

# Chip Bead ; CIB/CIM Series

## For EMI Suppression



### Feature

- Smallest beads suitable for surface mounting
- Perfect shape for automatic mounting, with no directionality.
- Excellent solderability and high heat resistance for either flow or reflow soldering.
- Monolithic inorganic material construction for high reliability.
- Closed magnetic circuit configuration avoids crosstalk and is suitable for high density PCBs.

### Application

- High frequency EMI prevention application to computers, printers, VCRs, TVs and mobile phones.

The CIB/CIM Series are used for EMI suppression filter. These beads suppress electro-magnetic wave noise by increased impedance, especially by increased resistance at noise frequency.

#### CIB Series

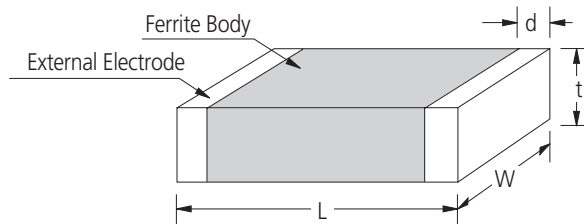
The CIB Series is composed of mono-layer internal conductor that allows low impedance and low DC resistance.

#### CIM Series

The CIM Series display high impedance because it is composed of a multilayered internal conductor and has excellent attenuation characteristics for wide band frequencies.

Operating Temp	-55~+125℃
Storage Temp (After mounting)	-55~+125℃

### Dimensions



Unit: mm

SIZE CODE	L	W	t	d
03	0.6±0.03	0.3±0.03	0.3±0.03	0.15±0.05
05	1.0±0.05	0.5±0.05	0.5±0.05	0.25±0.1
10	1.6±0.15	0.8±0.15	0.8±0.15	0.3±0.2
21	2.0±0.2	1.25±0.2	0.9±0.2	0.5+ 0.2,-0.3
31	3.2±0.2	1.6±0.2	1.1±0.2	0.5+ 0.2,-0.3
32	3.2±0.2	2.5±0.2	1.3±0.2	0.5±0.3
41	4.5±0.2	1.6±0.2	1.6±0.2/1.2±0.2	0.5±0.3

### Part Numbering

**C** (1)   **M** (2)   **03** (3)   **J** (4)   **121** (5)   **N** (6)   **C** (7)

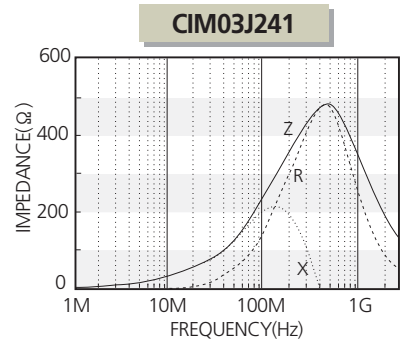
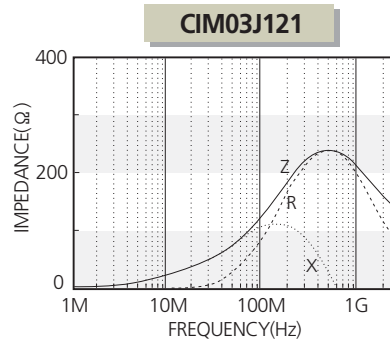
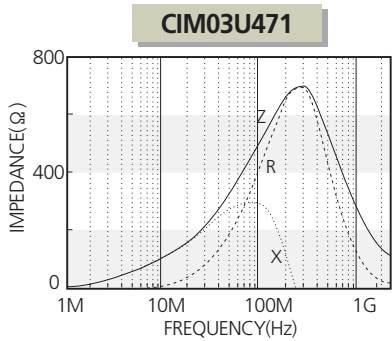
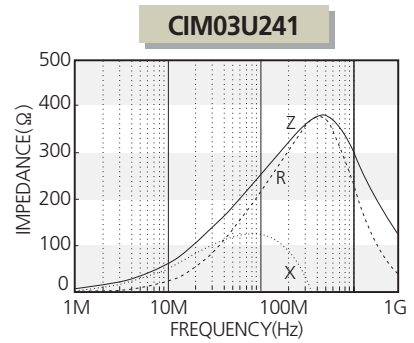
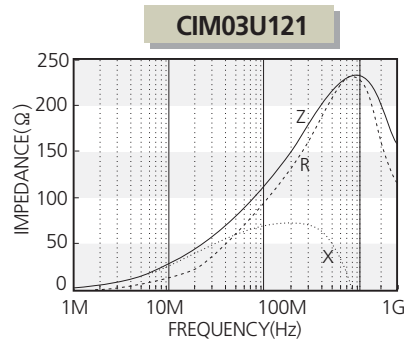
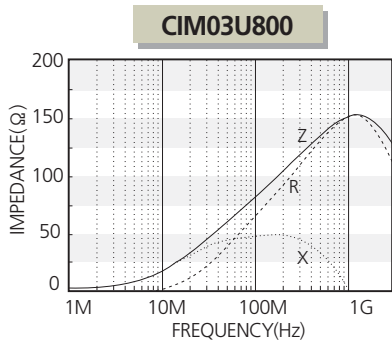
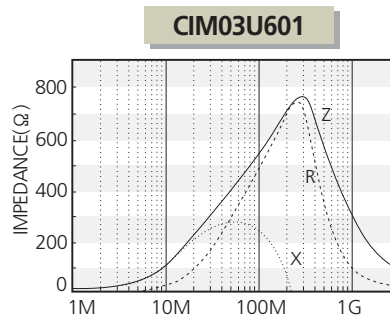
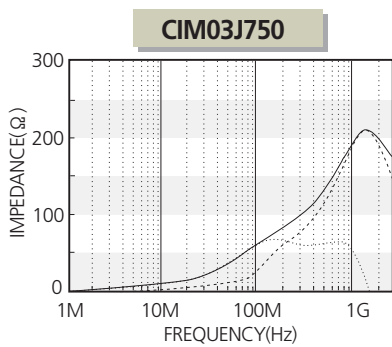
- (1) Chip Beads
- (2) B: Mono-layer type, M: Multi-layer type
- (3) Dimension
- (4) Material Code
- (5) Nominal impedance (110: 11Ω ; 121: 120Ω)
- (6) Thickness option (N: Standard, A: Thinner than standard, B: Thicker than standard)
- (7) Packaging (C: paper tape, E: embossed tape)

### CIM 0603(0201) Type

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIM 03U 800N □	0.3 $\pm$ 0.03	80	0.40	200
CIM 03U 121N □	0.3 $\pm$ 0.03	120	0.50	200
CIM 03U 241N □	0.3 $\pm$ 0.03	240	0.75	200
CIM 03U 471N □	0.3 $\pm$ 0.03	470	1.30	100
CIM 03U 601N □	0.3 $\pm$ 0.03	600	1.50	100
CIM 03J 750N □	0.3 $\pm$ 0.03	75	0.50	300
CIM 03J 121N □	0.3 $\pm$ 0.03	120	0.50	200
CIM 03J 241N □	0.3 $\pm$ 0.03	240	1.00	100

\* Test equipment : Agilent E4991A +16197A or Equivalent

### Electrical Characteristics



**CIB/CIM1005(0402) Type**

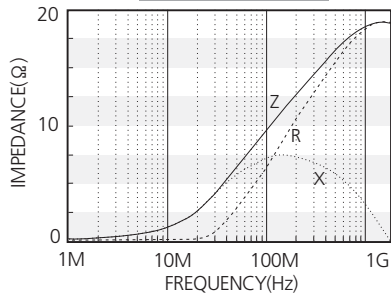
Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIB 05J 100 N□	0.5±0.05	10(typ.)	0.05	1200
CIM 05U 100 N□	0.5±0.05	10	0.05	1200
CIM 05U 300 N□	0.5±0.05	30	0.10	700
CIM 05U 600 N□	0.5±0.05	60	0.15	600
CIM 05U 800 N□	0.5±0.05	80	0.20	600
CIM 05U 121 N□	0.5±0.05	120	0.25	600
CIM 05U 221 N□	0.5±0.05	220	0.35	500
CIM 05U 241 N□	0.5±0.05	240	0.35	400
CIM 05U 301 N□	0.5±0.05	300	0.45	400
CIM 05U 471 N□	0.5±0.05	470	0.55	300
CIM 05U 601 N□	0.5±0.05	600	0.60	300
CIM 05U 102 N□	0.5±0.05	1000	0.80	300
CIM 05J 300 N□	0.5±0.05	30	0.20	700
CIM 05J 600 N□	0.5±0.05	60	0.20	650
CIM 05J 800 N□	0.5±0.05	80	0.25	600
CIM 05J 121 N□	0.5±0.05	120	0.25	500
CIM 05J 221 N□	0.5±0.05	220	0.35	400
CIM 05J 241 N□	0.5±0.05	240	0.35	400
CIM 05J 301 N□	0.5±0.05	300	0.45	400
CIM 05J 471 N□	0.5±0.05	470	0.55	300
CIM 05J 601 N□	0.5±0.05	600	0.60	300
CIM 05J 102 N□	0.5±0.05	1000	0.80	250
CIM 05J 152 N□	0.5±0.05	1500	1.00	250
CIM 05J 182 N□	0.5±0.05	1800	1.40	200
CIM 05N 750 N□	0.5±0.05	75	0.35	300
CIM 05N 121 N□	0.5±0.05	120	0.55	300
CIM 05N 221 N□	0.5±0.05	220	0.80	200
CIM 05F 050 N□	0.5±0.05	5	0.08	500
CIM 05F 100 N□	0.5±0.05	10	0.10	300
CIM 05F 220 N□	0.5±0.05	22	0.20	300
CIM 05F 470 N□	0.5±0.05	47	0.35	300
CIM 05F 750 N□	0.5±0.05	75	0.40	300
CIM 05F 121 N□	0.5±0.05	120	0.55	300
CIM 05F 221 N□	0.5±0.05	220	0.80	200
CIM 05H 800 N□	0.5±0.05	80	0.20	450
CIM 05H 121 N□	0.5±0.05	120	0.25	400
CIM 05H 241 N□	0.5±0.05	240	0.31	400
CIM 05H 431 N□	0.5±0.05	430	0.50	350
CIM 05H 601 N□	0.5±0.05	600	0.80	200

