



MHC P Series Data Sheet

Product Name	MHC P Series
Series	Ferrite Chip Bead
Size	EIAJ 1005 - 1608
Version	A7

Ferrite Chip Bead for High Current (MHC P Series)

This product belongs to the 3C and industrial grade standard, not for automotive application. If customer privately uses to automotive parts and results in any consequences, INPAQ is not responsible for after-sales service, thank you!

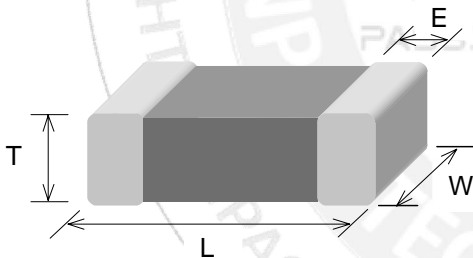
■ Features

- **Combination of high frequency noise suppression with capability of handing high current**
- **The current rating up to 8 Amps with low DCR**

■ Applications

- **High current DC power lines**
- **Circuits where a stable ground in unavailable**

■ Shapes and Dimensions



TYPE	1608(0603) T : 0.8
L	1.60±0.15
W	0.80±0.15
T	0.80±0.15
E	0.30±0.20
Unit	mm

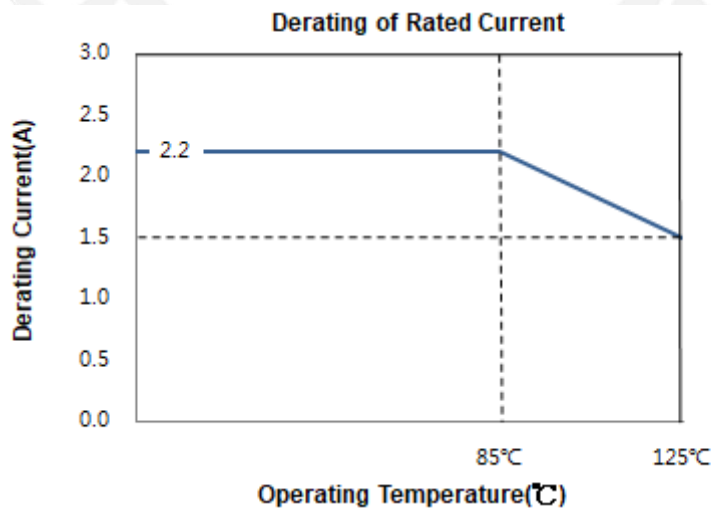
■ Part Number and Characteristics Table

Part No.	Impedance (Ω) +/-25%	DCR(Ω) (Max.)	Rated Current (mA)	
			85°C	125°C
MHC1608P221ZBP2A2DG	220	0.050	2200	1500
Item	Test Method			
Impedance	<ul style="list-style-type: none"> •Agilent E4991A /B RF Impedance / Material Analyzer •Agilent 16192A fixture •Test Frequency : 100MHz •Test Level : 250 mV 			
DC Resistance	<ul style="list-style-type: none"> •HP4338A/B Milliohm meter 			

■ General Technical Data

Operating temperature range : - 55°C ~ +125°C
 Storage Condition : Less than 40°C and 70% RH
 Storage Time : 12 months Max.
 Soldering method : Reflow

In operating temperature exceeding +85°C ,derating of current is set according to the operating temperature graph as follows.



■ Part Number Code

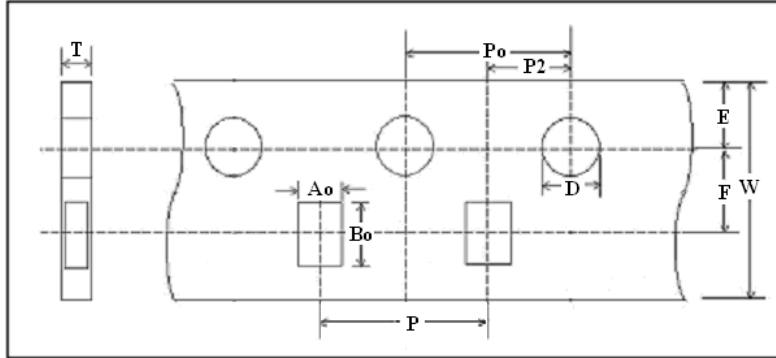
<u>MHC</u>	<u>1608</u>	<u>P</u>	<u>22</u>	<u>1</u>	<u>Z</u>	<u>B</u>	<u>P</u>	<u>2A2</u>	<u>DG</u>
1	2	3	4	5	6	7	8	9	10

