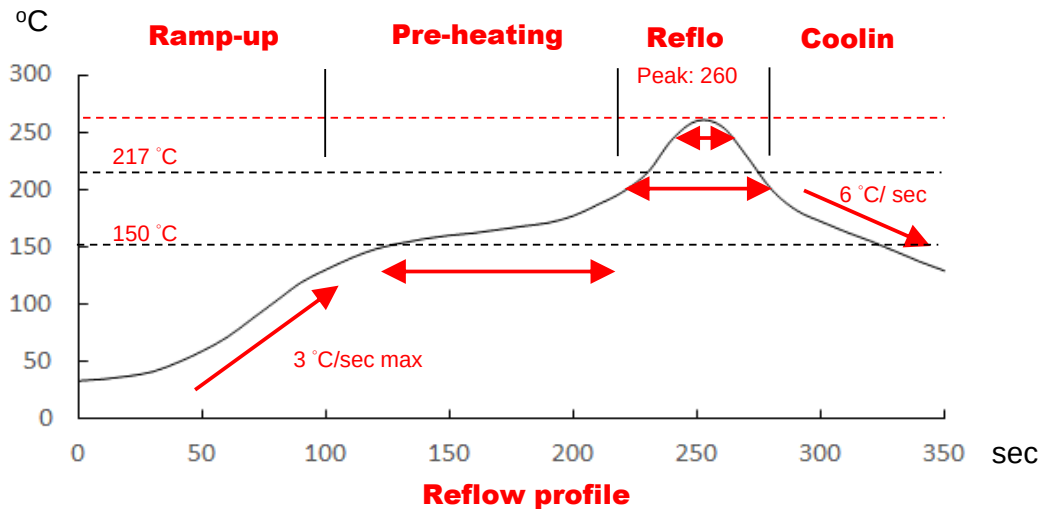
10 Recommended IR reflow profile



Lead-Free(LF) Refer to J-STD-020F

Item	Ramp-up	Pre-heating	Reflow	Peak Temp.	Cooling
Temp. scope	R.T. ~150 °C	150 °C~200 °C	217 °C	260±5 °C	Peak Temp. 150 °C
Time spec	-	60~120 sec	60~150 sec	20~40 sec	-

Note:

1. IR reflow times: within 3 times.
2. Nitrogen adopted is recommended while in IR reflow.

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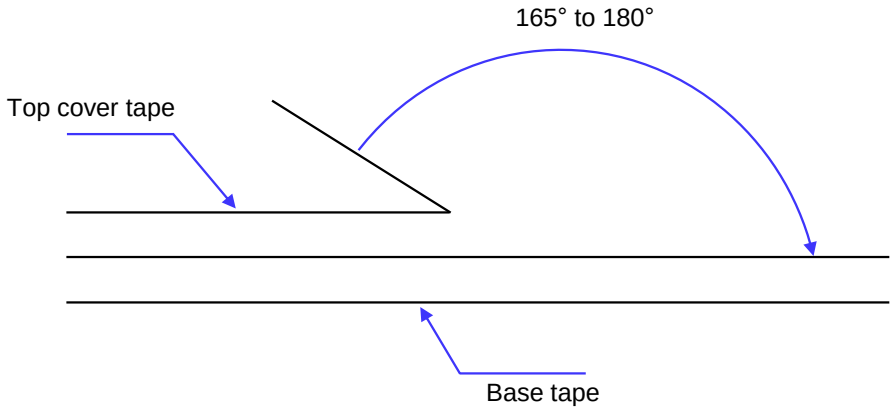
11 Packaging

11.1 Packaging- cover tape

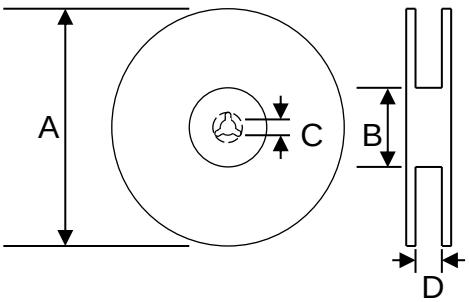
The force for tearing off cover tape is 10 to 130 grams.



11.2 Packaging quantity

Type	Pcs/Reel
141208	3000

11.3 Reel dimensions



Dimensions in mm

Type	A	B	C	D
141208	178	60	13	8

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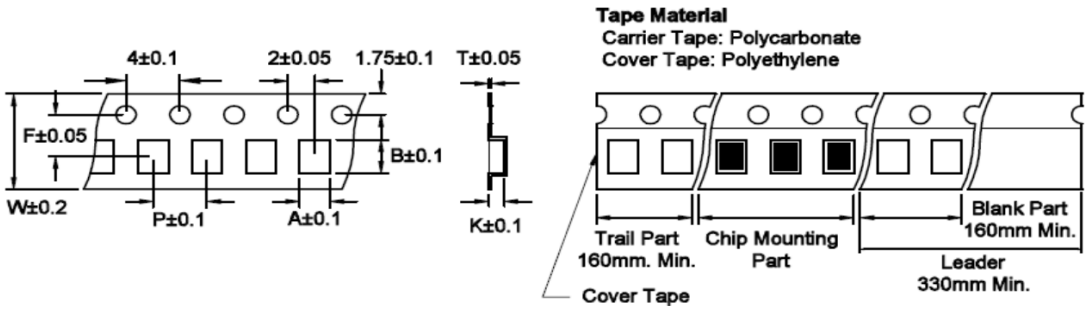
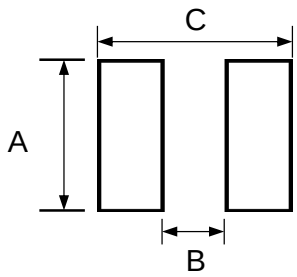
11 Packaging

11.4 Tape dimensions in mm



Type	A	B	T	W	P	F	K
141208	1.52	1.72	0.20	8.00	4.00	3.50	1.00

12 Recommended pattern



Dimensions in mm

Type	A	B	C
141208	1.4	0.5	1.6

13 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. Don’t design/mount any components in contact with this product
3. The moisture sensitivity level (MSL) of products is classified as level 1.
4. Shelf life: 1years from the date of shipment.

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