佳邦科技股份有限公司
INPAQ TECHNOLOGY CO., LTD.

MHC 1005-1608 P Series

Specification

Product Name	High Current Chip Bead
Series	MHC P Series
Size	EIAJ 1005-1608

Chip Ferrite Bead for High Current (MHC-P Series) Engineering Spec.

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!

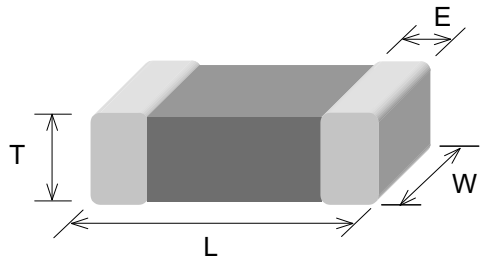
■ Features

- **Combination of high frequency noise suppression with capability of handing high current**
- **The current rating up to 6 Amps with low DCR**

■ Applications

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

■ Shapes and Dimensions



TYPE	1005(0402)	1608(0603) T : 0.6	1608(0603) T : 0.8
L	1.00±0.05	1.60±0.15	1.60±0.15
W	0.50±0.05	0.80±0.15	0.80±0.15
T	0.50±0.05	0.60±0.15	0.80±0.15
E	0.25±0.10	0.30±0.20	0.30±0.20
Unit	mm	mm	mm

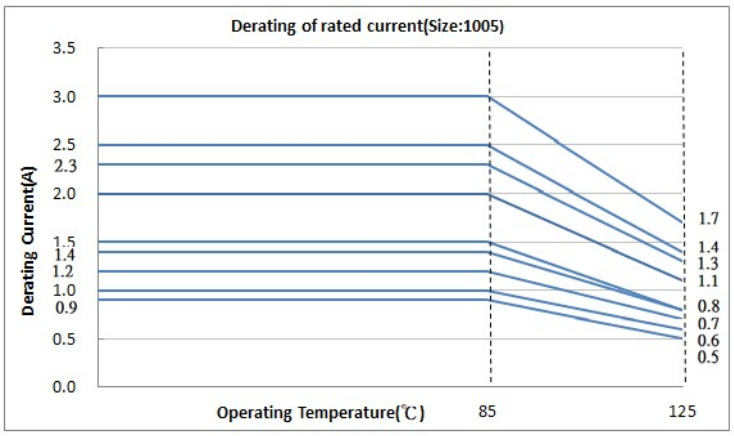
■ Part Number and Characteristics Table

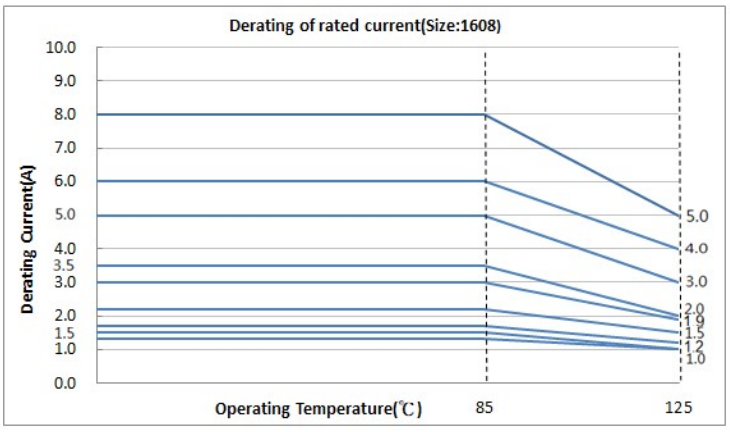
Part No.	Impedance (Ω) +/-25%	DCR(Ω) (Max.)	Rated Current (mA)	
			85℃	125℃
MHC1005 Series				
MHC1005P330ZBP3A0	33	0.022	3000	1700
MHC1005P600ZBP2A5	60	0.032	2500	1400
MHC1005P800ZBP2A3	80	0.038	2300	1300
MHC1005P121ZBP2A0	120	0.055	2000	1100
MHC1005P181ZBP1A5	180	0.090	1500	800
MHC1005P221ZBP1A4	220	0.100	1400	800
MHC1005P331ZBP1A2	330	0.150	1200	700
MHC1005P471ZBP1A0	470	0.200	1000	600
MHC1005P601ZBPA90	600	0.230	900	500
MHC1608 Series				
MHC1608P220Z06BP8A0	22	0.004	8000	5000
MHC1608P260Z06BP6A0	26	0.007	6000	4000
MHC1608P300Z06BP6A0	30	0.007	6000	4000
MHC1608P300Z06BP5A0	30	0.010	5000	3000
MHC1608P700Z06BP3A5	70	0.022	3500	2000
MHC1608P101Z06BP3A0	100	0.030	3000	1900
MHC1608P121Z06BP3A0	120	0.030	3000	1900
MHC1608P221ZBP2A2	220	0.050	2200	1500
MHC1608P331ZBP1A7	330	0.080	1700	1200
MHC1608P471ZBP1A5	470	0.130	1500	1000
MHC1608P601ZBP1A3	600	0.150	1300	1000

Item	Test Method
Impedance	•Agilent E4991A RF Impedance / Material Analyzer •Agilent 16192A fixture •Test Frequency：100MHz •Test Level：250 mV
DC Resistance	•HP4338A/B Milliohm meter

■ General Technical Data

Operating temperature range：- 55℃ ~ +125℃
Storage Condition：Less than 40℃ and 70% RH
Storage Time：6 months Max.(Size:1005)
12 months Max.(Size:1608 above)
Soldering method：Reflow
In operating temperature exceeding +85℃,derating of current is set according to the operating temperature graph as follows.