- 1 Series Name
- 2 Dimensions : L x W
- 3 Material Code
- 4 Impedance(Ω) $\pm 25\%$ } (Ex : 26 Ω →260 ; 120 Ω →121)
- 5 Fixed Decimal Point
- 6 Rated Current Code
- 7 Soldering : Green Parts · B=Lead-Free for whole chip
- 8 Packaging : P - Paper tape · 7" reel.
- 9 Rated Current Value : A90=900mA ; 6A0=6000mA
- 10 INPAQ internal code



■ **Tape and Reel Specifications**

Paper carrier

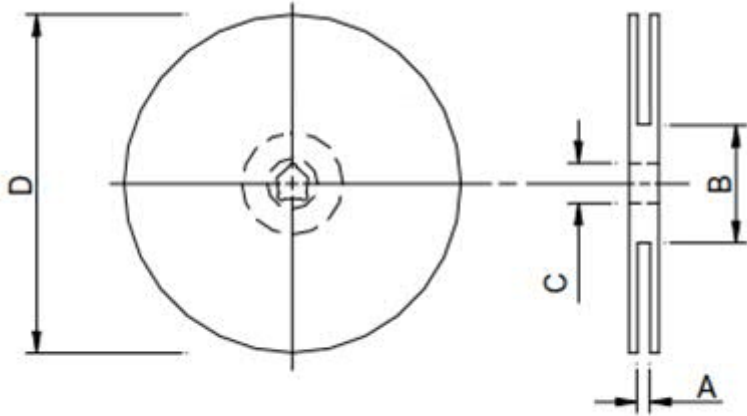


■ **Taping Dimensions**

Unit : mm

Size	1608(T:08)
Symbol	Paper
W	8.00±0.10
P	4.00±0.10
E	1.75±0.10
F	3.50±0.10
D	1.56±0.10
Po	4.00±0.10
P2	2.00±0.10
Ao	1.05±0.05
Bo	1.85±0.05
Ko(T)	0.95±0.05

