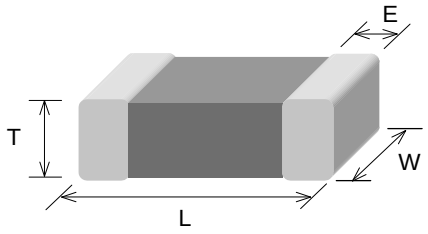
Chip Ferrite Bead (MCB-H Series) Engineering Spec.

■ PRODUCT DETAIL

Electrical Characteristics			Test Instruments
Z	Ω (Ref. Page 6~7)	TEST FREQ: (Ref. Page 6~7)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 6~7)		
IDC	mA (Ref. Page 6~7)		

■ SHAPES AND DIMENSIONS



Unit: mm

TYPE	1005 (EIA 0402)	1608 (EIA 0603)	2012 (EIA 0805)
L	1.00±0.10	1.60±0.15	2.00±0.20
W	0.50±0.10	0.80±0.15	1.25±0.20
T	0.50±0.10	0.80±0.15	0.90±0.20
E	0.25±0.10	0.30±0.20	0.50±0.30

■ PART NUMBER CODE

MCB	1608	H	12	1	E	B	P
1	*2*	*3*	*4*	*5*	*6*	*7*	*8*

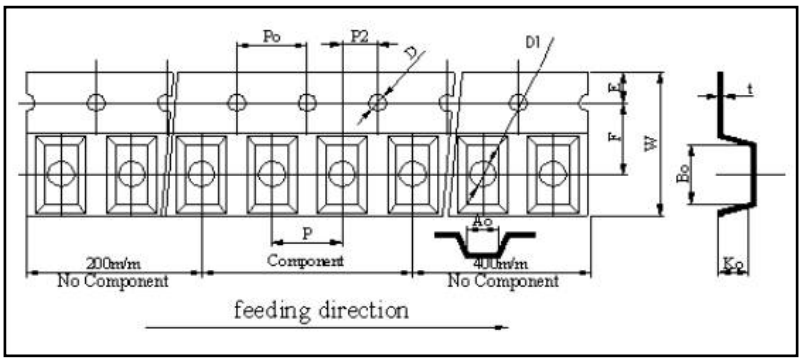
1 **Series Name**
2 **Size Code: the first two digitals : length(mm), the last two digitals : width(mm)**
3 **Material Code**
4 **Impedance(Ω) ± 25%**
5 **Fixed Decimal Point** ┐ **(ex：600=60Ω ；121=120Ω)**
6 **Rated Current Code**

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

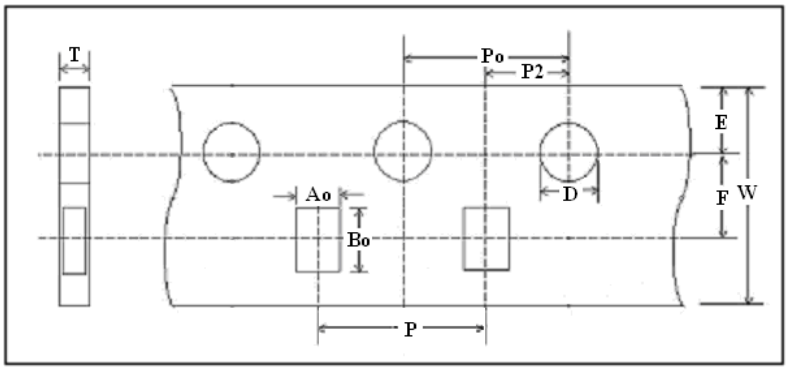
7 **Soldering : Green Parts: A— Soldering Lead-Free B— Lead-Free for whole chip**
8 **Packaging: P - Embossed paper tape, 7" reel.**