■ Part Number Code

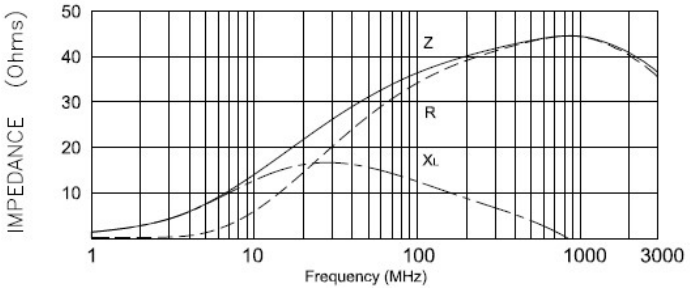
MHC	1608	P	26	0	Z	06	B	P	6A0
1	2	3	4	5	6	7	8	9	10

1 Series Name
2 Dimensions： L x W
3 Material Code
4 Impedance(Ω) ±25%
5 Fixed Decimal Point ┐ (Ex：26Ω→260；120Ω→121)
6 Rated Current Code
7 Dimensions Thickness (Null=standard；06=0.6mm)
8 Soldering： Green Parts，B=Lead-Free for whole chip
9 Packaging： P - Paper tape，7" reel.
10 Rated Current Value：A90=900mA ； 6A0=6000mA

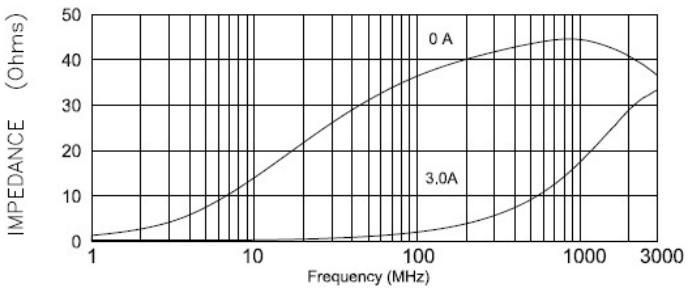
■ Typical Characteristic

MHC1005P330ZBP3A0

IMPEDANCE vs. FREQUENCY



IMPEDANCE vs. DC-bias



MHC1005P600ZBP2A5

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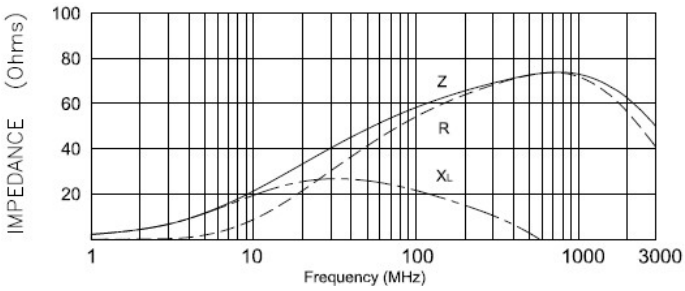
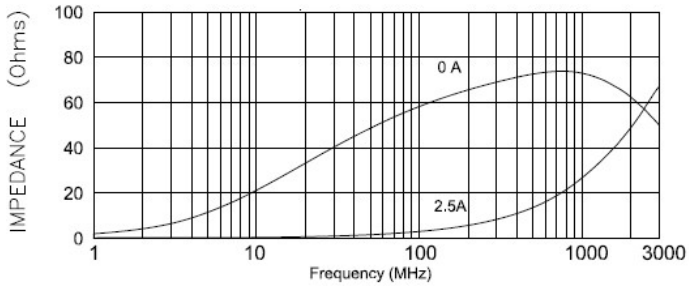


IMPEDANCE vs. DC-bias



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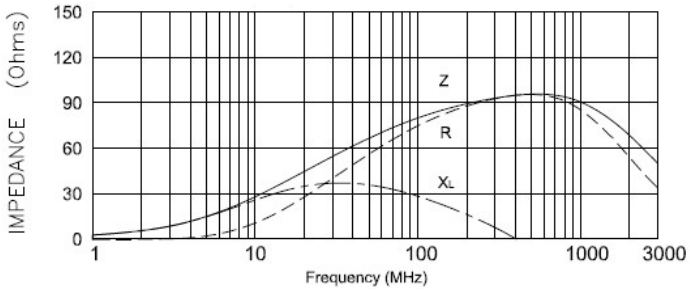
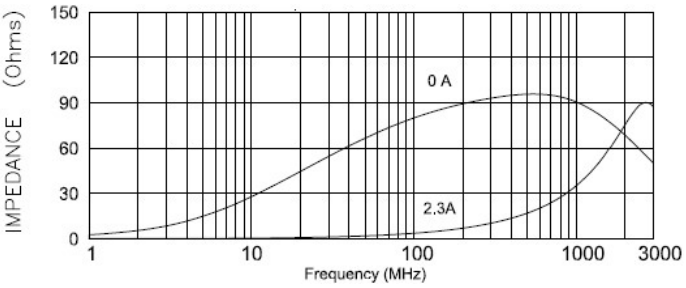