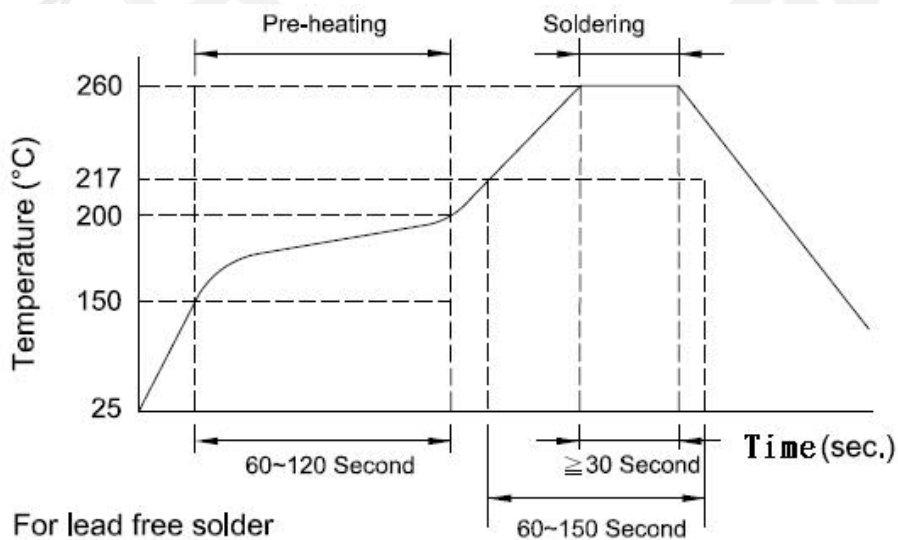
■ Reel Dimensions



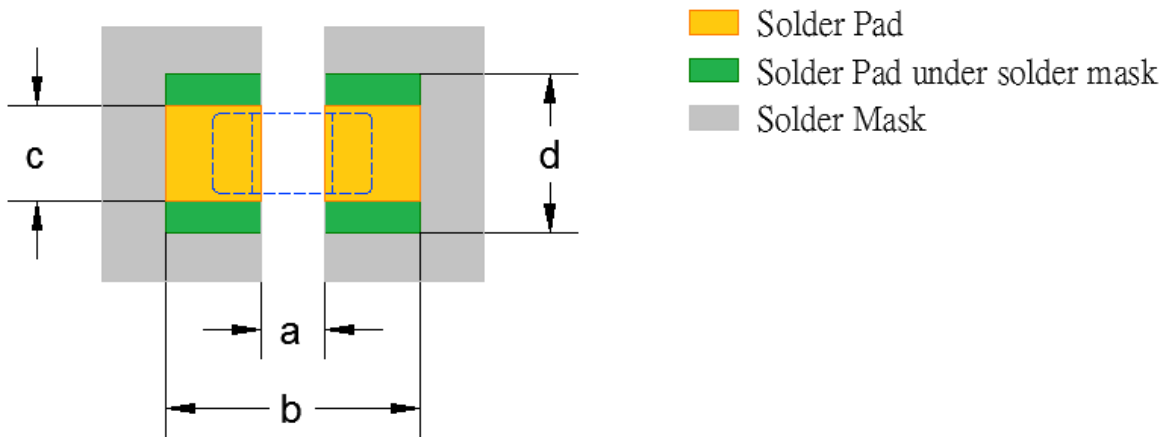
Type	7"
A(mm)	10±1.5
B(mm)	50 or more
C(mm)	13.2±1.0
D(mm)	178±2.0

7" Reel Packaging Quantity	
Part Size (EIA Size)	1608 (0603)
Qty.(pcs)	4,000
BOX	5 reels / inner box

■ Recommended Soldering Conditions



■ Land Patterns for Reflow Soldering



■ Solder Land Information

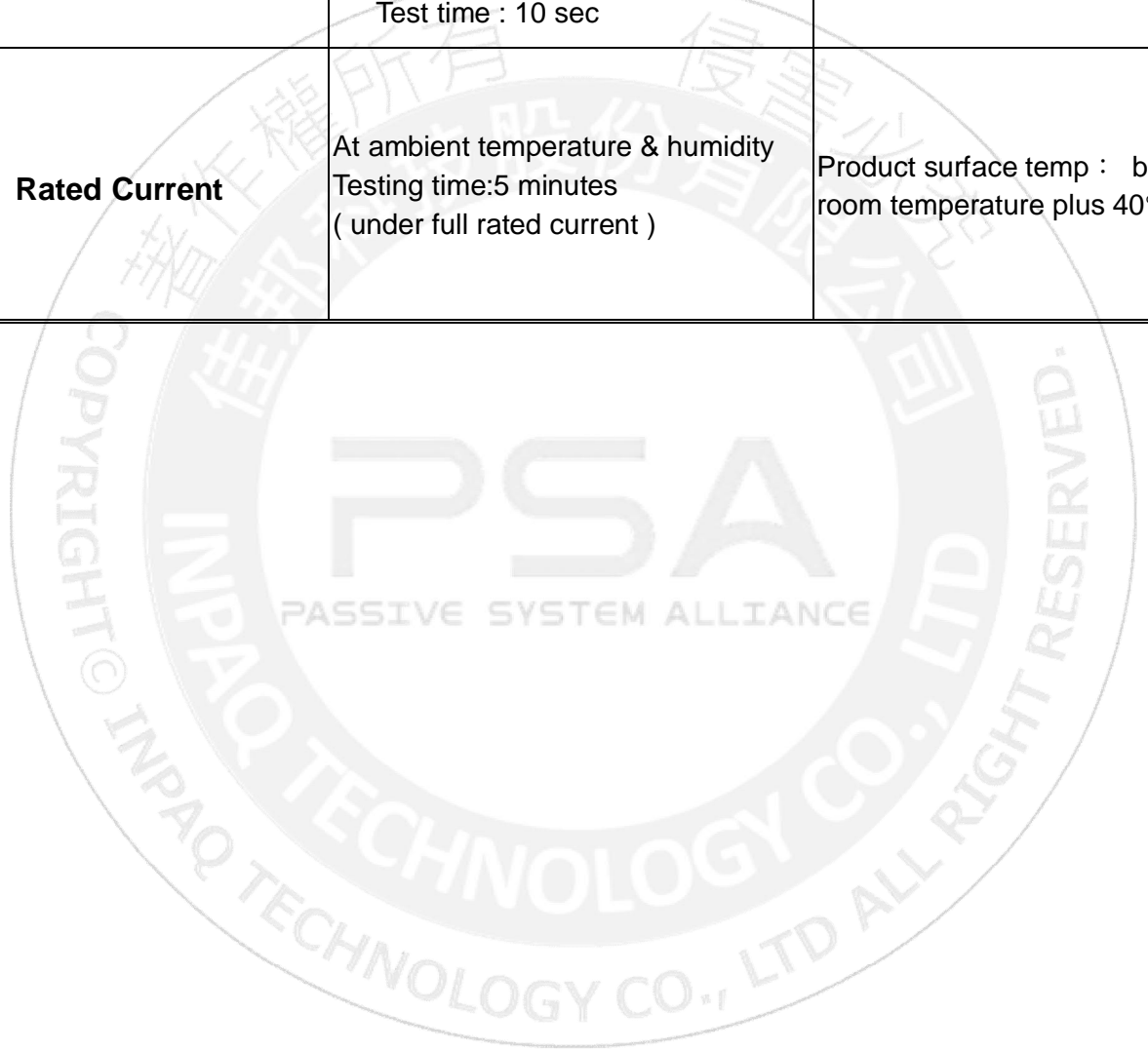
Size (mm)	Rated current (A)	a (mm)	b (mm)	c (mm)	d (mm)		
					18um	35um	70um
1608	0.5~1.5	0.70 ~ 0.80	1.80 ~ 2.00	0.70	0.8	0.8	0.7
	1.7~2.5				1.3	0.8	0.7
	3~4				2.5	1.3	0.7
	5~6				6.5	3.4	1.65