※ Test equipment: Agilent E4991A + 16192A or Equivalent

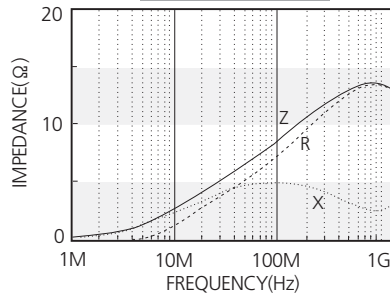
CIB/CIM Series

## Electrical Characteristics

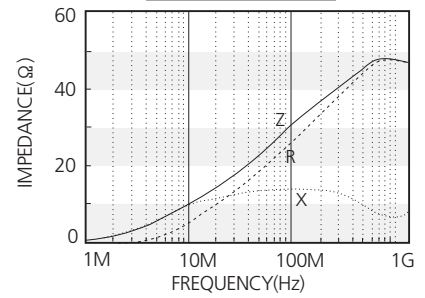
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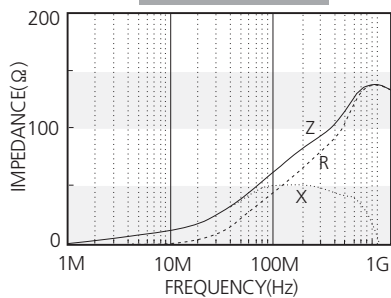
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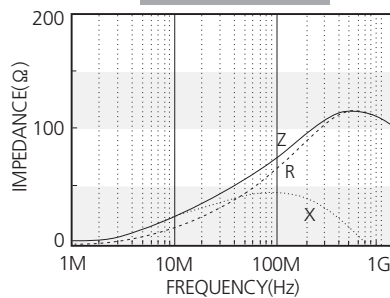
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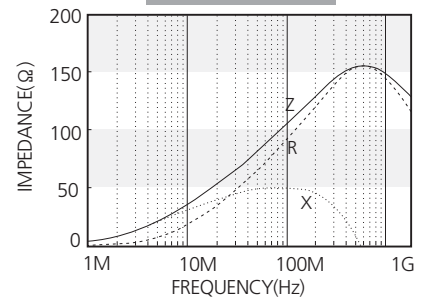
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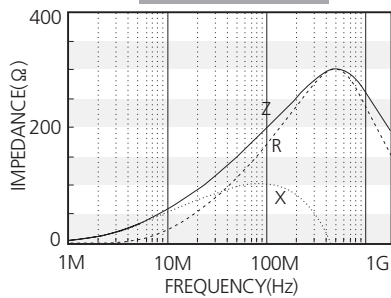
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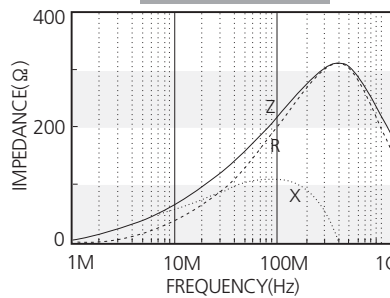
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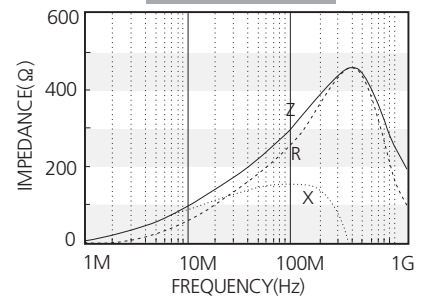
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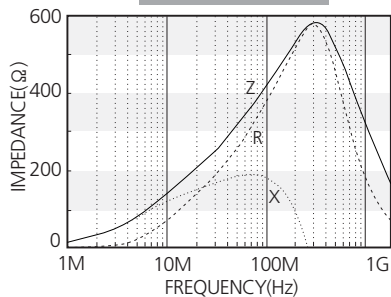
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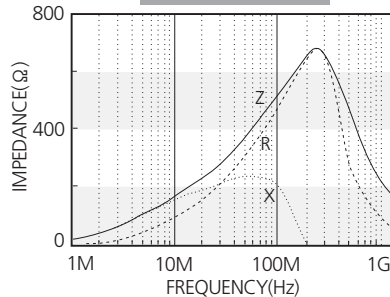
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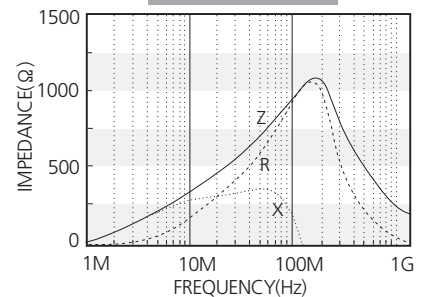
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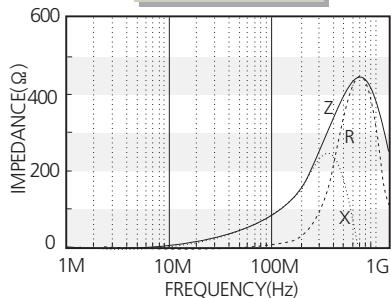
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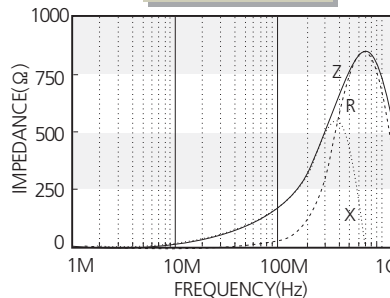
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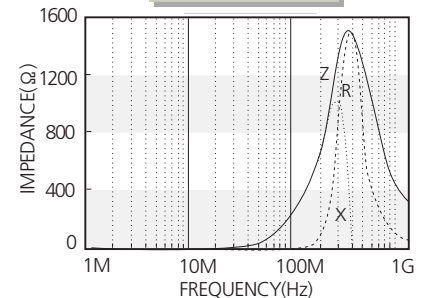
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**CIM05N121**

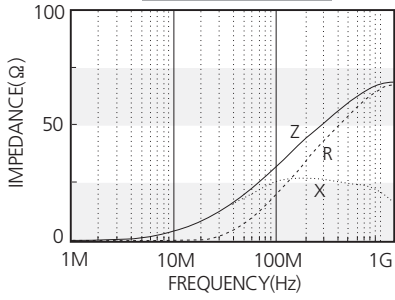


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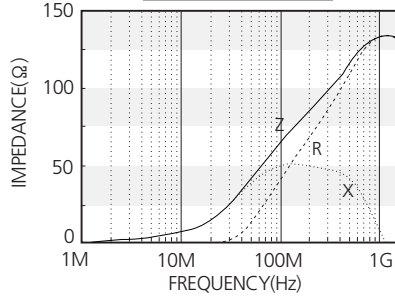