IMPEDANCE vs. DC-bias



MHC1005P121ZBP2A0

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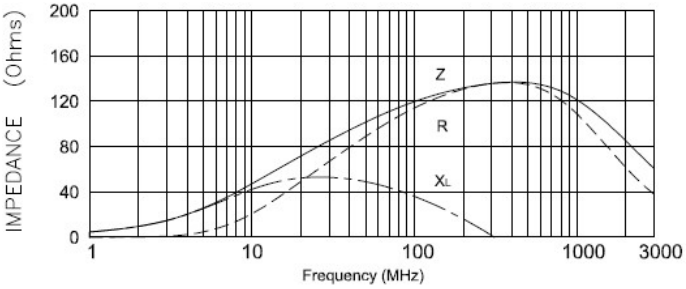
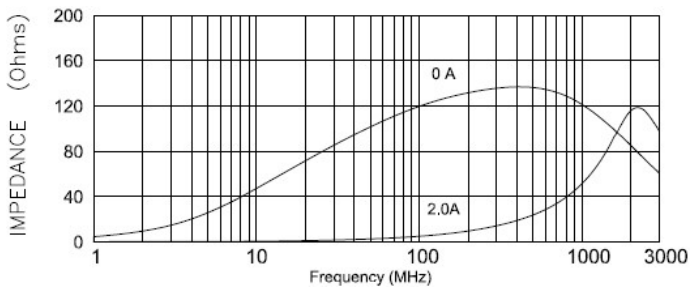


IMPEDANCE vs. DC-bias



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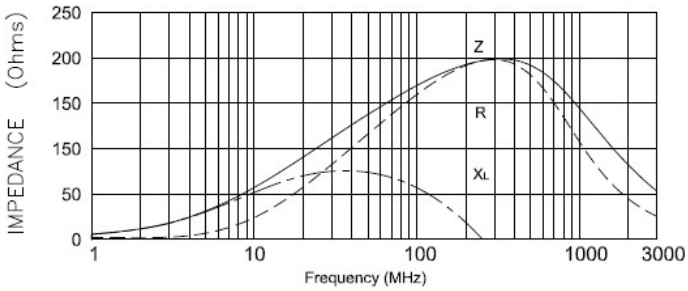
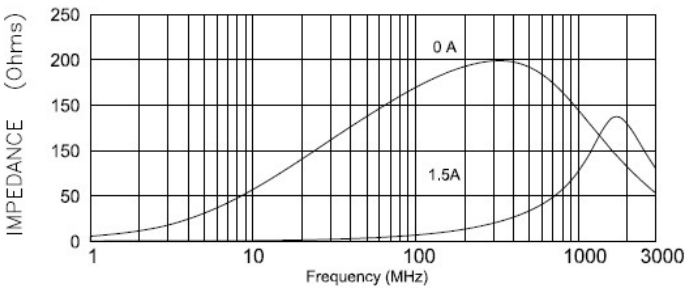


IMPEDANCE vs. DC-bias



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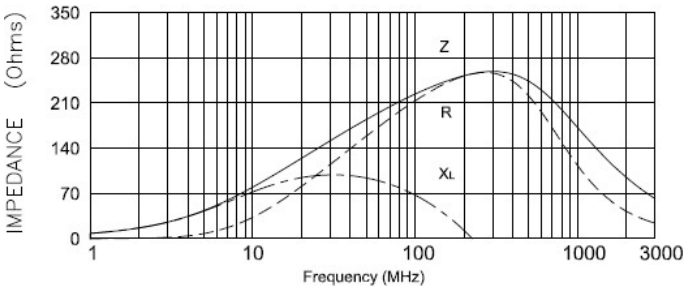
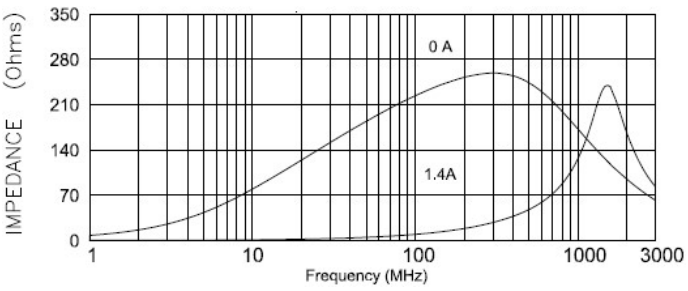


IMPEDANCE vs. DC-bias



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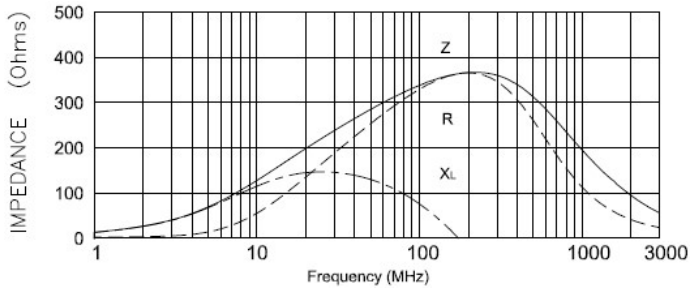
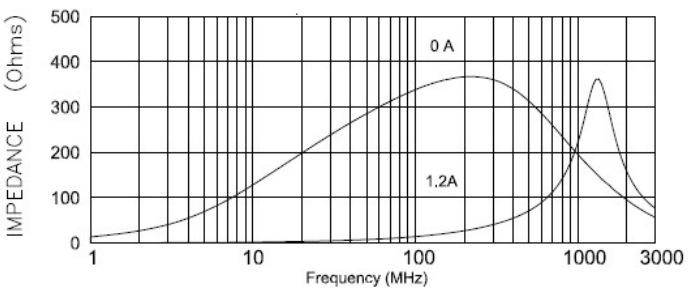