※Don't apply narrower pattern than listed above might cause excessive heat or open circuit.

■ Reliability and Test Conditions

Test item	Test condition	Criteria
Thermal Shock	<ol style="list-style-type: none"> 1. Temperature: -55 ~ +125°C For 30 minutes each 2. Cycle: 100 cycles 3. Measurement: at ambient temperature 24 hours after test completion 	<ol style="list-style-type: none"> 1. No mechanical damage 2. Impedance should be within ±30% of the initial value
Operational Life	<ol style="list-style-type: none"> 1. Temperature: 125 ± 5°C 2. Testing time: 1000 hrs 3. Applied current: Full rated current 4. Measurement: At ambient temperature 24 hours after test completion 	<ol style="list-style-type: none"> 1. No mechanical damage 2. Impedance should be within ±30% of the initial value
Biased Humidity	<ol style="list-style-type: none"> 1. Temperature: 40°C ± 2°C 2. Humidity: 90-95 % RH 3. Applied current: Full rated current 4. Testing time: 1000 hrs 5. Measurement: at ambient temperature 24 hours after test completion 	<ol style="list-style-type: none"> 1. No mechanical damage 2. Impedance should be within ±30% of the initial value
Solderability	<ol style="list-style-type: none"> 1. Solder temperature : 235 ± 5°C 2. Flux : Rosin 3. DIP time : 5 ± 1 sec 	<ol style="list-style-type: none"> 1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage
Resistance to Solder Heat	<ol style="list-style-type: none"> 1. Solder temperature : 260 ± 5°C 2. Flux : Rosin 3. DIP time : 10 ± 1 sec 	<ol style="list-style-type: none"> 1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage 3. Impedance should be within ±30 % of the initial value

Test item	Test condition	Criteria
Adhesive Test	1. Reflow temperature : 245°C It shall be soldered on the substrate applying direction parallel to the substrate 2. Apply force(F) : 5 N Test time : 10 sec	1. No mechanical damage 2. Soldering the products on PCB after the pulling test force > 5 N
Rated Current	At ambient temperature & humidity Testing time:5 minutes (under full rated current)	Product surface temp : below room temperature plus 40°C



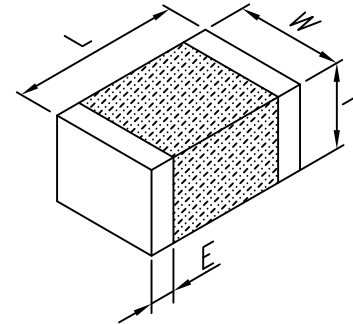
MHC 1608P 221ZBP2A2

ELECTRICAL CHARACTERISTICS:

Z @ 100MHz (Ohms)	DCR (Ohms)	Rated Current
Nominal 220	0.05	2200mA
Minimum 165		
Maximum 275		

