

## I . SCOPE :

This specification applies to the Pb Free Ferrite Chip Beads for  
SMB-403025

### PRODUCT IDENTIFICATION

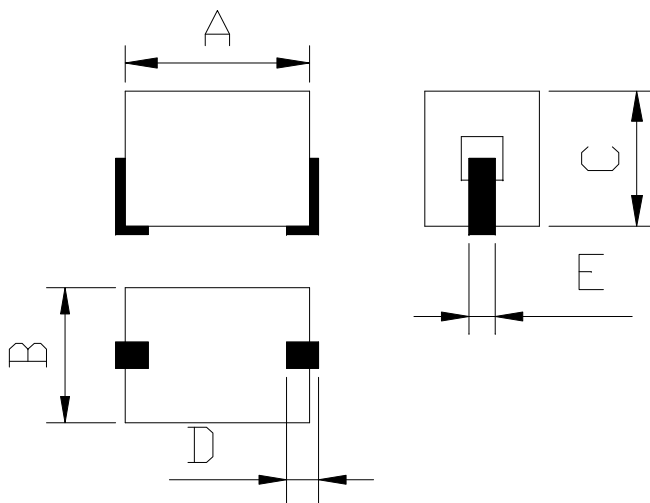
**SMB - 403025**

① ②

① Product Code

② Dimensions Code

### (1) SHAPES AND DIMENSIONS



A: 4.00±0.20 mm

B: 3.10±0.15 mm

C: 2.54±0.15 mm

D: 1.50±0.50 mm

E: 1.25 Typ. mm

### (2) ELECTRICAL SPECIFICATIONS SEE TABLE 1

#### TEST INSTRUMENTS

Z : HP 4291B IMPEDANCE ANALYER (or equivalent)

RDC : CHROMA MODEL 16502 MILLIOHMMETER (or equivalent)

### (3) CHARACTERISTICS

(3)-1 Temperature rise ..... +40°C Max.

(3)-2 Ambient temperature ..... +60°C Max.

(3)-3 Operate temperature range ..... -40°C ~ +105°C

(Including self temp. rise)

(3)-4 Storage temperature range ..... -40°C ~ +105°C



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**TABLE 1**

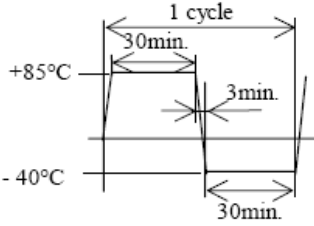
MAGLAYERS PT/NO.	IMPEDANCE ( $\Omega$ )		DCR(m $\Omega$ ) Max.
	At 25MHz/0.5V	At 100MHz/0.5V	
SMB-403025	30 $\pm$ 25%	47 $\pm$ 25%	0.6



## (4) RELIABILITY TEST METHOD MECHANICAL

TEST ITEM	SPECIFICATION	TEST DETAILS
Solder ability	The product shall be connected to the test circuit board by the fillet (the height is 0.2mm).	Apply cream solder to the printed circuit board . Refer to clause 8 for Reflow profile.
Resistance to Soldering heat (reflow soldering)	There shall be no damage or problems.	<p>Temperature profile of reflow soldering</p> <p>The specimen shall be passed through the reflow oven with the condition shown in the above profile for 1 time.</p> <p>The specimen shall be stored at standard atmospheric conditions for 1 hour, after which the measurement shall be made.</p>
Terminal strength	The terminal electrode and the ferrite must not be damaged.	<p>Solder a chip to test substrate , and then laterally apply a load 9.8N in the arrow direction.</p>
Strength on PC board bending	The terminal electrode and the ferrite must not be damaged.	<p>Solder a chip to test substrate and then apply a load.</p> <p>Test board:FR4 100×40×1mm Fall speed:1mm/sec. Dimensions in mm</p>
High temperature resistance	<p>Impedance:Within±20% of the initial value.</p> <p>Insulation resistance and DC resistance on the specification(refer to clause 2-1) shall be met.</p> <p>not damaged.</p>	<p>After the samples shall be soldered onto the test circuit board,the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : +85±2°C</p> <p>Applied current : Rated current</p> <p>Testing time : 500±12 hours</p>