IMPEDANCE vs. DC-bias



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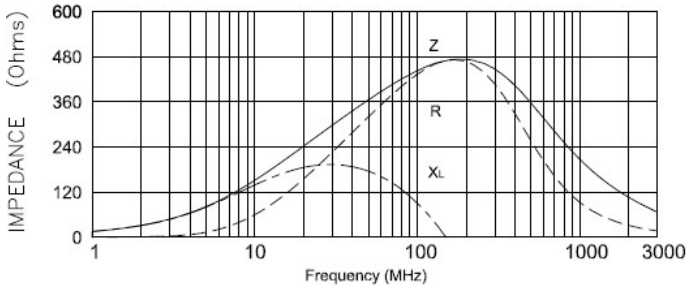
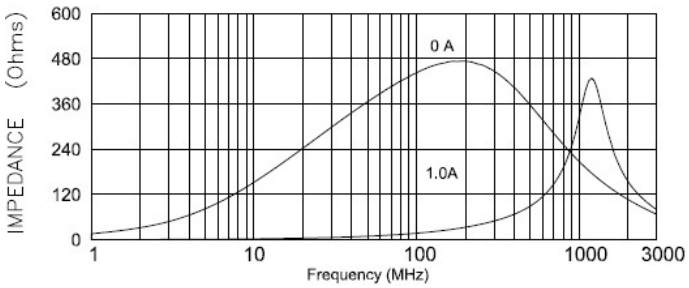


IMPEDANCE vs. DC-bias



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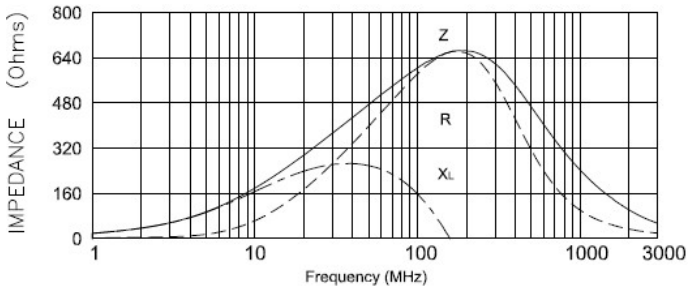
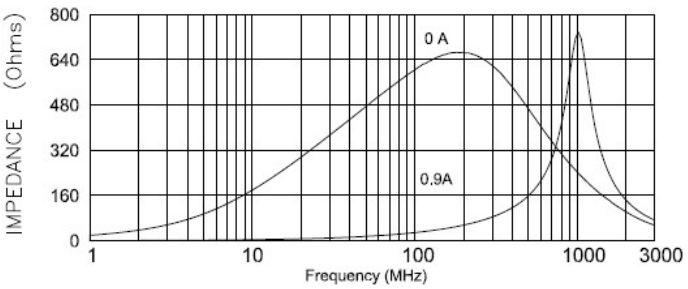


IMPEDANCE vs. DC-bias



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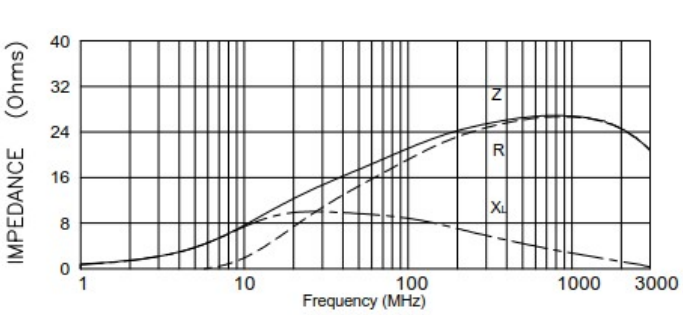
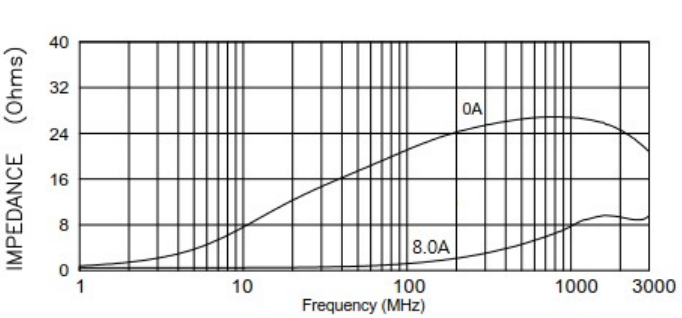