Electrical Characteristics

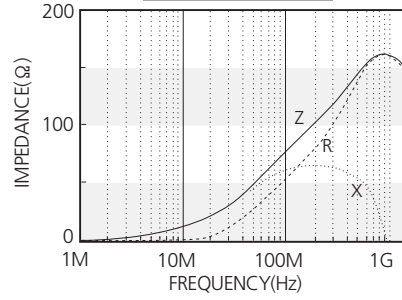
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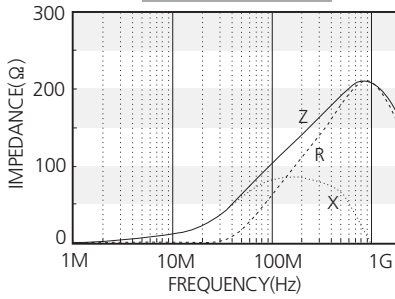
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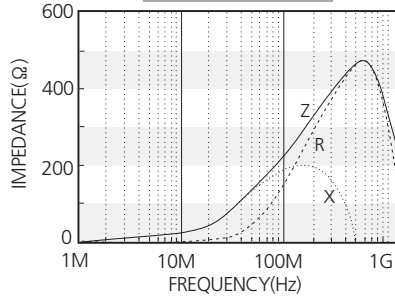
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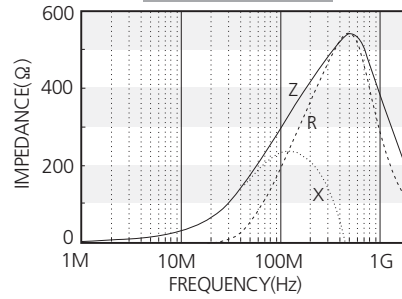
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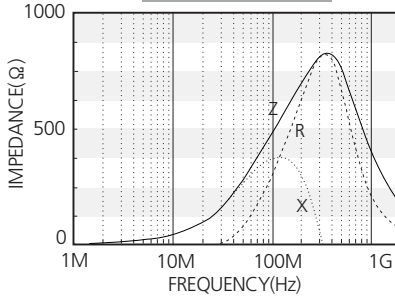
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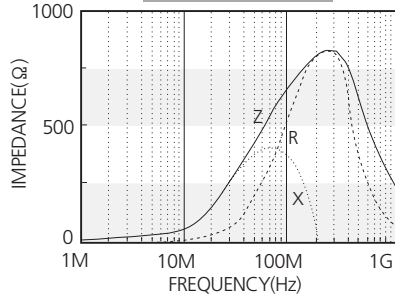
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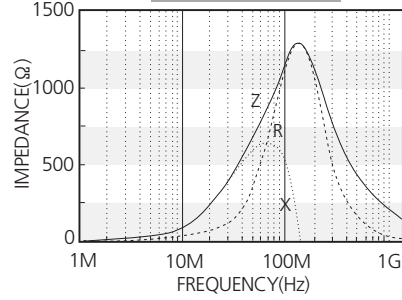
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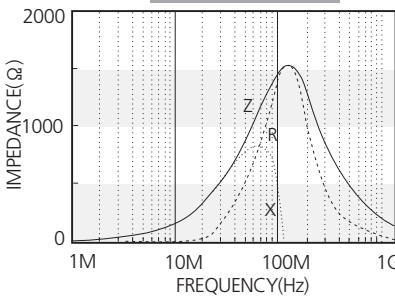
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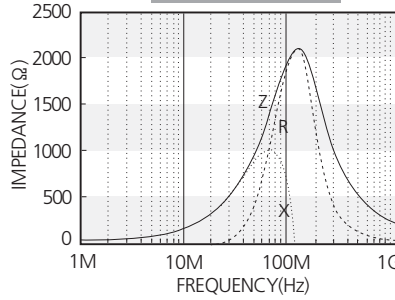
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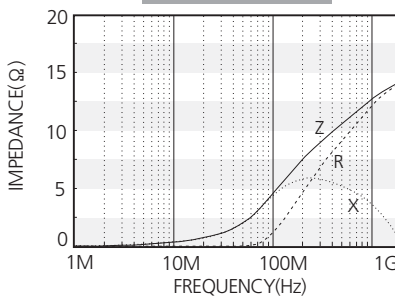
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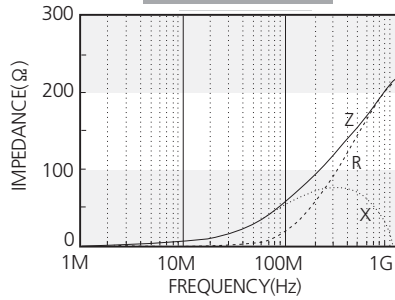
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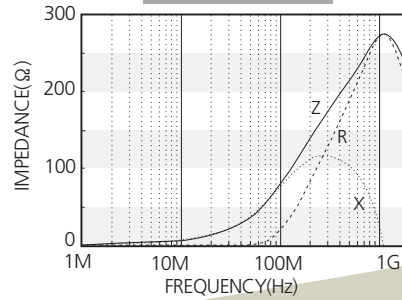
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**CIM05F470**



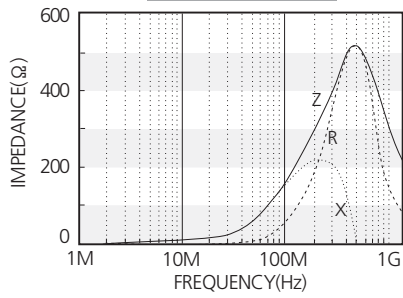
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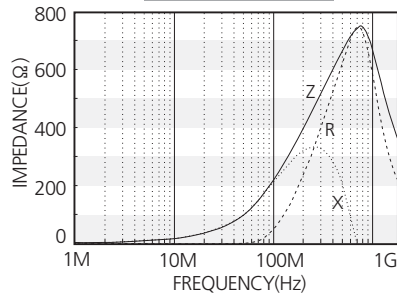
CIB/CIM  
Series

## Electrical Characteristics

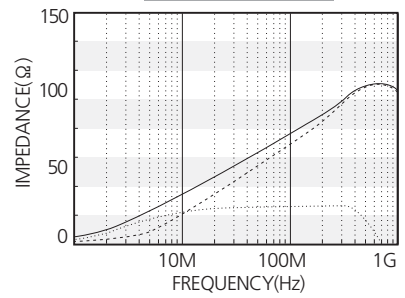
**CIM05F121**



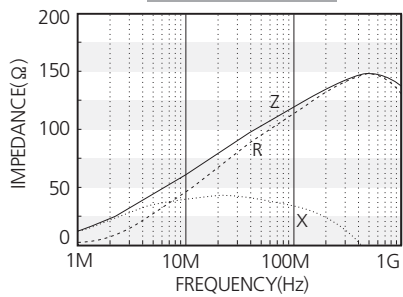
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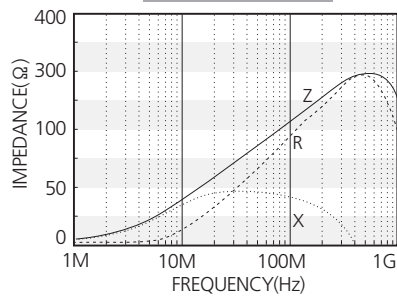
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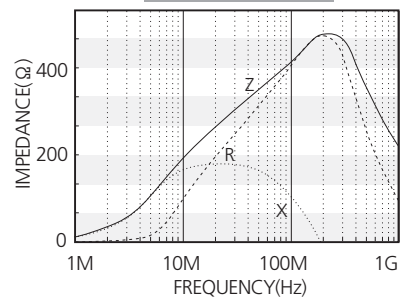
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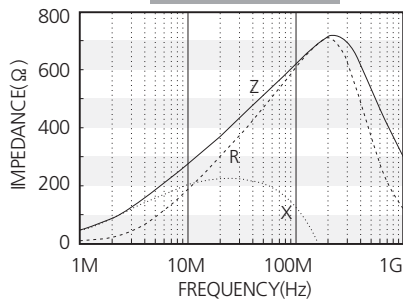
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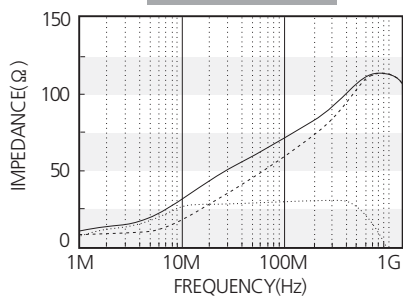
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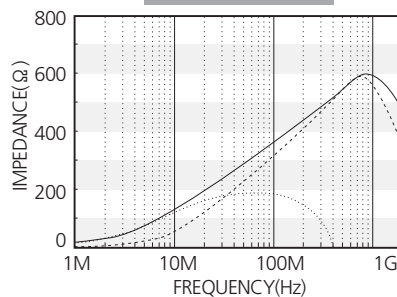
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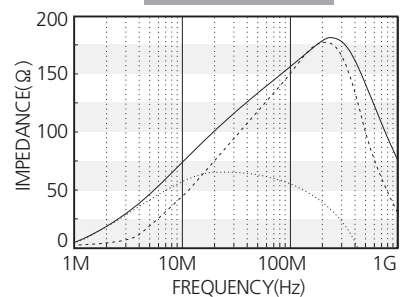
**CIM05H800**



**CIM05H241**



**CIM05H121**



**CIB/CIM 1608(0603) Type**

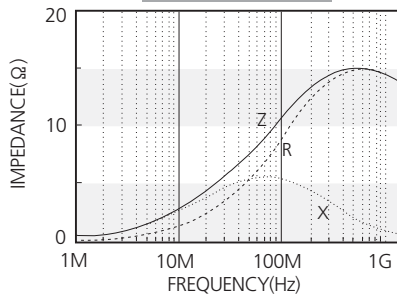
Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIB 10P 100 N □	0.8 $\pm$ 0.15	10(typ.)	0.05	1000
CIB 10P 220 N □	0.8 $\pm$ 0.15	22	0.05	1500
CIB 10P 260 N □	0.8 $\pm$ 0.15	26	0.08	1000
CIB 10P 300 N □	0.8 $\pm$ 0.15	30	0.08	1000
CIB 10P 330 N □	0.8 $\pm$ 0.15	33	0.08	1000
CIM 10U 800 N □	0.8 $\pm$ 0.15	80	0.10	600
CIM 10U 121 N □	0.8 $\pm$ 0.15	120	0.15	500
CIM 10U 221 N □	0.8 $\pm$ 0.15	220	0.25	400
CIM 10U 241 N □	0.8 $\pm$ 0.15	240	0.25	400
CIM 10U 301 N □	0.8 $\pm$ 0.15	300	0.30	500
CIM 10U 471 N □	0.8 $\pm$ 0.15	470	0.35	300
CIM 10U 601 N □	0.8 $\pm$ 0.15	600	0.38	500
CIM 10U 102 N □	0.8 $\pm$ 0.15	1000	0.50	400
CIM 10U 202 N □	0.8 $\pm$ 0.15	2000(at 70MHz)	1.20	200
CIB 10J 300 N □	0.8 $\pm$ 0.15	30	0.10	1000
CIM 10J 400 N □	0.8 $\pm$ 0.15	40	0.12	600
CIM 10J 470 N □	0.8 $\pm$ 0.15	47	0.12	600
CIM 10J 600 N □	0.8 $\pm$ 0.15	60	0.12	600
CIM 10J 750 N □	0.8 $\pm$ 0.15	75	0.15	550
CIM 10J 800 N □	0.8 $\pm$ 0.15	80	0.15	550
CIM 10J 121 N □	0.8 $\pm$ 0.15	120	0.20	500
CIM 10J 151 N □	0.8 $\pm$ 0.15	150	0.20	400
CIM 10J 221 N □	0.8 $\pm$ 0.15	220	0.30	400
CIM 10J 241 N □	0.8 $\pm$ 0.15	240	0.30	400
CIM 10J 301 N □	0.8 $\pm$ 0.15	300	0.35	400
CIM 10J 331 N □	0.8 $\pm$ 0.15	330	0.35	400
CIM 10J 471 N □	0.8 $\pm$ 0.15	470	0.35	300
CIM 10J 601 N □	0.8 $\pm$ 0.15	600	0.45	300
CIM 10J 751 N □	0.8 $\pm$ 0.15	750	0.50	300
CIM 10J 102 N □	0.8 $\pm$ 0.15	1000	0.60	250
CIM 10J 152 N □	0.8 $\pm$ 0.15	1500	0.70	250
CIM 10J 252 N □	0.8 $\pm$ 0.15	2500	1.50	200
CIM 10K 152 N □	0.8 $\pm$ 0.15	1500	0.80	250
CIM 10K 202 N □	0.8 $\pm$ 0.15	2000	1.00	200
CIM 10K 252 N □	0.8 $\pm$ 0.15	2500	1.20	200
CIM 10N 700 N □	0.8 $\pm$ 0.15	70	0.30	500
CIM 10N 121 N □	0.8 $\pm$ 0.15	120	0.45	400
CIM 10N 241 N □	0.8 $\pm$ 0.15	240	0.60	300
CIM 10F 470 N □	0.8 $\pm$ 0.15	47	0.25	550
CIM 10F 600 N □	0.8 $\pm$ 0.15	60	0.25	550
CIM 10F 121 N □	0.8 $\pm$ 0.15	120	0.30	500
CIM 10F 331 N □	0.8 $\pm$ 0.15	330	0.58	400
CIM 10F 471 N □	0.8 $\pm$ 0.15	470	0.85	300