## MECHANICAL

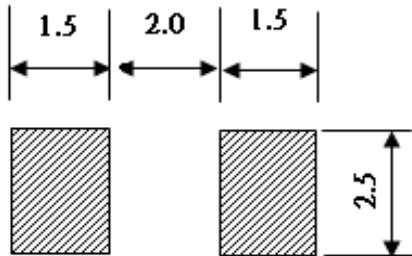
TEST ITEM	SPECIFICATION	TEST DETAILS
Humidity resistance	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : <math>+60 \pm 2^\circ\text{C}</math> , Humidity : 90 to 95 %RH</p> <p>Applied voltage : Rated voltage</p> <p>Applied current : Rated current</p> <p>Testing time : <math>500 \pm 12</math> hours</p>
Thermal shock	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	 <p>Testing time : 100 cycle</p>
Low temperature storage	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Measurement : After placing for 24 hours min.</p> <p>Temperature : <math>-40 \pm 2^\circ\text{C}</math></p> <p>Testing time : <math>500 \pm 12</math> hours</p>
Vibration	<p>Impedance: Within <math>\pm 20\%</math> of the initial value.</p> <p>Insulation resistance and DC resistance on the specification (refer to clause 2-1) shall be met.</p> <p>The terminal electrode and the ferrite must not be damaged.</p>	<p>After the samples shall be soldered onto the test circuit board, the test shall be done.</p> <p>Frequency : 10 to 55 Hz</p> <p>Amplitude : 1.52 mm</p> <p>Dimension and times : X , Y and Z directions for 2 hours each.</p>
Solderability	<p>New solder More than 75%</p>	<p>Flux (rosin, isopropyl alcohol (JIS-K-1522)) shall be coated over the whole of the sample before hand, the sample shall then be preheated for about 2 minutes in a temperature of <math>130 \sim 150^\circ\text{C}</math> and after it has been immersed to a depth 0.5mm below for <math>3 \pm 0.2</math> seconds fully in molten solder M705 with a temperature of <math>245 \pm 2^\circ\text{C}</math>.</p> <p>shall be covered with new solder smoothly when the sample is taken out of the solder bath.</p>

