APPROVAL SHEET

PRODUCT	**Chip Ferrite Bead (MCB-B)**
SERIES	MCB-B
PART NO.	
DESCRIPTION	
ISSUE DATE	2023/12/19
REVISION DATE	2023/12/19
REFERENCE NO.	ENS000006090

RoHS COMPLIANCE ITEM

Halogen Free

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CUSTOMER APPROVAL

CUSTOMER _____ **CUSTOMER PN** _____

■ **Vendor:** Walsin Technology Corporation
566-1, Kao Shi Road, Yangmei, Taiwan
Tel. 886-3-475-3711 www.passivecomponent.com

■ **Manufacturer:** INPAQ Technology Co., Ltd.
No.11, Ke-Yi St., Chunan, Miaoli 35059, Taiwan
Tel. 886-37-585-555 www.inpaq.com.tw

Note:
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Chip Ferrite Bead (MCB-B Series)

Engineering Specification

1. Features

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- Monolithic inorganic material construction
- Closed magnetic circuit avoids crosstalk
- SMD Type & suitable for reflow and wave soldering
- Available in various sizes
- Excellent solderability and heat resistance
- High reliability
- Effectively filtering capability over a wide range of frequency

2. Applications

- Filtering between analog and digital circuitry, clock generation circuitry, I/O interconnects, isolation between RF noisy circuits and logic devices susceptible to functional degradation, power supply filtering to prevent conducted RF energy from corrupting the power generation circuitry, high frequency EMI prevention of computer, printers, VCRs, TVs and portable telephones

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3. Explanation of Part Number

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

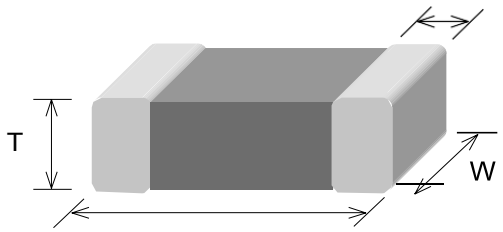
1 **Series Name**
2 **Size Code: the first two digitals : length(mm), the last two digitals : width(mm)**
3 **Material Code**
4 **Impedance at 100MHz** ┐
5 **Fixed Decimal Point** ┘ **(ex： 600 = 60Ω；121 = 120Ω)**
6 **Rated Current Code**

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 – Paper tape, 7" reel.**

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4. Shapes and Dimensions



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

5. General Technical Data

Operating temperature range : - 55℃ ~ +125℃
Storage Condition : Less than 40℃ and 70% RH
Storage Time: 6 months Max.
Soldering method: Reflow

6. Electrical Specification

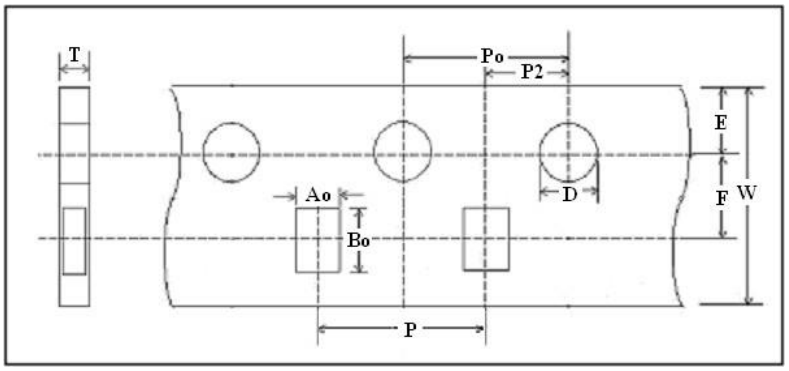
Part No.	Impedance(Ω) +/-25%	Test Freq. (MHz)	DCR(Ω) (Max.)	Rated Current (mA)
MCB1005B471EBP	470	100	0.60	200
MCB1005B601FBP	600	100	0.60	300
MCB1005B102EBP	1000	100	1.00	200
MCB1005B102FBP	1000	100	1.00	300
MCB1005B102GBP	1000	100	0.70	400
MCB1005B152DBP	1500	100	1.50	150
MCB1005B182DBP	1800	100	1.50	150
	•Test Level：250 mV			
Test Instruments：	• Agilent E4991A/B RF IMPEDANCE / MATERIAL ANALYZER or EQUIVALENT •HP4338A/B MILLIOHMMETER •Agilent E5071C ENA SERIES NETWORK ANALYZER •HP6632B SYSTEM DC POWER SUPPLY			