\* Test equipment: Agilent E4991A + 16193A or Equivalent

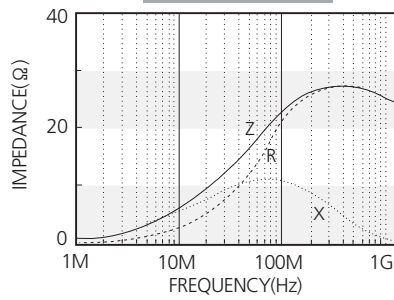


## Electrical Characteristics

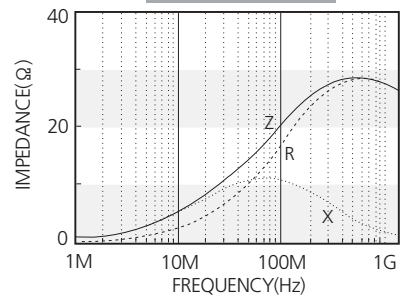
**CIB10P100**



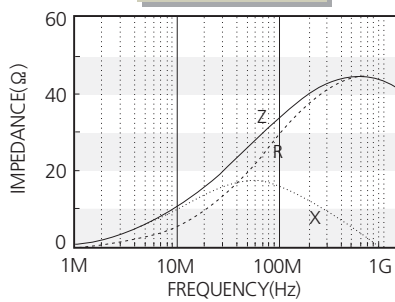
**CIB10P220**



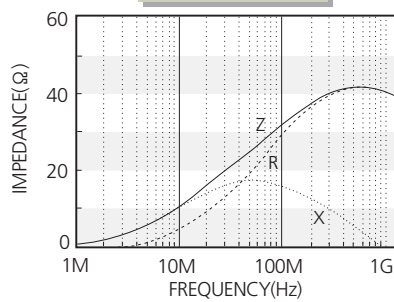
**CIB10P260**



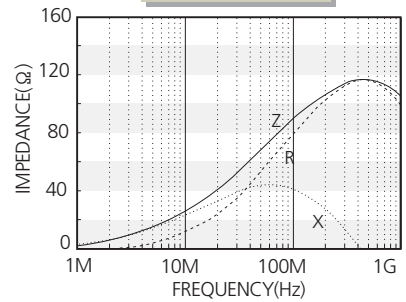
**CIB10P300**



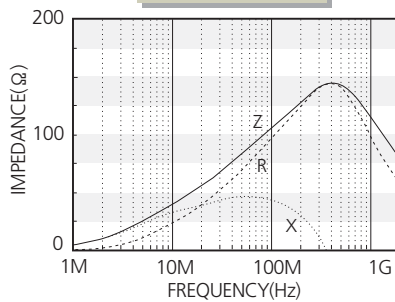
**CIB10P330**



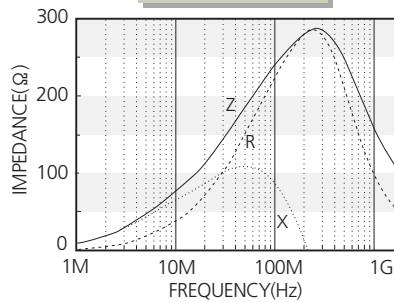
**CIM10U800**



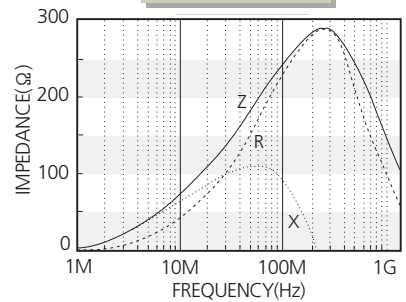
**CIM10U121**



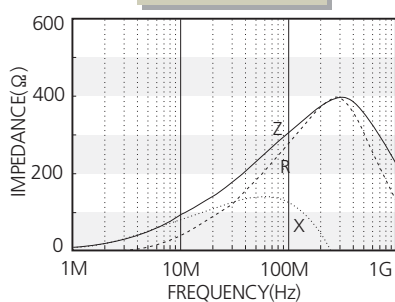
**CIM10U221**



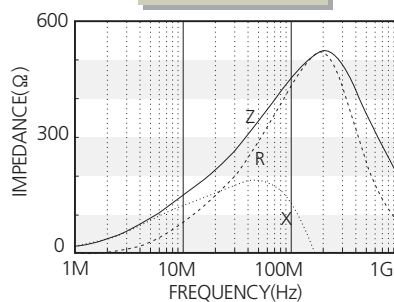
**CIM10U241**



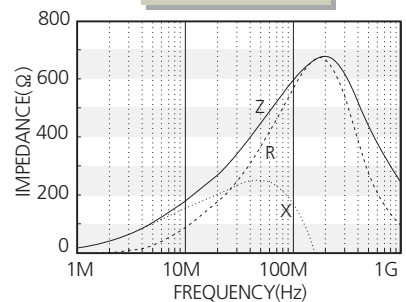
**CIM10U301**



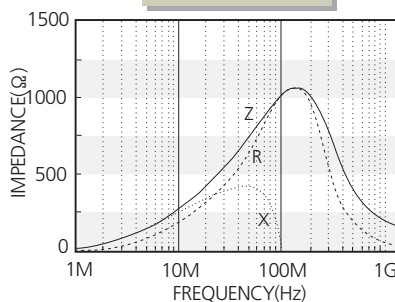
**CIM10U471**



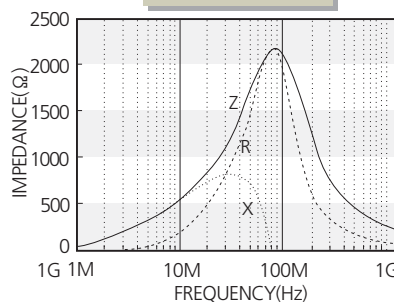
**CIM10U601**



**CIM10U102**



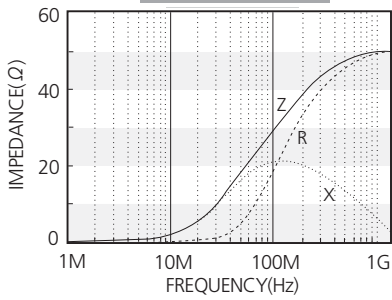
**CIM10U202**



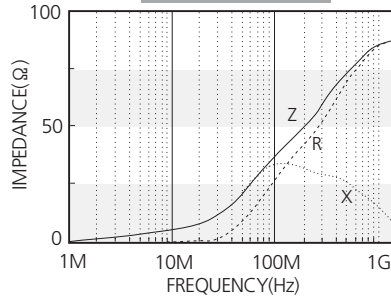


Electrical Characteristics

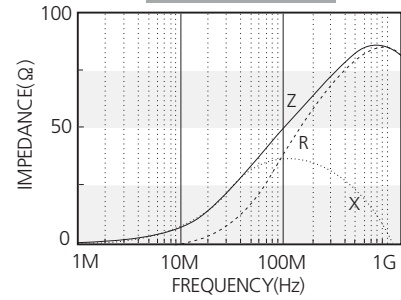
**CIB10J300**



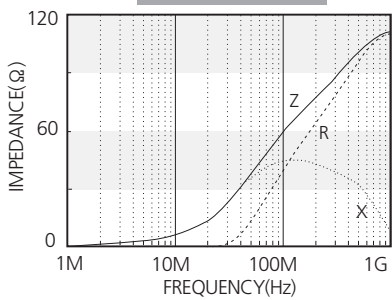
**CIM10J400**



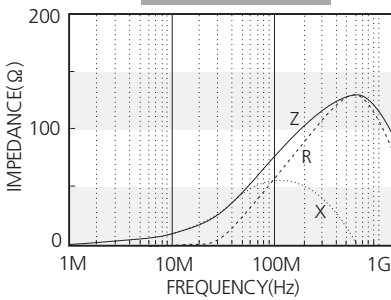
**CIM10J470**



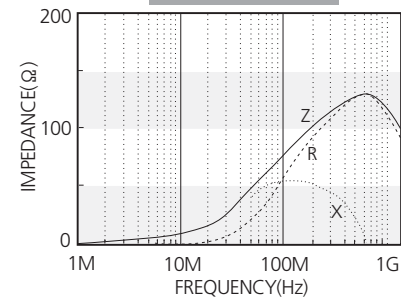
**CIM10J600**



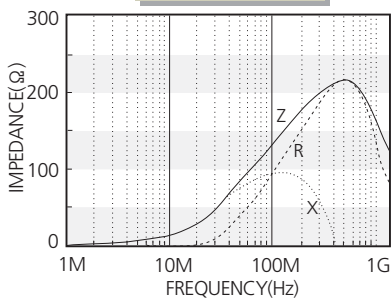
**CIM10J750**



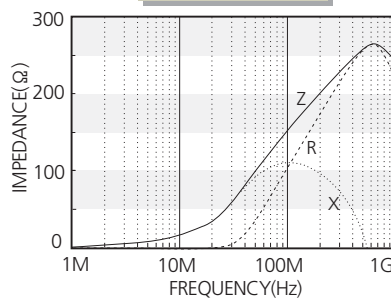
**CIM10J800**



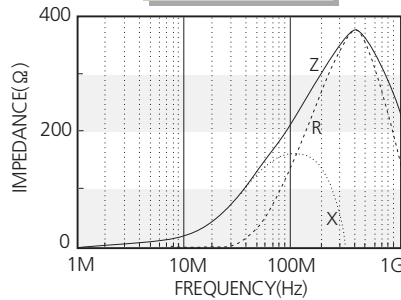
**CIM10J121**



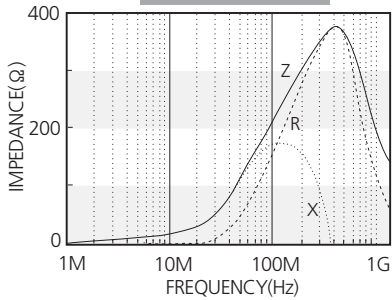
**CIM10J151**



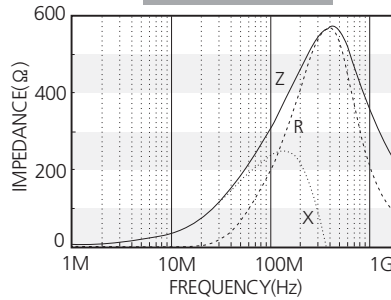
**CIM10J221**



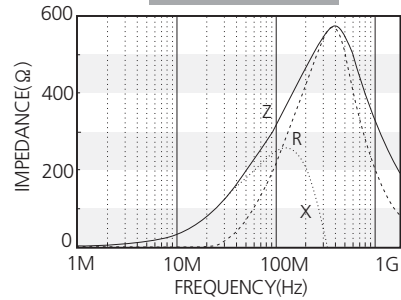
**CIM10J241**



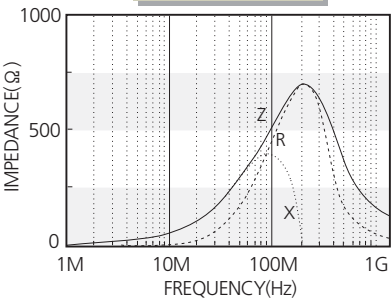
**CIM10J301**



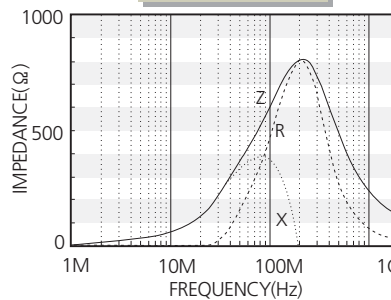
**CIM10J331**



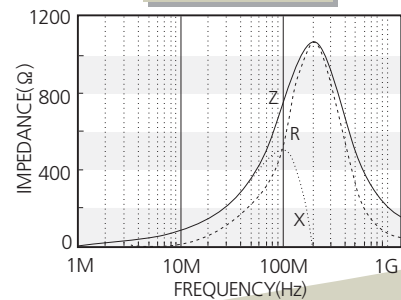
**CIM10J471**



**CIM10J601**



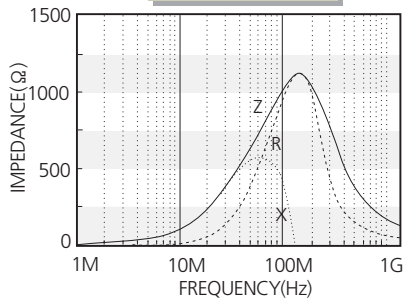
**CIM10J751**



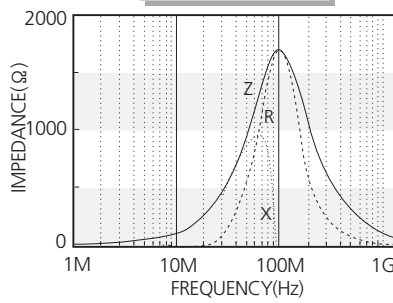
CIB/CIM  
Series

**Electrical Characteristics**

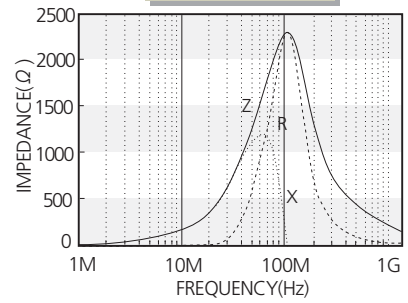
**CIM10J102**



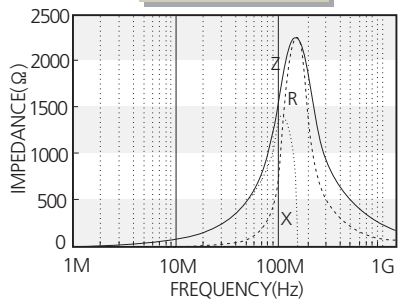
**CIM10J152**



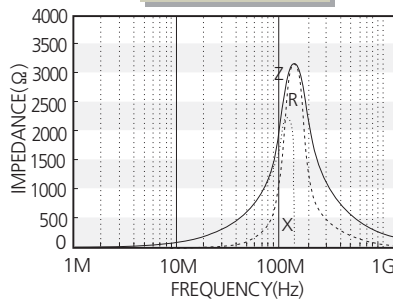
**CIM10J252**



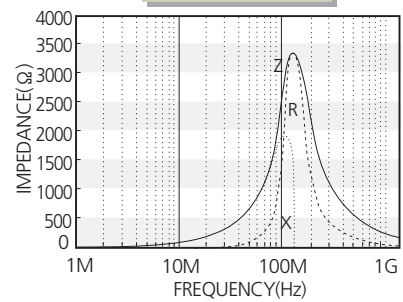
**CIM10K152**



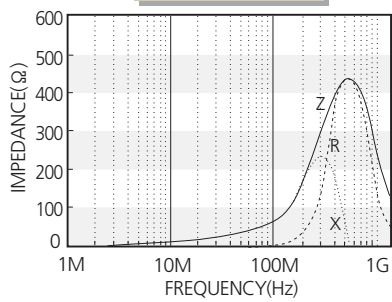
**CIM10K202**



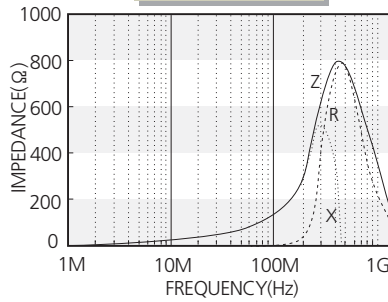
**CIM10K252**



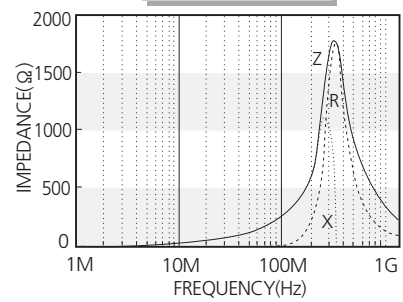