## (5) LAND DIMENSION (Ref.)

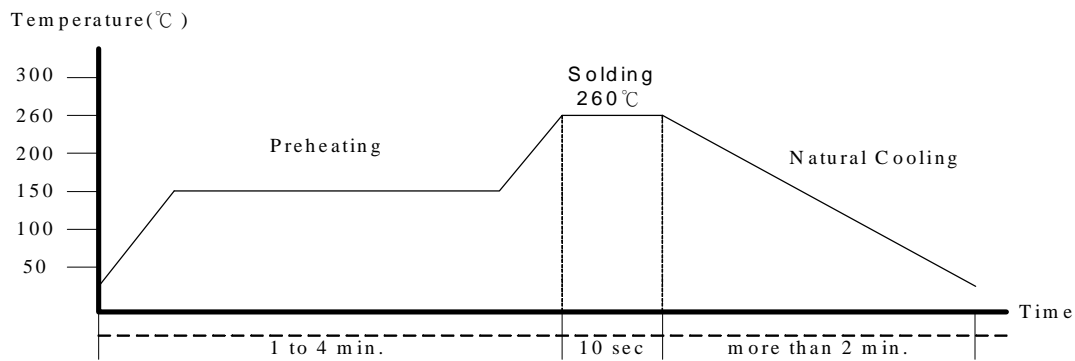
PCB: GLASS EPOXY t=1.6mm

### (5)-1 LAND PATTERN DIMENSIONS

(STANDARD PATTERN) unit : mm

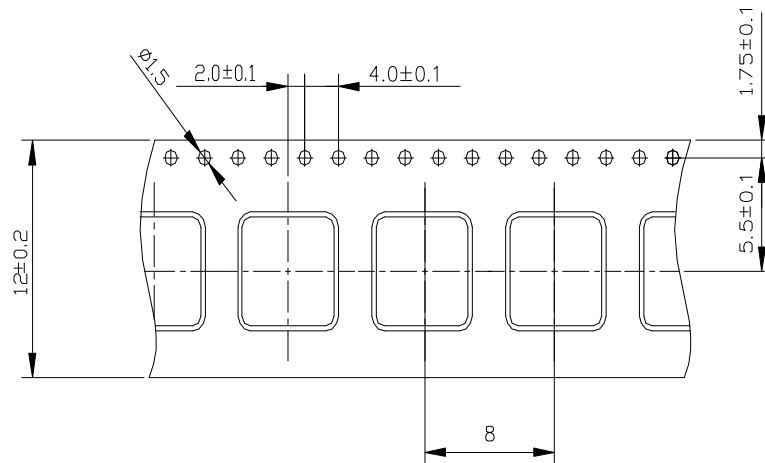


### (5)-2 FLOW SOLDERING

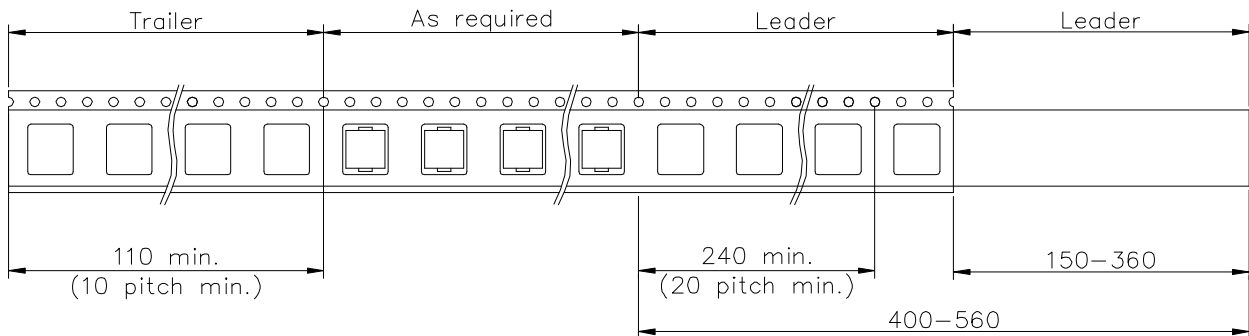


## (6) PACKAGING

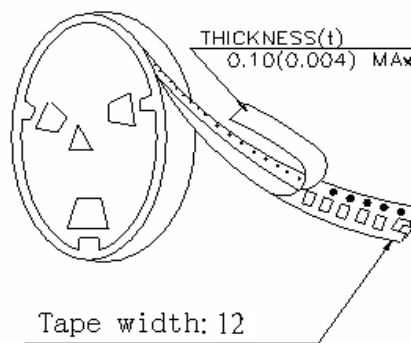
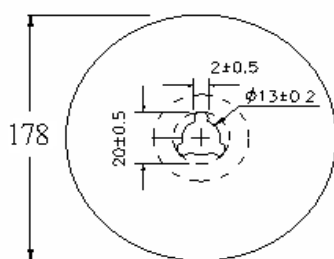
### (6)-1 CARRIER TAPE DIMENSIONS (mm)



### (6)-2 TAPING DIMENSIONS (mm)



### (6)-3 REEL DIMENSIONS (mm)



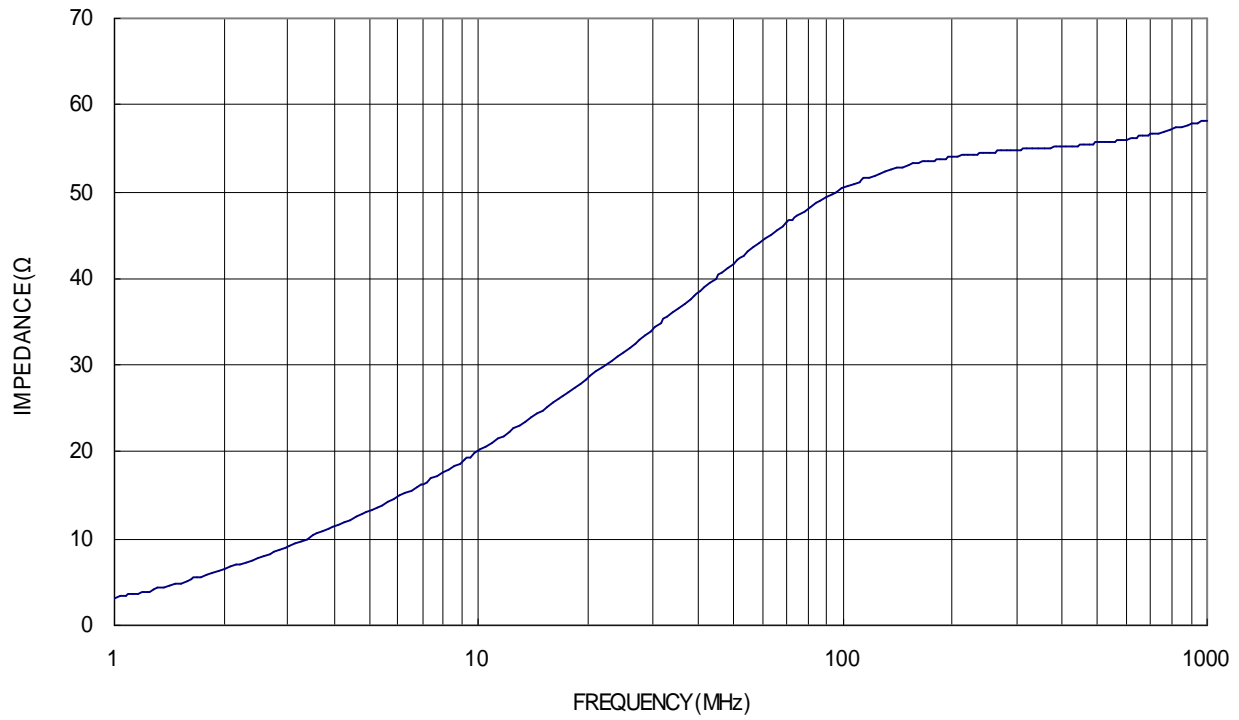
### (6)-3 QUANTITY

500pcs/Reel



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## TYPICAL ELECTRICAT CHARACTERISTICS



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**SMB-403025**

**ATTACHMENT-1**