IMPEDANCE vs. DC-bias



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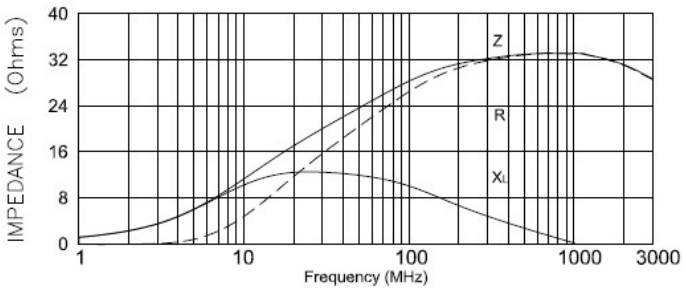
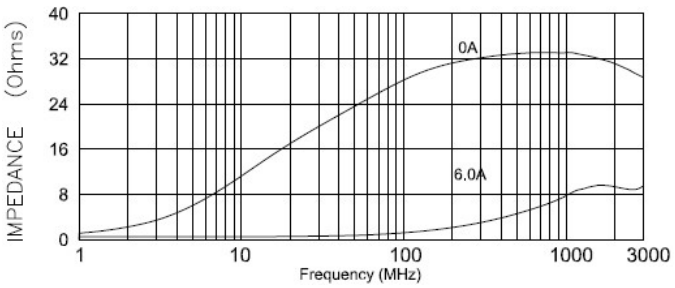


IMPEDANCE vs. DC-bias



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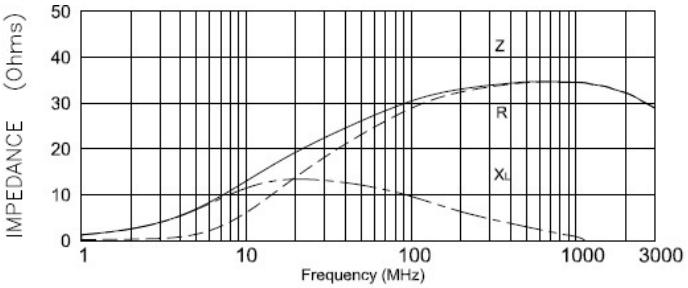
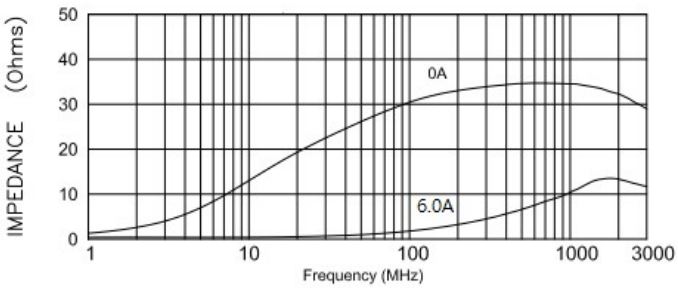


IMPEDANCE vs. DC-bias



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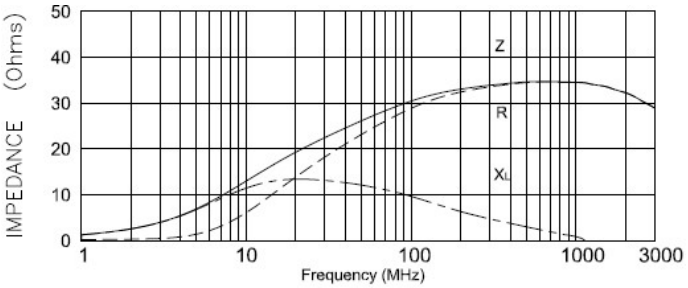

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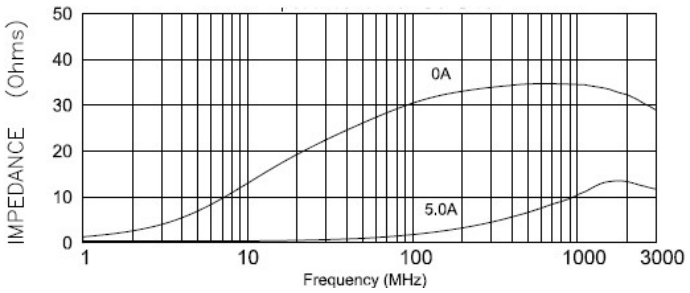

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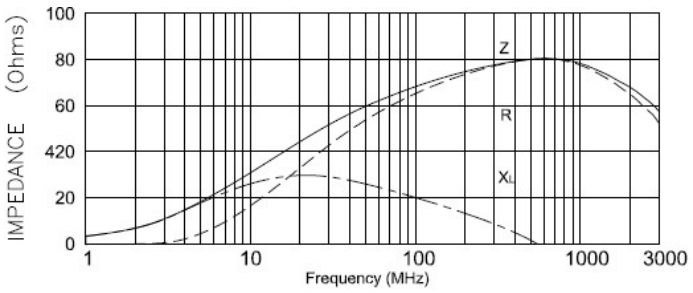

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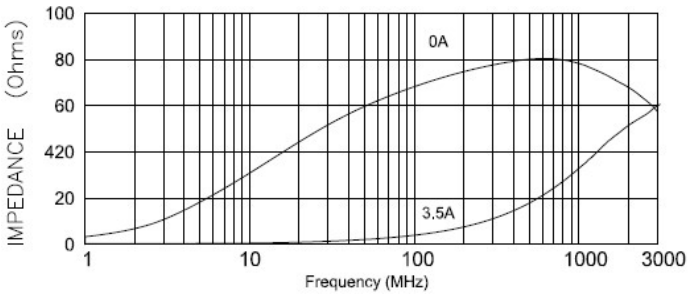