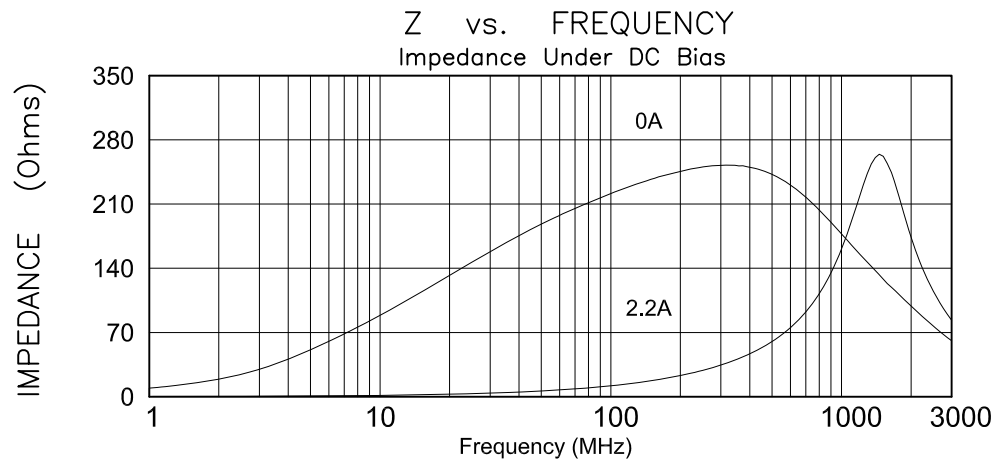
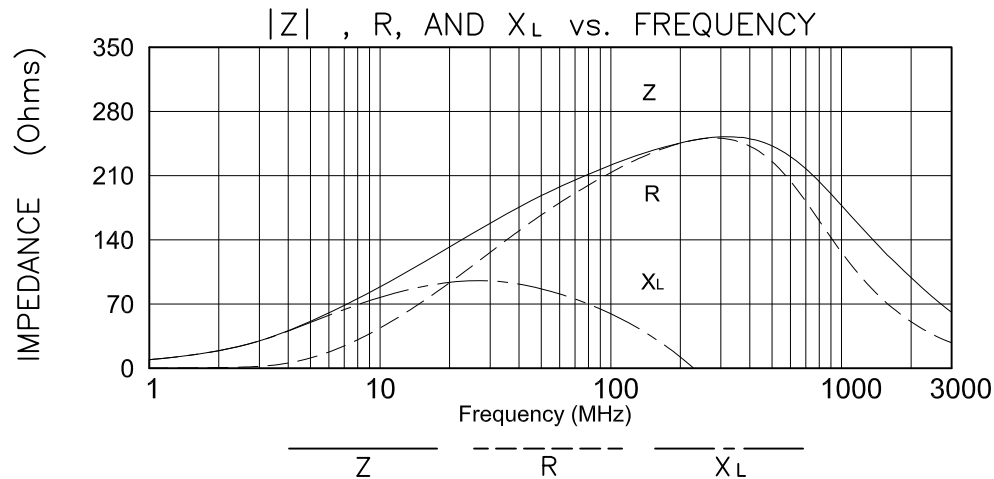
PHYSICAL DIMENSIONS:

L	1.60(0.063) ±0.150(0.006)
W	0.80(0.031) ±0.150(0.006)
T	0.80(0.031) ±0.150(0.006)
E	0.30(0.012) ±0.200(0.008)



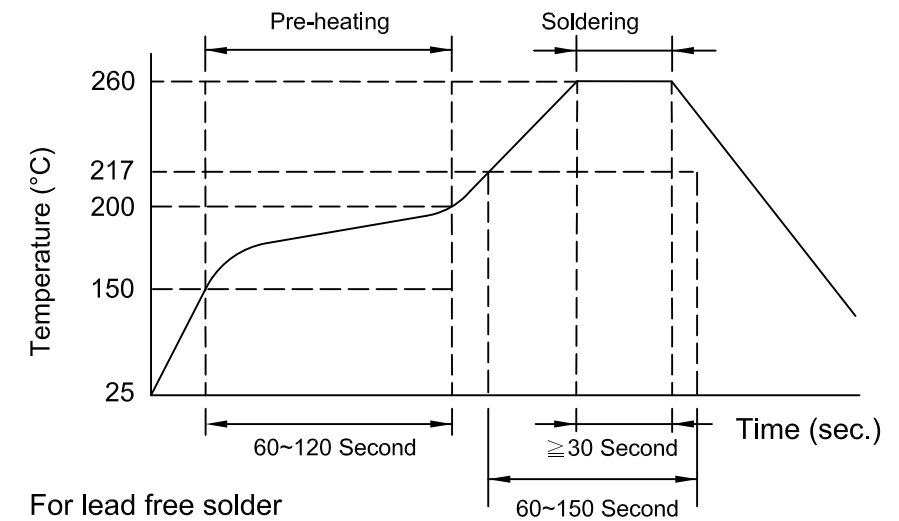
NOTES: UNLESS OTHERWISE SPECIFIED

- 1.-All edges and corners must be rounded.
- 2.-Dimensions are in millimeters (inches)
- 3.-Taped and Reeled per current EIA specification.



RECOMMENDED SOLDERING CONDITIONS

Reflow Soldering



APPROVER	DATE	2017/07/11
Sharon	CFM.	