INPAQ

Global RF/Component Solutions

# MCB 1005 B Series

# Specification

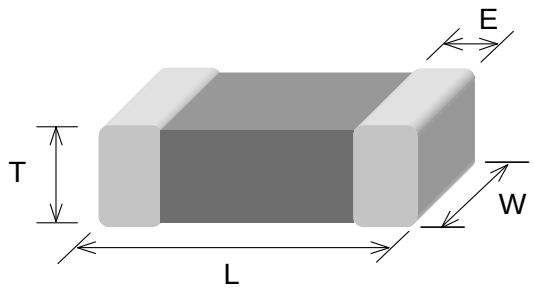
| | |
|---|---|
| Product Name | Chip Ferrite Bead |
| Series | MCB B Series |
| Size | EIAJ 1005 |

# 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<br><br>TEST LEVEL: 250 mV | •HP4291B RF IMPEDANCE / MATERIAL ANALYZER<br>•HP4338A/B MILLIOHMMETER<br>•Agilent 8720ES S-PARAMETER NETWORK ANALYZER<br>•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) ± 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.

## ■ PART NUMBER AND CHARACTERISTICS TABLE

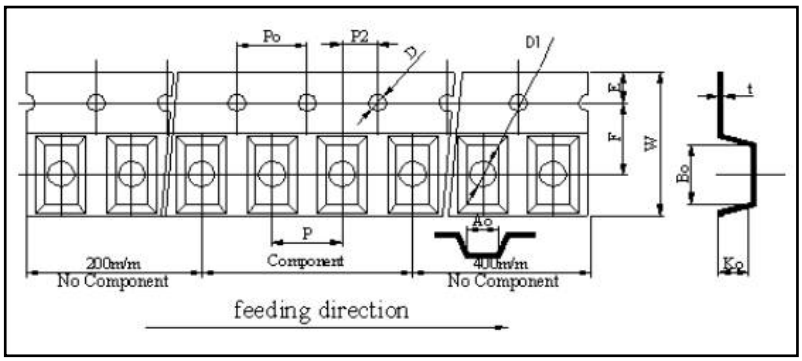
MCB1005-B Series

| 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 |

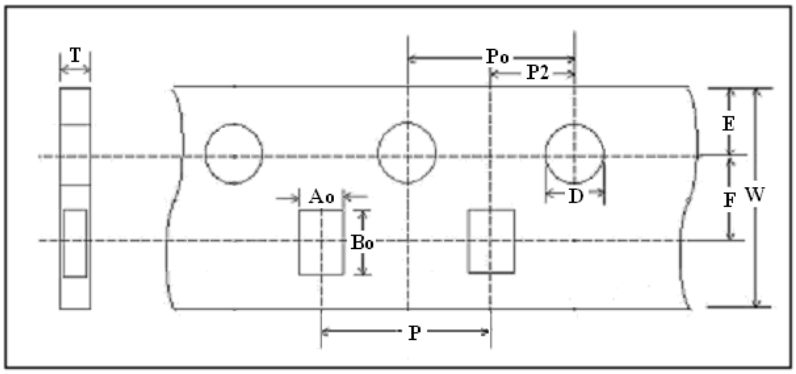
** For special part number which is not shown in the above table, please refer to appendix.