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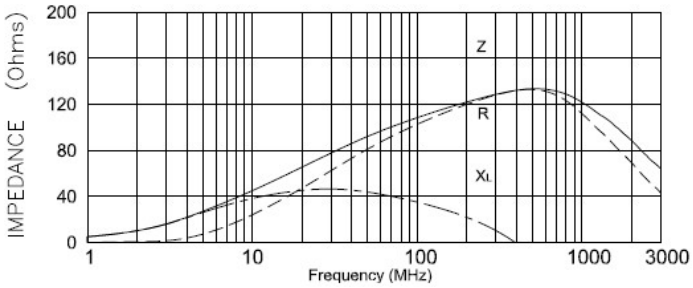

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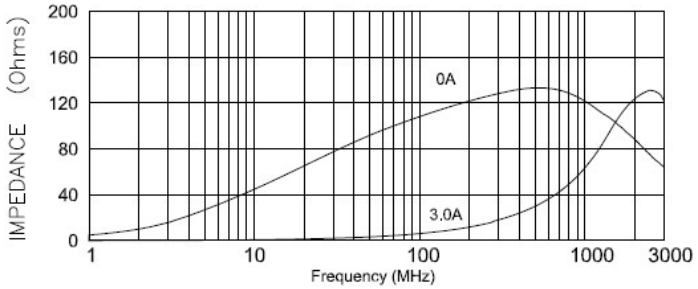

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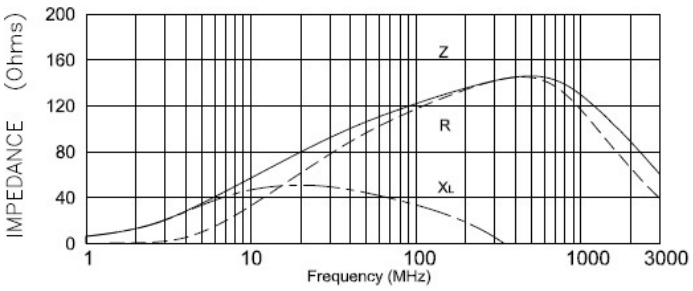
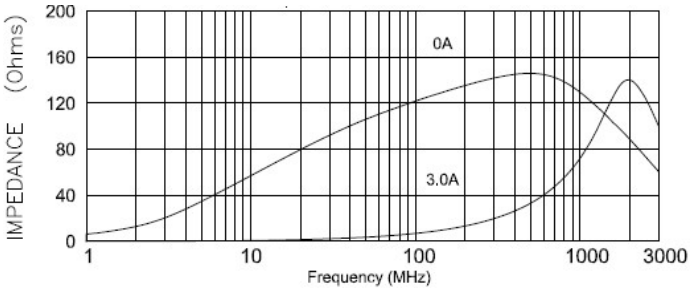


IMPEDANCE vs. DC-bias



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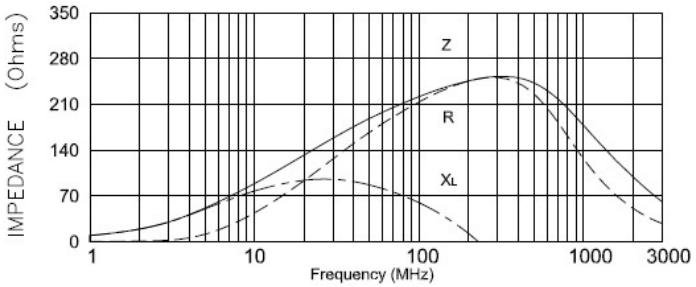
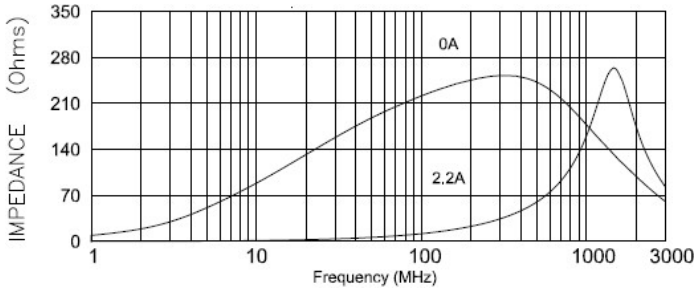


IMPEDANCE vs. DC-bias



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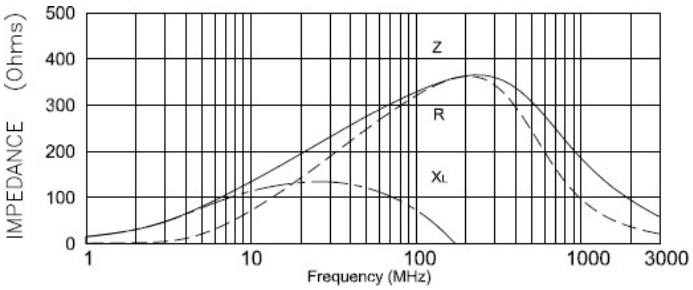
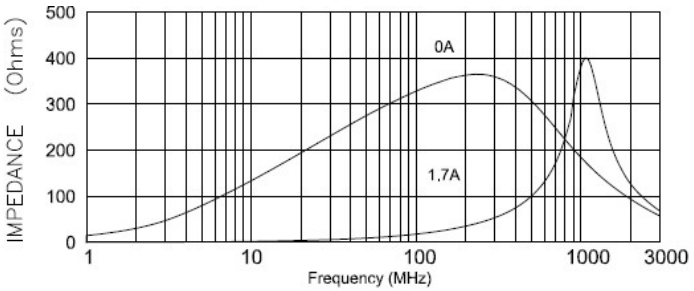