**CIM10N700**



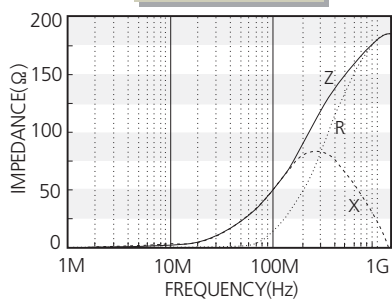
**CIM10N121**



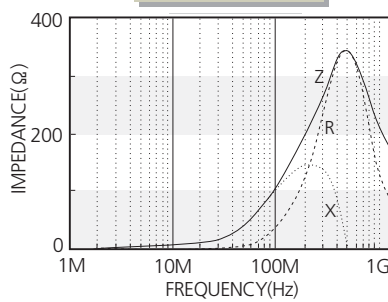
**CIM10N241**



**CIM10F600**



**CIM10F121**



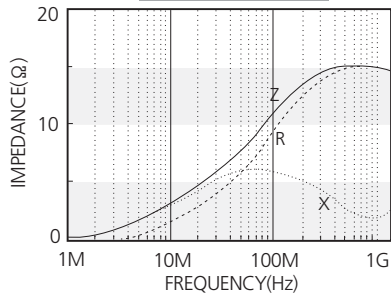
**CIB/CIM 2012(0805) Type**

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIB 21P 110 N □	0.9 $\pm$ 0.2	11(typ.)	0.01	2000
CIB 21P 150 N □	0.9 $\pm$ 0.2	15	0.01	2000
CIB 21P 260 N □	0.9 $\pm$ 0.2	26	0.01	2000
CIB 21P 300 N □	0.9 $\pm$ 0.2	30	0.05	2000
CIB 21P 330 N □	0.9 $\pm$ 0.2	33	0.05	1500
CIB 21P 470 N □	0.9 $\pm$ 0.2	47	0.05	1500
CIB 21U 600 N □	0.9 $\pm$ 0.2	60	0.08	900
CIM 21U 800 N □	0.9 $\pm$ 0.2	80	0.10	900
CIM 21U 101 N □	0.9 $\pm$ 0.2	100	0.10	800
CIM 21U 121 N □	0.9 $\pm$ 0.2	120	0.10	800
CIM 21U 151 N □	0.9 $\pm$ 0.2	150	0.15	600
CIM 21U 241 N □	0.9 $\pm$ 0.2	240	0.15	600
CIM 21U 301 N □	0.9 $\pm$ 0.2	300	0.15	500
CIM 21U 471 N □	0.9 $\pm$ 0.2	470	0.30	500
CIM 21U 601 N □	0.9 $\pm$ 0.2	600	0.30	500
CIM 21U 102 N □	0.9 $\pm$ 0.2	1000(at 70MHz)	0.40	500
CIM 21U 202 N □	0.9 $\pm$ 0.2	2000(at 70MHz)	0.70	300
CIB 21J 260 N □	0.9 $\pm$ 0.2	26	0.05	2000
CIB 21J 300 N □	0.9 $\pm$ 0.2	30	0.05	2000
CIB 21J 400 N □	0.9 $\pm$ 0.2	40	0.05	2000
CIM 21J 600 N □	0.9 $\pm$ 0.2	60	0.08	900
CIM 21J 800 N □	0.9 $\pm$ 0.2	80	0.08	1000
CIM 21J 121 N □	0.9 $\pm$ 0.2	120	0.15	800
CIM 21J 151 N □	0.9 $\pm$ 0.2	150	0.15	500
CIM 21J 221 N □	0.9 $\pm$ 0.2	220	0.20	500
CIM 21J 241 N □	0.9 $\pm$ 0.2	240	0.20	500
CIM 21J 301 N □	0.9 $\pm$ 0.2	300	0.20	500
CIM 21J 471 N □	0.9 $\pm$ 0.2	470	0.25	500
CIM 21J 601 N □	0.9 $\pm$ 0.2	600	0.25	500
CIM 21J 751 N □	0.9 $\pm$ 0.2	750	0.35	400
CIM 21J 102 N □	0.9 $\pm$ 0.2	1000	0.35	500
CIM 21J 152 N □	0.9 $\pm$ 0.2	1500(at 70MHz)	0.45	500
CIM 21J 182 N □	0.9 $\pm$ 0.2	1800(at 70MHz)	0.45	500
CIM 21J 202 N □	0.9 $\pm$ 0.2	2000(at 70MHz)	0.50	500
CIM 21J 222 N □	0.9 $\pm$ 0.2	2200(at 70MHz)	0.70	300
CIM 21J 252 N □	0.9 $\pm$ 0.2	2500(at 50MHz)	0.70	300
CIM 21J 302 N □	0.9 $\pm$ 0.2	3000(at 50MHz)	0.60	300
CIM 21K 152 N □	0.9 $\pm$ 0.2	1500	0.45	300
CIM 21K 252 N □	0.9 $\pm$ 0.2	2500	0.80	250
CIM 21N 560 N □	0.9 $\pm$ 0.2	56	0.20	600
CIM 21N 700 N □	0.9 $\pm$ 0.2	70	0.20	600
CIM 21N 121 N □	0.9 $\pm$ 0.2	120	0.25	500
CIM 21N 241 N □	0.9 $\pm$ 0.2	240	0.30	400

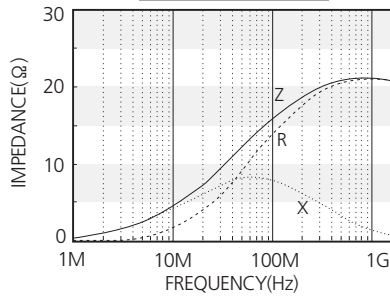
※ Test equipment: Agilent E4991A + 16193A or Equivalent