## ■ TAPE AND REEL SPECIFICATIONS

### PLASTIC CARRIER




### PAPER CARRIER



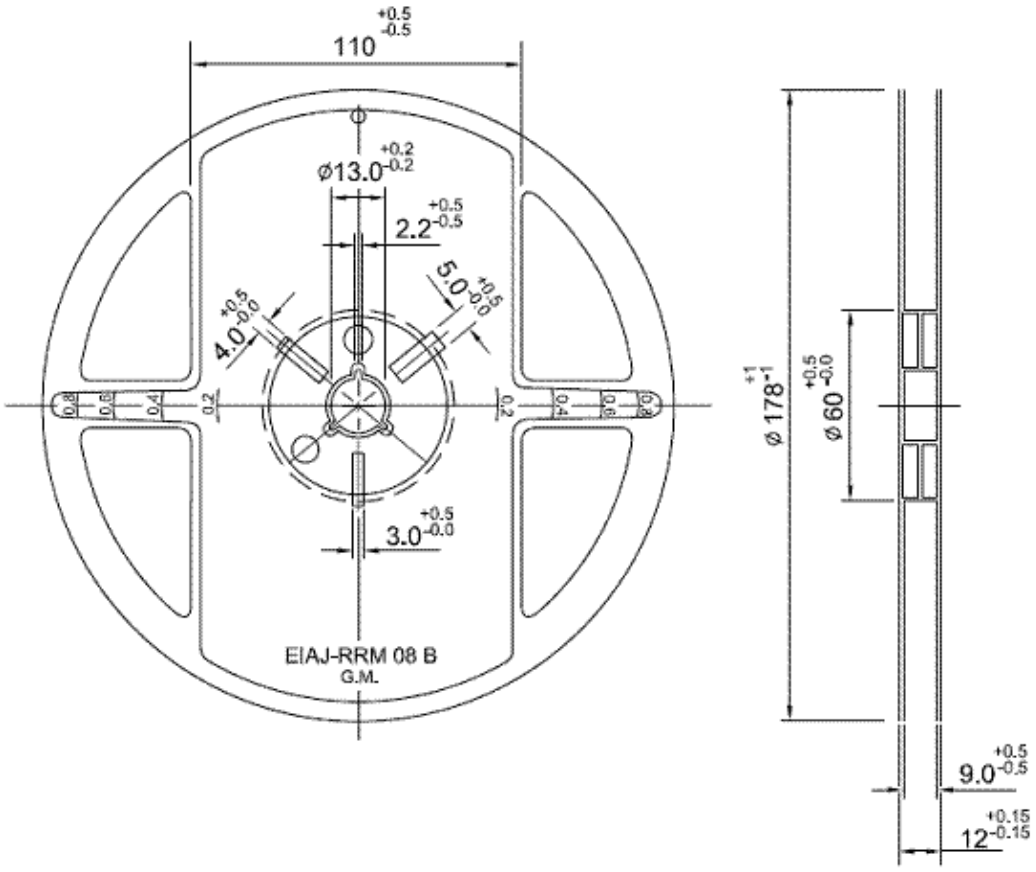
## ■ TAPING DIMENSIONS

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**

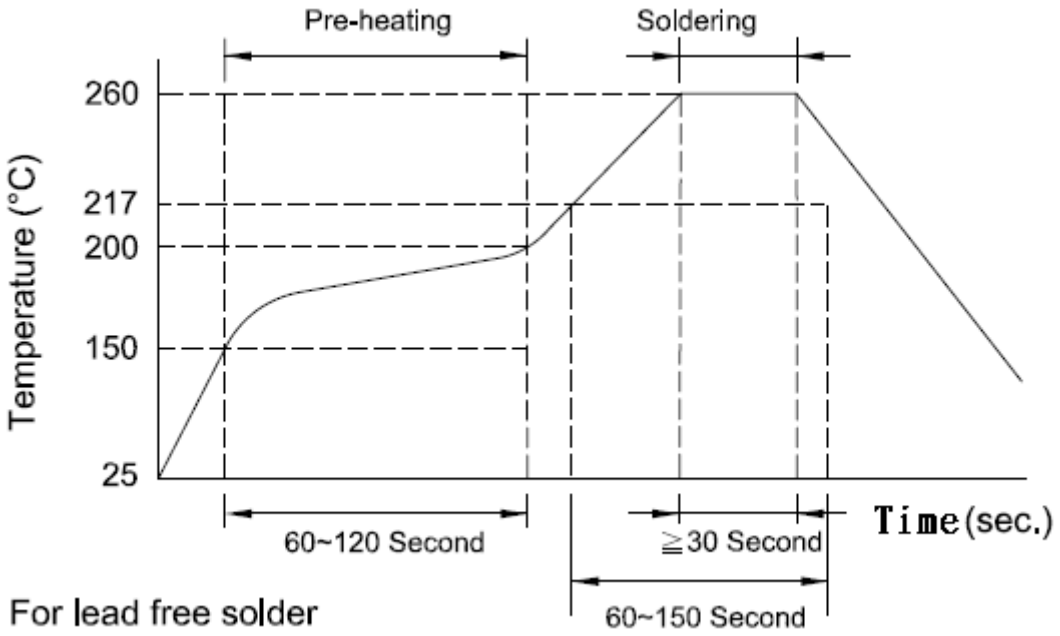


| Reel Packaging Quantity | | |
|---|---|---|
| PART SIZE<br>(EIA SIZE) | | **1005<br>(0402)** |
| 7” REEL | Qty. (pcs) | 10,000 |

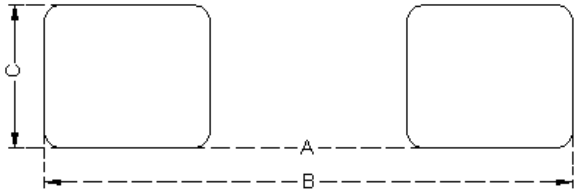
## The Contents of a box：

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<br>(0.015 ～ 0.023) | 1.6 ～ 2.6<br>(0.063 ～ 0.102) | 0.4 ～ 0.7<br>(0.016 ～ 0.027) |

## ■ RELIABILITY AND TEST CONDITION

| Test item | Test condition | Criteria |
|---|---|---|
| **Temperature Cycle** | a. Temperature : -40 ~ +85℃<br>b. Cycle : 100 cycles<br>c. Dwell time : 30minutes<br>d. Measurement : at ambient temperature 24 hrs after test completion | a. No mechanical damage<br>b. Impedance value should be within ± 20 % of the initial value |
| **Operational Life** | a. Temperature : 125℃ ± 5℃<br>b. Test time : 1000 hrs<br>c. Apply current : full rated current<br>d. Measurement : at ambient temperature 24 hrs after test completion | a. No mechanical damage<br>b. Impedance value should be within ± 20 % of the initial value |
| **Biased Humidity** | a. Temperature : 40℃ ± 2℃<br>b. Humidity : 90 ~ 95 % RH<br>c. Test time : 1000 hrs<br>d. Apply current : full rated current<br>e. Measurement : at ambient temperature 24 hrs after test completion | a. No mechanical damage<br>b. Impedance value should be within ± 20 % of the initial value |
| **Resistance to Solder Heat** | a. Solder temperature : 260 ± 5℃<br>b. Flux : Rosin<br>c. DIP time : 10 ± 1 sec | a. More than 95 % of terminal electrode should be covered with new solder<br>b. No mechanical damage<br>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 paralle1 to the substrate<br>b. Apply force(F) : 5 N<br>c. Test time : 10 sec | a. No mechanical damage<br>b. Soldering the products on PCB after the pulling test force > 5 N |
| **Steam Aging Test** | a. Temperature : 93℃<br>b. Test time : 4 hrs<br>c. Solder temperature : 235 ± 5℃<br>d. Flux : Rosin<br>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