IMPEDANCE vs. DC-bias



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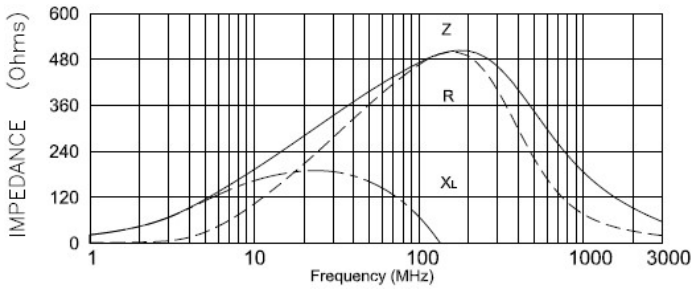
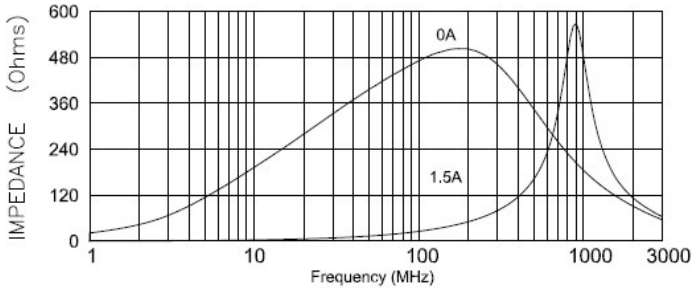


IMPEDANCE vs. DC-bias



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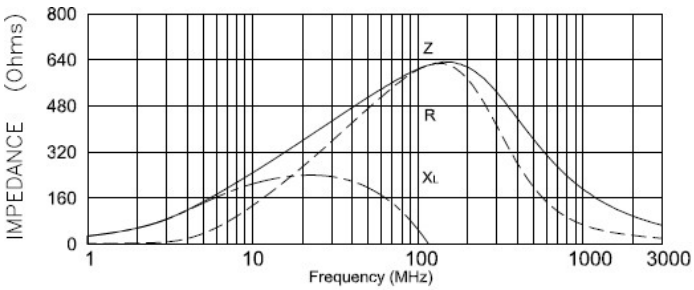
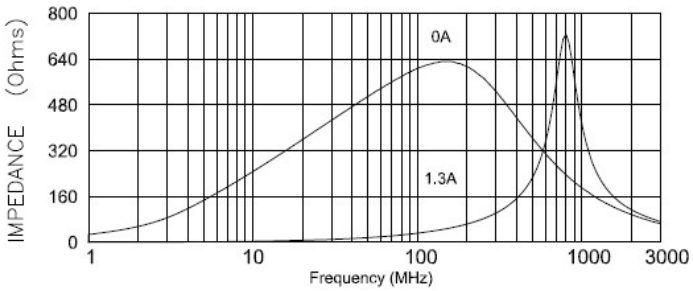
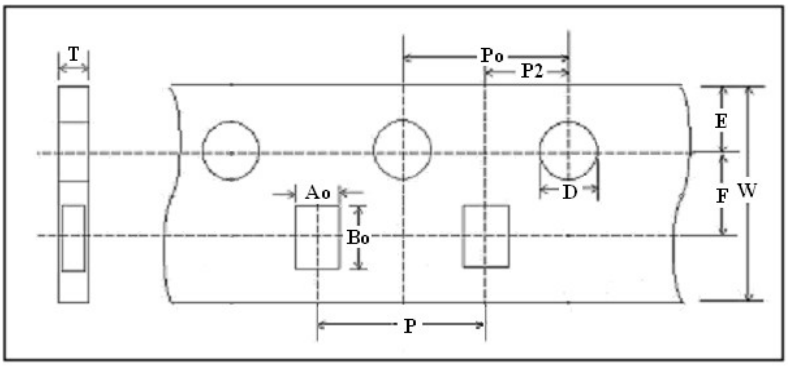