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

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7. Packing

- **Paper Carrier**



- **Taping Dimensions**

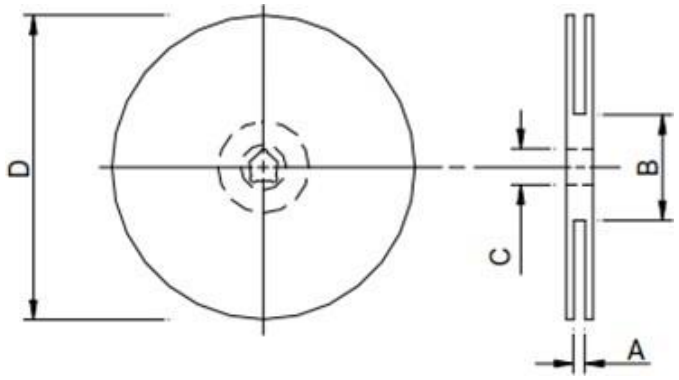
Unit：mm

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

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- **Reel Dimensions**



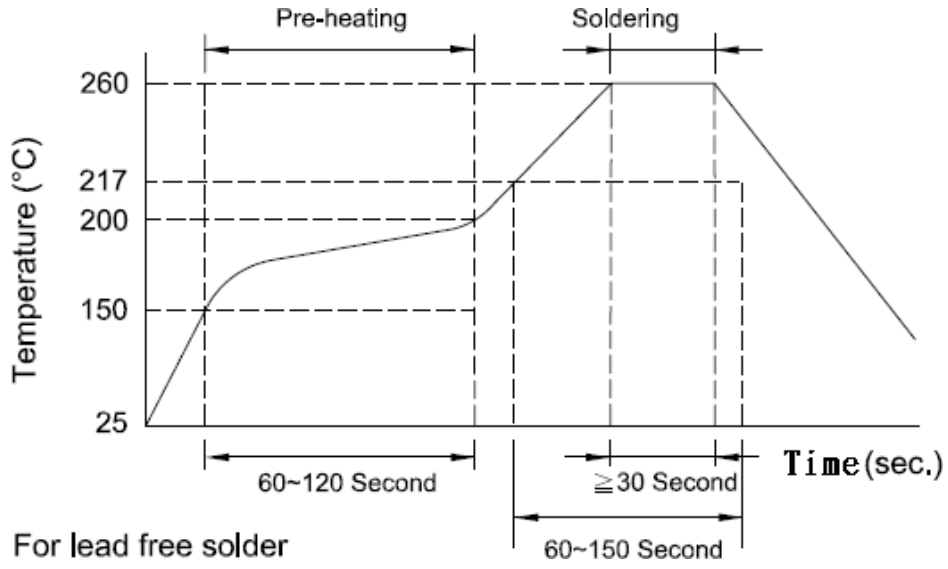
Type	A(mm)	B(mm)	C(mm)	D(mm)
7''	10±1.5	50 or more	13.2±1.0	178±2.0

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8. Standard Quantity For Packaging

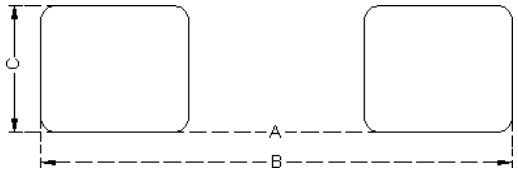
Packaging style：Taping
Reel packaging quantity：**10,000** pcs/reel
Per the box：5 Reels

9. Recommendable reflow soldering



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10. Land Patterns for Reflow Soldering



- **Solder Land Information**

Unit: mm (inches)

Size(mm)	A	B	C
1005	0.4 (0.016)	1.2 ～ 1.4 (0.047 ～ 0.055)	0.5 (0.020)

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11. Reliability Performance

Test item	Test condition	Criteria
Thermal Shock	a. Temperature : -55℃ ~ +125℃ 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

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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℃

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