**Electrical Characteristics**

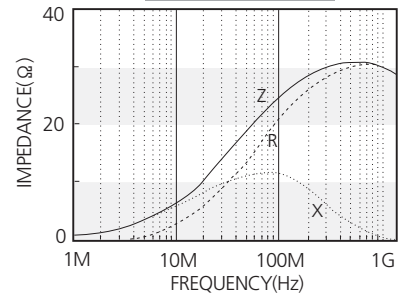
**CIB21P110**



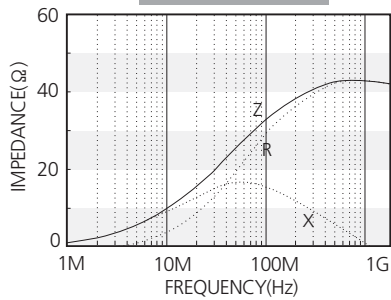
**CIB21P150**



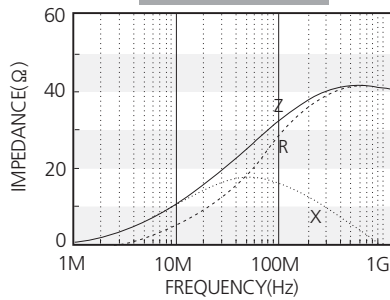
**CIB21P260**



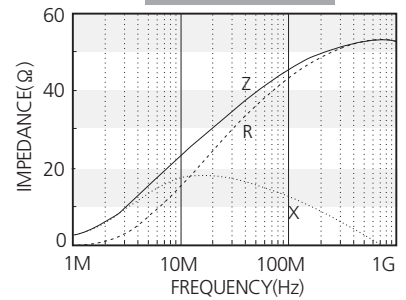
**CIB21P300**



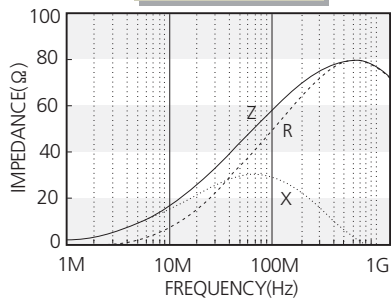
**CIB21P330**



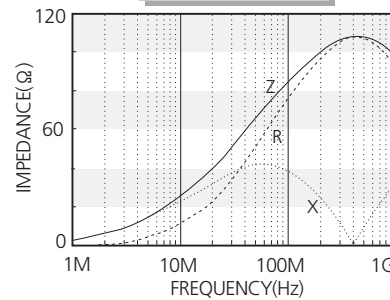
**CIB21P470**



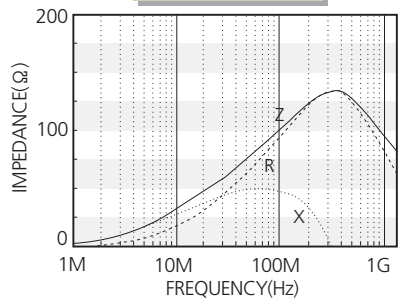
**CIM21U600**



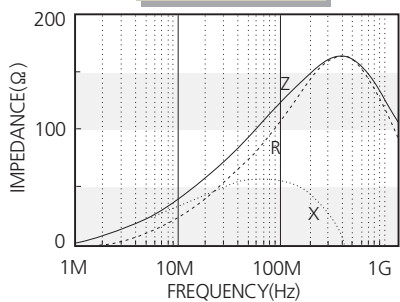
**CIM21U800**



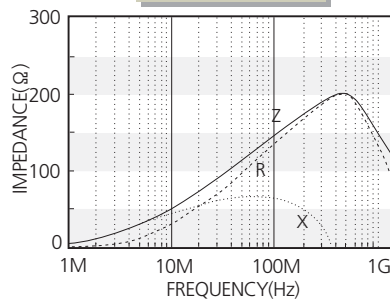
**CIM21U101**



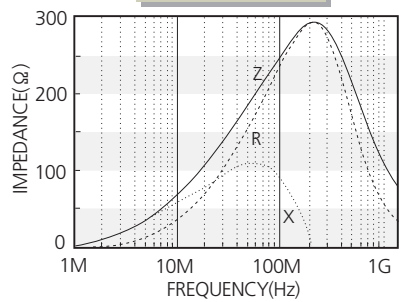
**CIM21U121**



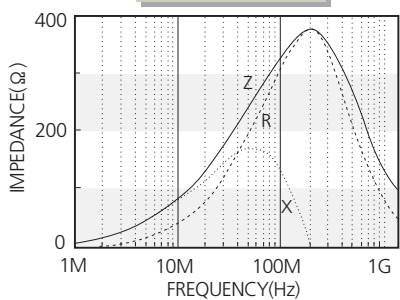
**CIM21U151**



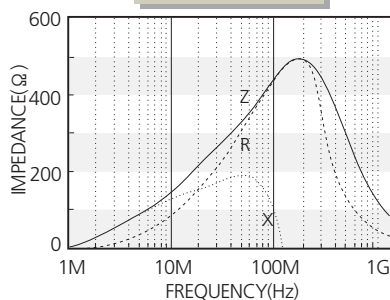
**CIM21U241**



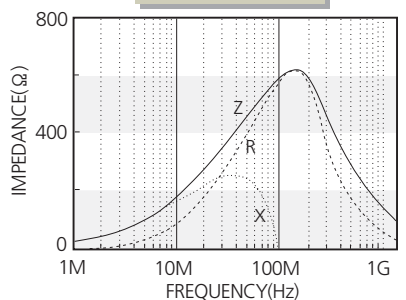
**CIM21U301**



**CIM21U471**



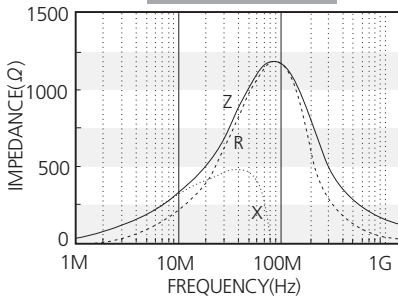
**CIM21U601**



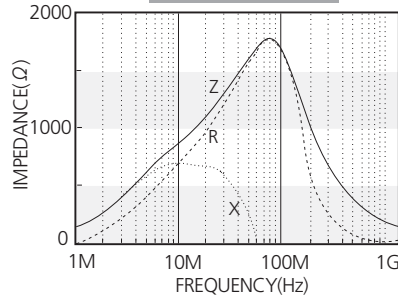
**Electrical Characteristics**

CIB/CIM  
Series

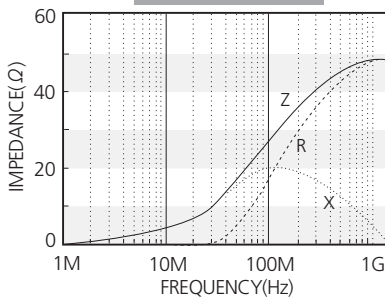
**CIM21U102**



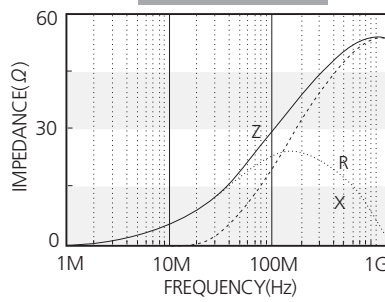
**CIM21U202**



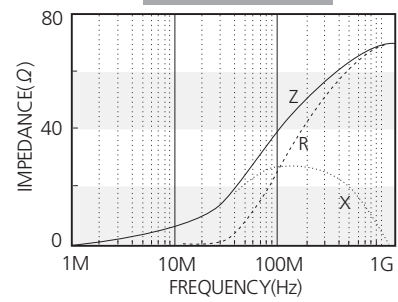
**CIB21J260**



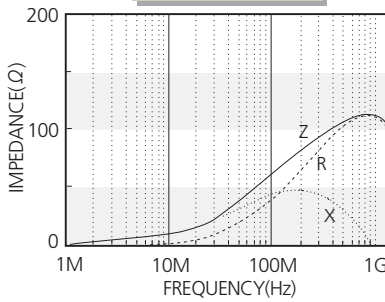
**CIB21J300**



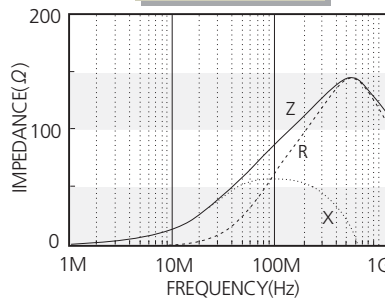
**CIB21J400**



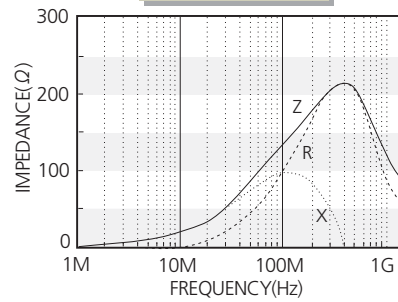
**CIM21J600**



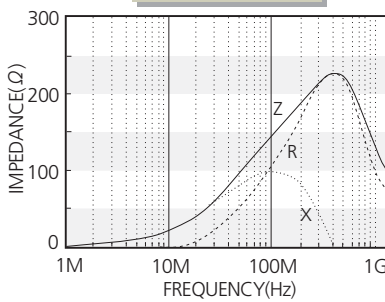
**CIM21J800**



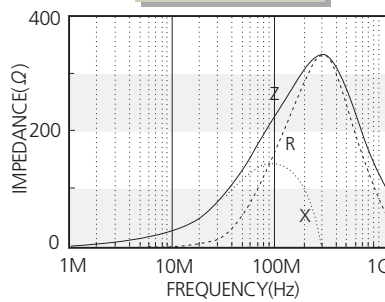
**CIM21J121**



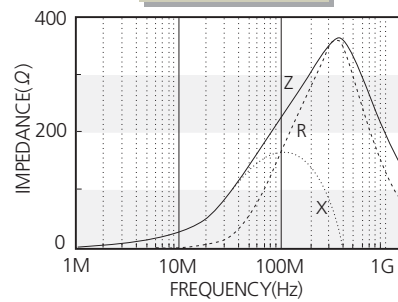