■ TAPE AND REEL SPECIFICATIONS

PLASTIC CARRIER



PAPER CARRIER



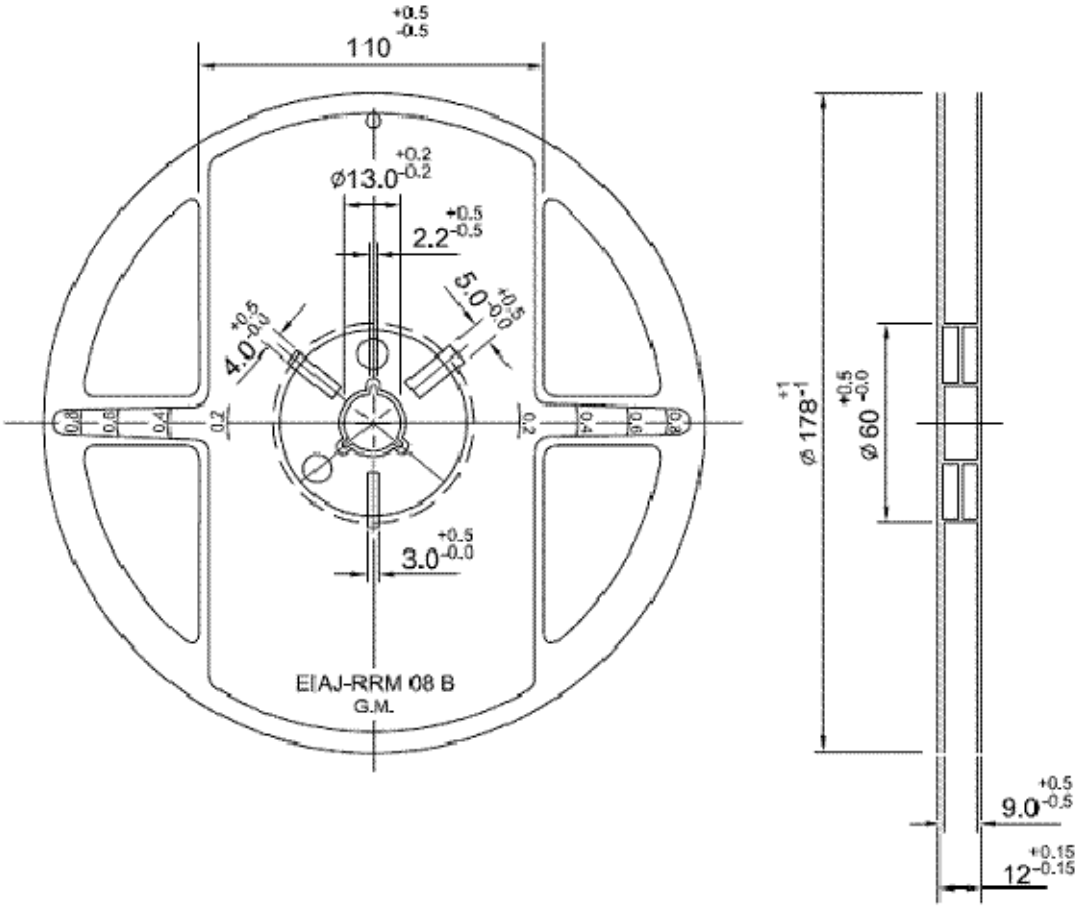
■ TAPING DIMENSIONS

Unit: mm

Size	2012	1608	1005
Symbol	PAPER	PAPER	PAPER
W	8.00±0.10	8.00±0.10	8.00±0.10
P	4.00±0.10	4.00±0.10	2.00±0.05
E	1.75±0.10	1.75±0.10	1.75±0.05
F	3.50±0.10	3.50±0.10	3.50±0.05
D	1.56±0.10	1.56±0.10	1.55±0.05
D1	NA	NA	NA
Po	4.00±0.10	4.00±0.10	4.00±0.10
Po10	40.0±0.20	NA	NA
P2	2.00±0.10	2.00±0.10	2.00±0.05
Ao	1.50±0.05	1.05±0.05	0.62±0.03
Bo	2.30±0.05	1.85±0.05	1.12±0.03
Ko(T)	0.95±0.05	0.95±0.05	0.60±0.03
t	NA	NA	NA

