

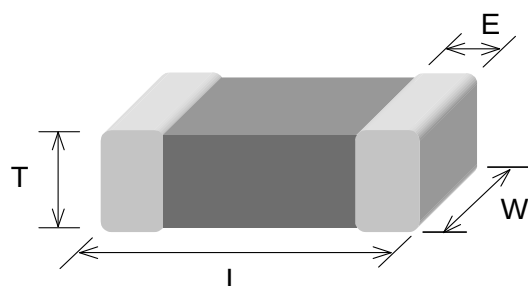


Chip Ferrite Bead (MCB-B Series) Engineering Spec.

■ PRODUCT DETAIL

Electrical Characteristics			Test Instruments
Z	Ω (Ref. Page 6)	TEST FREQ: (Ref. Page 6)MHz TEST LEVEL: 250 mV	•HP4291B RF IMPEDANCE / MATERIAL ANALYZER •HP4338A/B MILLIOHMMETER •Agilent 8720ES S-PARAMETER NETWORK ANALYZER •HP6632B SYSTEM DC POWER SUPPLY
DCR	Ω (Ref. Page 6)		
IDC	mA (Ref. Page 6)		

■ SHAPES AND DIMENSIONS



Unit: mm

TYPE	1005 (EIA 0402)
L	1.00 ± 0.10
W	0.50 ± 0.10
T	0.50 ± 0.10
E	0.25 ± 0.10

■ PART NUMBER CODE

MCB 1005 B 60 1 E B P
 1 2 3 4 5 6 7 8

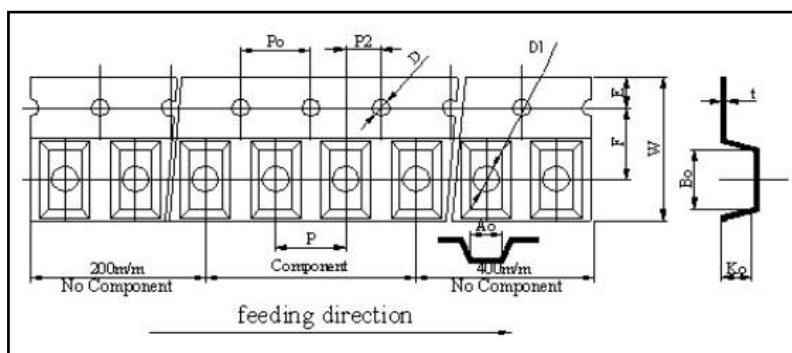
- 1 Series Name
- 2 Size Code: the first two digitals : length(mm), the last two digitals : width(mm)
- 3 Material Code
- 4 Impedance(Ω) $\pm 25\%$ } (ex : 600=60 Ω ; 121=120 Ω)
- 5 Fixed Decimal Point
- 6 Rated Current Code

A=50mA	B=80mA	C=100mA	D=150mA	E=200mA	F=300mA
G=400mA	H=500mA	I=600mA	J=700mA	K=800mA	

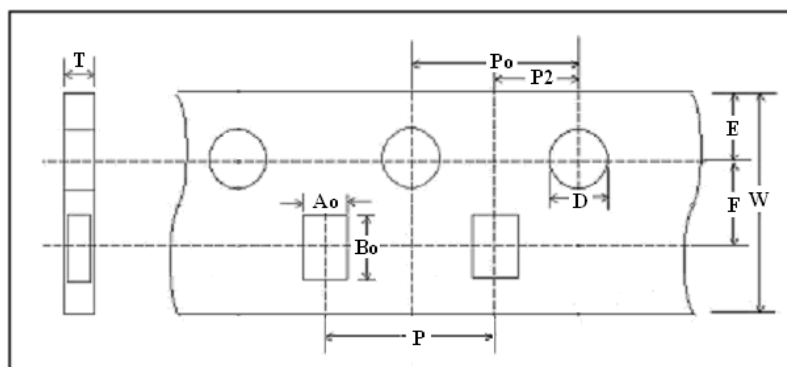
- 7 Soldering : Green Parts: A— Soldering Lead-Free B— Lead-Free for whole chip
- 8 Packaging: P - Embossed paper tape, 7" reel.