**CIM21J151**



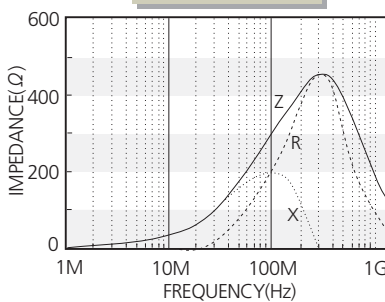
**CIM21J221**



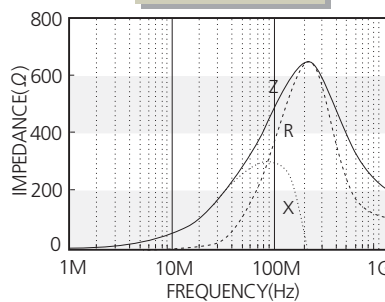
**CIM21J241**



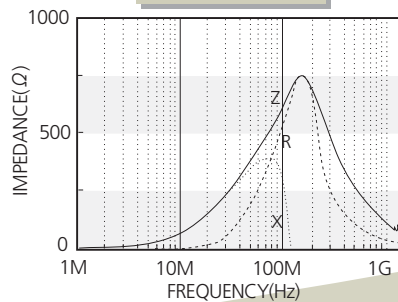
**CIM21J301**



**CIM21J471**

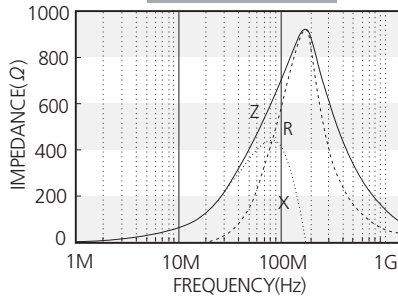


**CIM21J601**

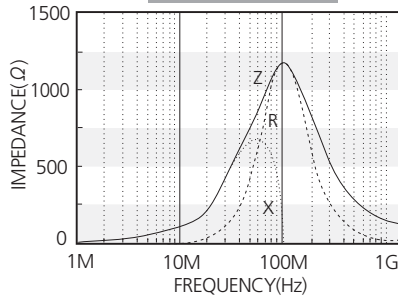


**Electrical Characteristics**

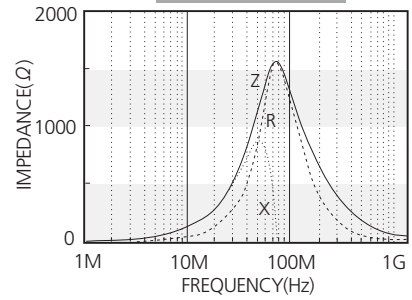
**CIM21J751**



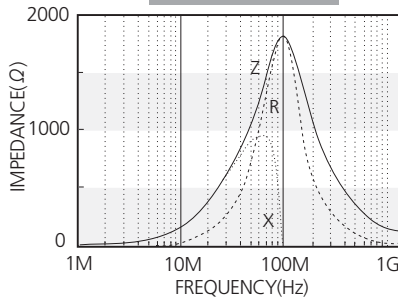
**CIM21J102**



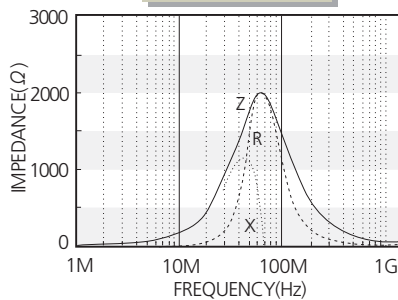
**CIM21J152**



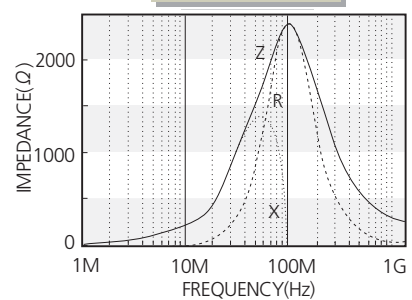
**CIM21J182**



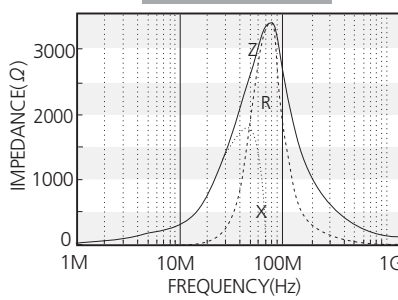
**CIM21J202**



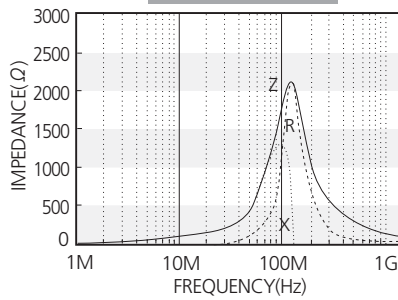
**CIM21J222**



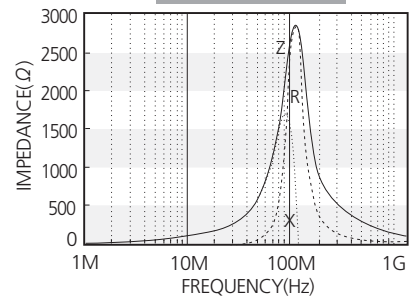
**CIM21J252**



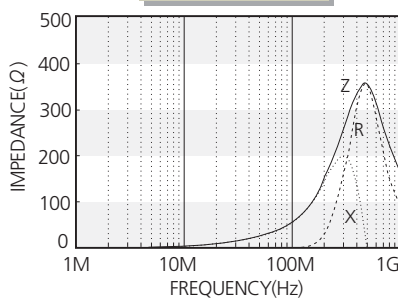
**CIM21K152**



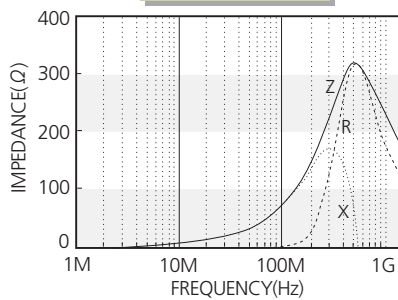
**CIM21K252**



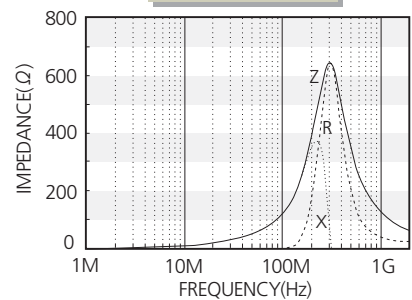
**CIM21N560**



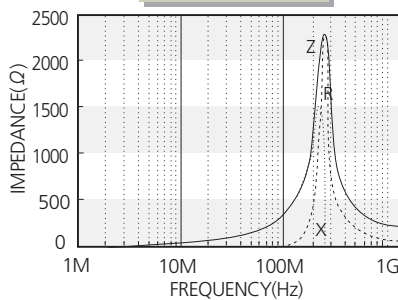
**CIM21N700**



**CIM21N121**



**CIM21N241**



**CIB/CIM 3216(1206) Type**

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIB 31P 260 N □	1.1 $\pm$ 0.2	26	0.05	2000
CIB 31P 310 N □	1.1 $\pm$ 0.2	31	0.05	2000
CIB 31P 500 N □	1.1 $\pm$ 0.2	50	0.05	2000
CIB 31P 600 N □	1.1 $\pm$ 0.2	60	0.05	1500
CIB 31P 700 N □	1.1 $\pm$ 0.2	70	0.10	1500
CIM 31U 101 N □	1.1 $\pm$ 0.2	100	0.15	500
CIM 31U 601 N □	1.1 $\pm$ 0.2	600	0.30	400
CIM 31J 151 N □	1.1 $\pm$ 0.2	150	0.20	600
CIM 31J 221 N □	1.1 $\pm$ 0.2	220	0.20	600