IMPEDANCE vs. DC-bias



■ Tape and Reel Specifications

Paper carrier

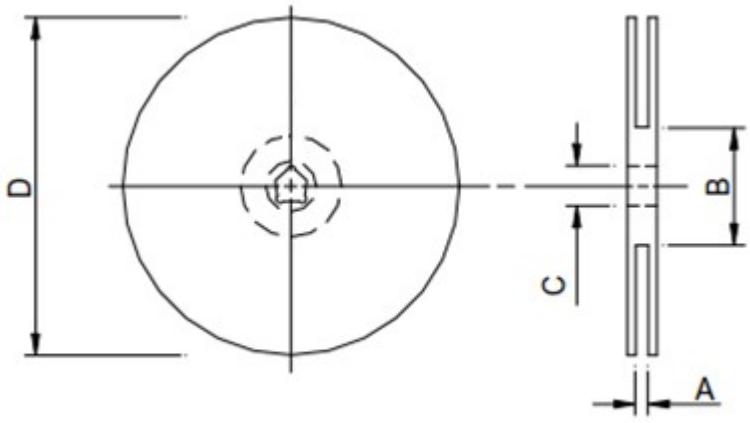


■ Taping Dimensions

Unit：mm

Size	**1005**	**1608(T:06)**	**1608(T:08)**
Symbol	Paper	Paper	Paper
W	8.00±0.10	8.00±0.10	8.00±0.10
P	2.00±0.05	4.00±0.10	4.00±0.10
E	1.75±0.05	1.75±0.10	1.75±0.10
F	3.50±0.05	3.50±0.10	3.50±0.10
D	1.55±0.05	1.56±0.10	1.56±0.10
Po	4.00±0.10	4.00±0.10	4.00±0.10
P2	2.00±0.05	2.00±0.10	2.00±0.10
Ao	0.62±0.03	0.97±0.05	1.05±0.05
Bo	1.12±0.03	1.80±0.05	1.85±0.05
Ko(T)	0.60±0.03	0.75±0.05	0.95±0.05

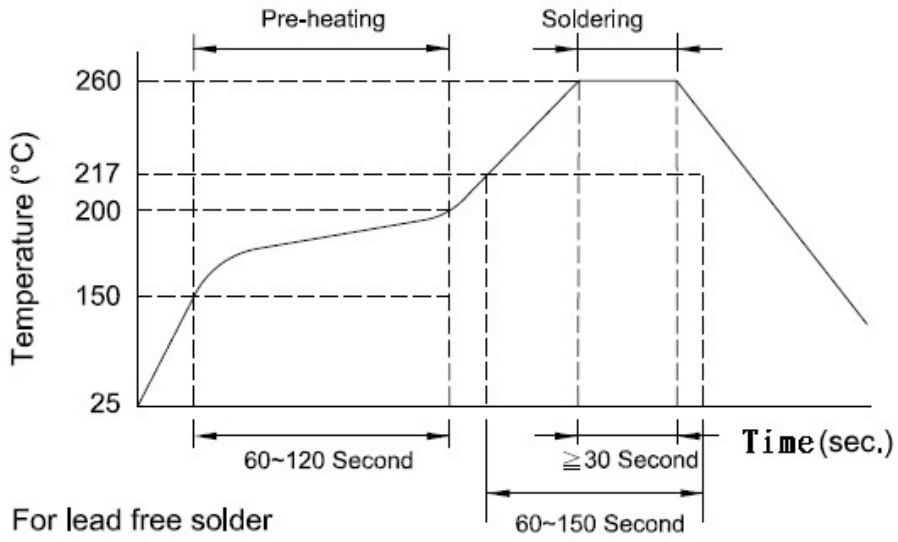
■ Reel Dimensions



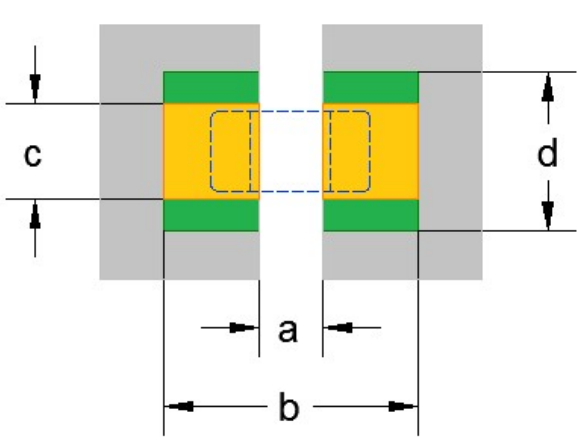
Type	7"
A(mm)	10±1.5
B(mm)	50 or more
C(mm)	13.2±1.0
D(mm)	178±2.0

7" Reel Packaging Quantity		
Part Size (EIA Size)	**1005 (0402)**	**1608 (0603)**
Qty.(pcs)	10,000	4,000
BOX	5 reels / inner box	5 reels / inner box

■ Recommended Soldering Conditions



■ Land Patterns for Reflow Soldering



Solder Pad
Solder Pad under solder mask
Solder Mask

■ Solder Land Information

Size (mm)	Rated current (A)	a (mm)	b (mm)	c (mm)	d (mm)		
					18um	35um	70um
1005	Max. 1.5	0.40	1.20 ～ 1.40	0.50	0.6	0.6	0.5
	Max. 2.2				1.3	0.8	0.5
	Max. 3.0				2.5	1.3	0.5
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	1. Temperature:-55 ~ +125℃ For 30 minutes each 2. Cycle: 100 cycles 3. Measurement: at ambient temperature 24 hours after test completion	1. No mechanical damage 2. Impedance should be within ±30% of the initial value
Operational Life	1. Temperature: 125 ± 5℃ 2. Testing time: 1000 hrs 3. Applied current: Full rated current 4. Measurement: At ambient temperature 24 hours after test completion	1. No mechanical damage 2. Impedance should be within ±30% of the initial value
Biased Humidity	1. Temperature: 40℃ ± 2℃ 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	1. No mechanical damage 2. Impedance should be within ±30% of the initial value
Solderability	1. Solder temperature : 235 ± 5℃ 2. Flux : Rosin 3. DIP time : 5 ± 1 sec	1. More than 95 % of terminal electrode should be covered with new solder 2. No mechanical damage
Resistance to Solder Heat	1. Solder temperature : 260 ± 5℃ 2. Flux : Rosin 3. DIP time : 10 ± 1 sec	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℃ 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℃