■ REEL DIMENSIONS

Unit: mm

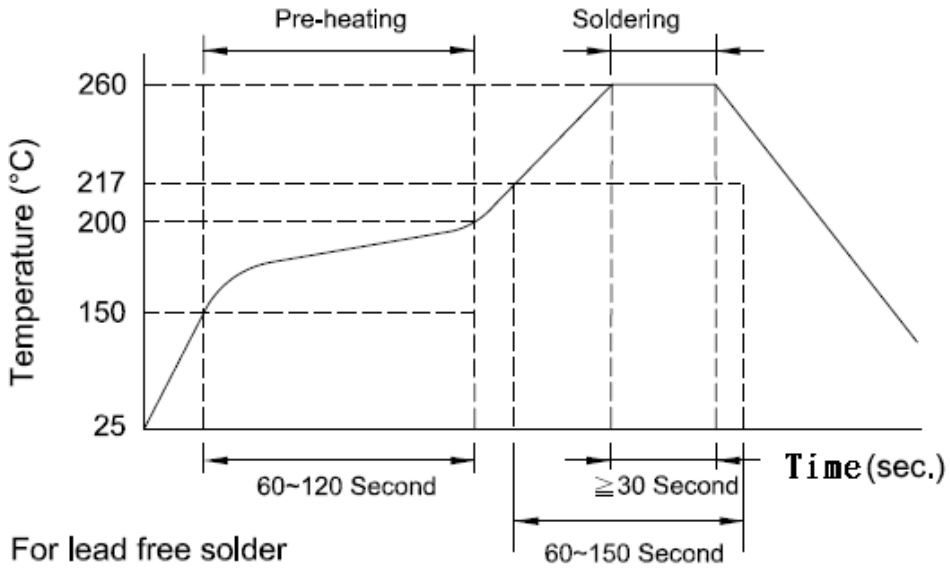


Reel Packaging Quantity				
PART SIZE (EIA SIZE)		**1005 (0402)**	**1608 (0603)**	**2012 (0805)**
7” REEL	Qty. (pcs)	10,000	4,000	4,000

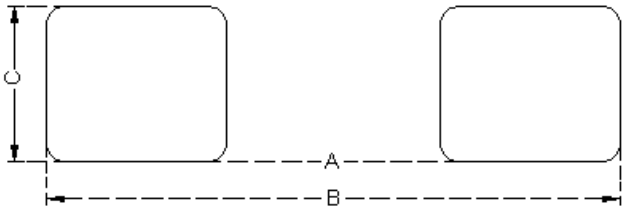
The Contents of a box：

2012 (0805): 5 reels / inner box
1608 (0603): 5 reels / inner 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	0.40 ～ 0.60 (0.015 ～ 0.023)	1.60 ～ 2.60 (0.063 ～ 0.102)	0.40 ～ 0.70 (0.016 ～ 0.027)
1608	0.50 ～ 0.70 (0.019 ～ 0.027)	2.10 ～ 3.10 (0.083 ～ 0.122)	0.65 ～ 0.95 (0.026 ～ 0.037)
2012	1.00 ～ 1.20 (0.039 ～ 0.047)	3.00 ～ 4.00 (0.118 ～ 0.157)	0.80 ～ 1.10 (0.031 ～ 0.043)

■ RELIABILITY AND TEST CONDITION

Test item	Test condition	Criteria
Temperature Cycle	a. Temperature : -40 ~ +85℃ 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 ± 20 % of the initial value
Operational Life	a. Temperature : 125℃ ± 5℃ 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 ± 20 % of the initial value
Biased Humidity	a. Temperature : 40℃ ± 2℃ b. Humidity : 90 ~ 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 ± 20 % of the initial value
Resistance to Solder Heat	a. Solder temperature : 260 ± 5℃ 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 ± 20 % of the initial value
Adhesive Test	a. Reflow temperature : 245℃ 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 N

Test item	Test condition	Criteria
Steam Aging Test	a. Temperature : 93℃ b. Test time : 4 hrs(MCB1005) Others : 8 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(Size:1005)

12 months(Size:1608 above)

Soldering method: Reflow or Wave Soldering

■ PART NUMBER AND CHARACTERISTICS TABLE

Part No.	Impedance(Ω) +/-25%	Test Freq. (MHz)	DCR(Ω) (Max.)	Rated Current (mA)
MCB1005-H Series				
MCB1005H750FB_	75	100	0.40	300
MCB1608-H Series				
MCB1608H200HB_	20	100	0.25	500
MCB1608H600HB_	60	100	0.25	500
MCB1608H750HB_	75	100	0.35	500
MCB1608H800HB_	80	100	0.35	500
MCB1608H121EB_	120	100	0.45	200
MCB1608H241EB_	240	100	0.45	200
MCB1608H301EB_	300	100	0.45	200
MCB1608H601EB_	600	100	0.50	200
MCB1608H102EB_	1000	100	0.6	200

Part No.	Impedance(Ω) +/-25%	Test Freq. (MHz)	DCR(Ω) (Max.)	Rated Current (mA)
MCB2012-H Series				
MCB2012H121EB_	120	100	0.25	200
MCB2012H151EB_	150	100	0.25	200
MCB2012H221EB_	220	100	0.25	200
MCB2012H301EB_	300	100	0.25	200
MCB2012H471EB_	470	100	0.35	200
MCB2012H601EB_	600	100	0.35	200

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