■ TAPE AND REEL SPECIFICATIONS

PLASTIC CARRIER



PAPER CARRIER



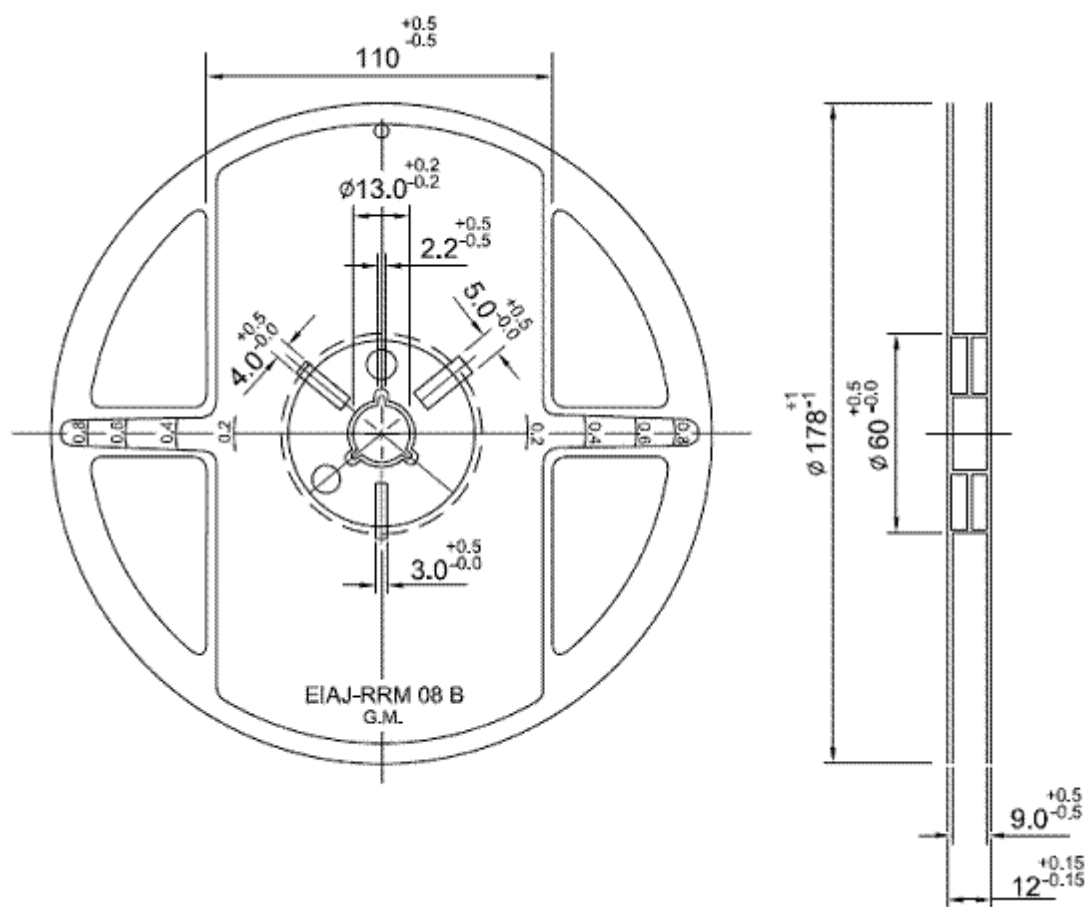
■ TAPING DIMENSIONS

Unit: mm

Size	1005
Symbol	PAPER
W	8.00 ± 0.10
P	2.00 ± 0.05
E	1.75 ± 0.05
F	3.50 ± 0.05
D	1.55 ± 0.05
D1	NA
Po	4.00 ± 0.10
Po10	NA
P2	2.00 ± 0.05
Ao	0.62 ± 0.03
Bo	1.12 ± 0.03
Ko(T)	0.60 ± 0.03
t	NA

■ REEL DIMENSIONS

Unit: mm

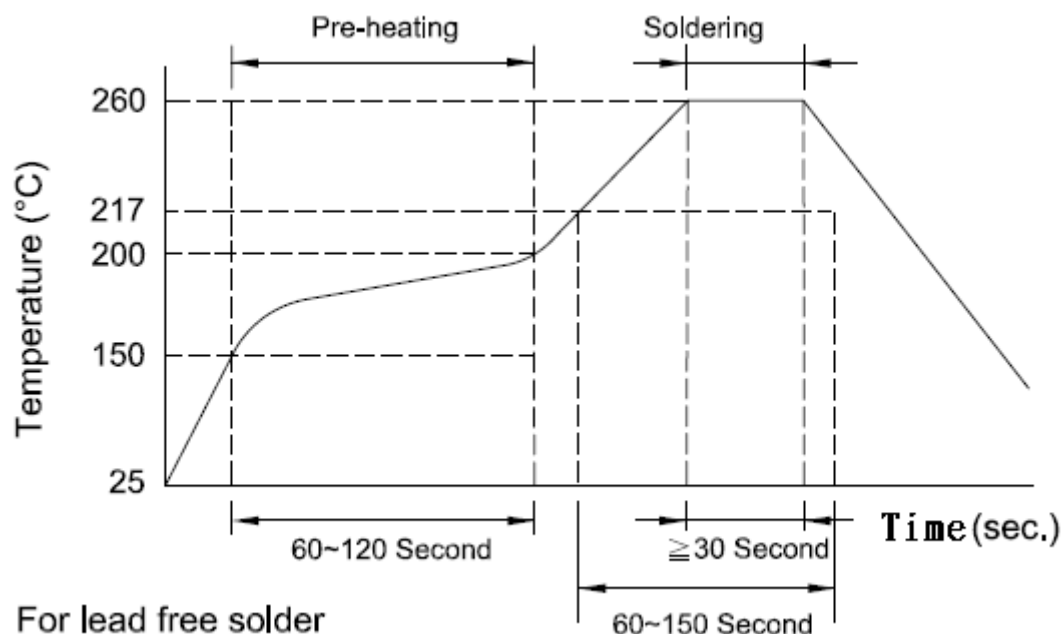


Reel Packaging Quantity		
PART SIZE (EIA SIZE)		1005 (0402)
7" REEL	Qty. (pcs)	10,000

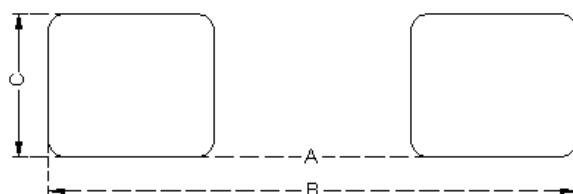
The Contents of a box :

1005 (0402): 5 reels / inner box

■ RECOMMENDED SOLDERING CONDITIONS



■ LAND PATTERNS FOR REFLOW SOLDERING



■ SOLDER LAND INFORMATION

Unit: mm (inches)

Size	A	B	C
1005	0.4 ~ 0.6 (0.015 ~ 0.023)	1.6 ~ 2.6 (0.063 ~ 0.102)	0.4 ~ 0.7 (0.016 ~ 0.027)

■ RELIABILITY AND TEST CONDITION

Test item	Test condition	Criteria
Temperature Cycle	a. Temperature : $-40 \sim +85^{\circ}\text{C}$ b. Cycle : 100 cycles c. Dwell time : 30minutes d. Measurement : at ambient temperature 24 hrs after test completion	a. No mechanical damage b. Impedance value should be within $\pm 20\%$ of the initial value
Operational Life	a. Temperature : $125^{\circ}\text{C} \pm 5^{\circ}\text{C}$ b. Test time : 1000 hrs c. Apply current : full rated current d. Measurement : at ambient temperature 24 hrs after test completion	a. No mechanical damage b. Impedance value should be within $\pm 20\%$ of the initial value
Biased Humidity	a. Temperature : $40^{\circ}\text{C} \pm 2^{\circ}\text{C}$ b. Humidity : $90 \sim 95\%$ RH c. Test time : 1000 hrs d. Apply current : full rated current e. Measurement : at ambient temperature 24 hrs after test completion	a. No mechanical damage b. Impedance value should be within $\pm 20\%$ of the initial value
Resistance to Solder Heat	a. Solder temperature : $260 \pm 5^{\circ}\text{C}$ b. Flux : Rosin c. DIP time : 10 ± 1 sec	a. More than 95 % of terminal electrode should be covered with new solder b. No mechanical damage c. Impedance value should be within $\pm 20\%$ of the initial value
Adhesive Test	a. Reflow temperature : 245°C It shall be Soldered on the substrate applying direction parallel to the substrate b. Apply force(F) : 5 N c. Test time : 10 sec	a. No mechanical damage b. Soldering the products on PCB after the pulling test force $> 5\text{ N}$

Test item	Test condition	Criteria
Steam Aging Test	a. Temperature : 93℃ b. Test time : 4 hrs c. Solder temperature : 235 ± 5℃ d. Flux : Rosin e. DIP time : 5 ± 1 sec	More than 95 % of terminal electrode should be covered with new solder
Rated Current Test	a. Apply current : full rated current / 5min	Temperature rise should be less than 25℃

■ GENERAL TECHNICAL DATA

Operating temperature range : - 55℃ ~ +125℃

Storage Condition : Less than 40℃ and 70% RH

Storage Time: 6 months Max.

Soldering method: Reflow or Wave Soldering

■ PART NUMBER AND CHARACTERISTICS TABLE

MCB1005-B Series

Part No.	Impedance(Ω) +/-25%	Test Freq. (MHz)	DCR(Ω) (Max.)	Rated Current (mA)
MCB1005B601FB_	600	100	0.60	300
MCB1005B102EB_	1000	100	1.00	200
MCB1005B152DB_	1500	100	1.50	150

** For special part number which is not shown in the above table, please refer to appendix.

PART COMPOSITION DECLARATION

Composition part	Material Name	Element name composition	CAS No.	Substance Mass(mg)	
				mass(mg)	%
Ceramic body	Ferrite Powder	Fe	7439-89-6	2.7240	53.1%
		Cu	7440-50-8	0.0975	1.9%
		Ni	7440-02-0	0.7695	15.0%
		Zn	7440-66-6	0.8208	16.0%
	Silver Conductor	Ag	7440-22-4	0.3591	7.0%
	Internal Electrode	Ag	7440-22-4	0.2975	5.8%
Termination	Nickel Sulfamate	Ni	7440-02-0	0.0103	0.2%
External electrode	Solder	Sn	7440-31-5	0.0513	1.0%