CIM 31J 301 N □	1.1 $\pm$ 0.2	300	0.25	600
CIM 31J 601 N □	1.1 $\pm$ 0.2	600	0.30	600
CIM 31J 801 N □	1.1 $\pm$ 0.2	800	0.40	500
CIM 31J 102 N □	1.1 $\pm$ 0.2	1000	0.45	500
CIM 31J 152 N □	1.1 $\pm$ 0.2	1500(at 70MHz)	0.55	300

※ Test equipment: Agilent E4991A + 16193A or Equivalent)

**CIB/CIM 3225(1210), 4516(1806) Type**

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIB 32P 310 N □	1.3 $\pm$ 0.2	31	0.02	3000
CIB 32P 600 N □	1.3 $\pm$ 0.2	60	0.02	1500
CIB 41P 800 N □	1.6 $\pm$ 0.2	80	0.03	1000
CIB 41P 151 N □	1.6 $\pm$ 0.2	150	0.05	1000

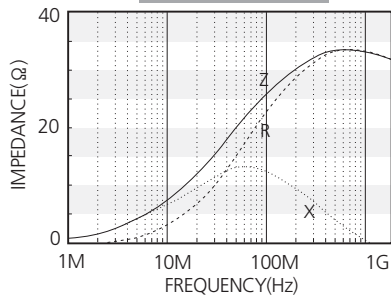
Customized products are available.

※ Test equipment: Agilent E4991A + 16193A or Equivalent)

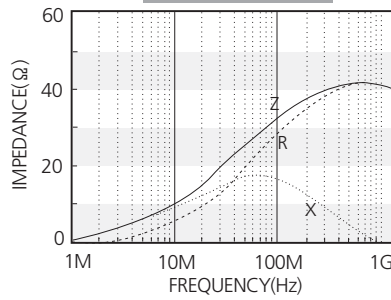


## Electrical Characteristics

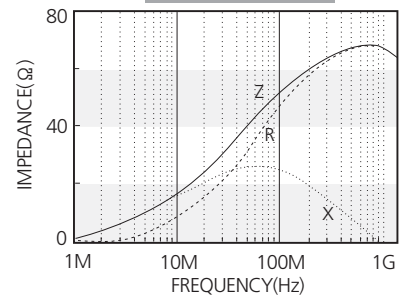
**CIB31P260**



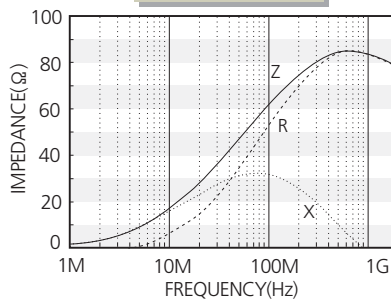
**CIB31P310**



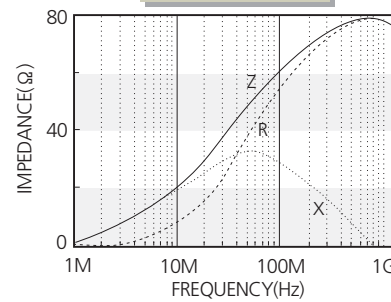
**CIB31P500**



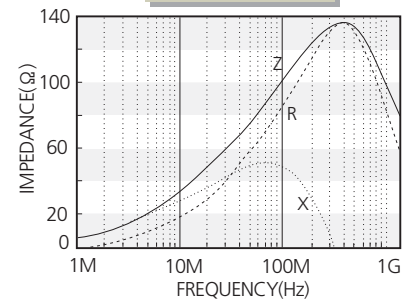
**CIB31P600**



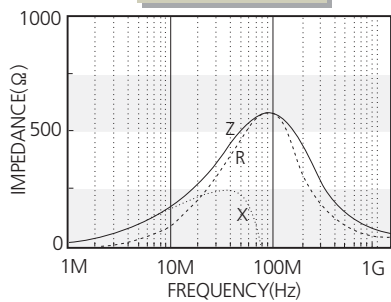
**CIB31P700**



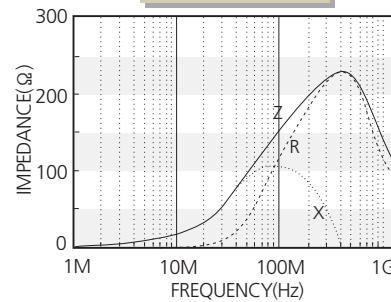
**CIM31U101**



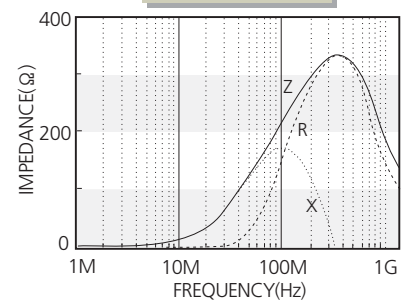
**CIM31U601**



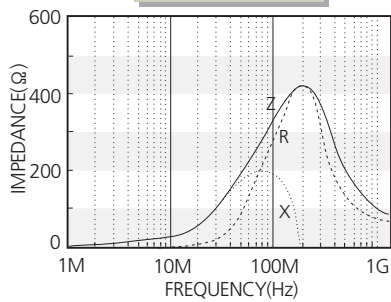
**CIM31J151**



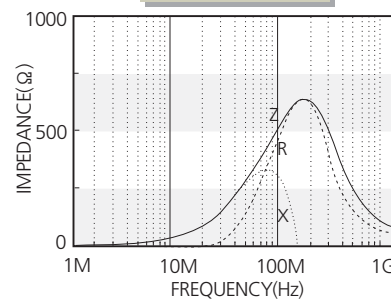
**CIM31J221**



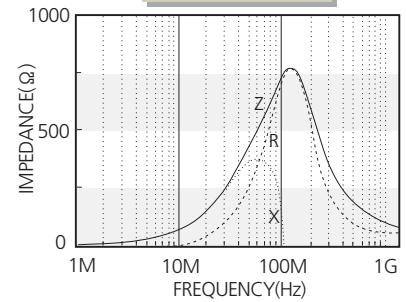
**CIM31J301**



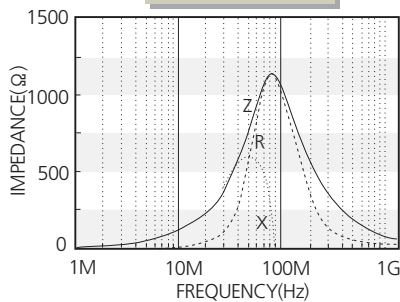
**CIM31J601**



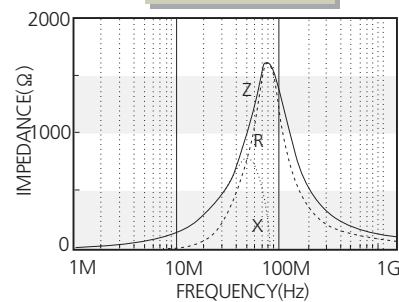
**CIM31J801**



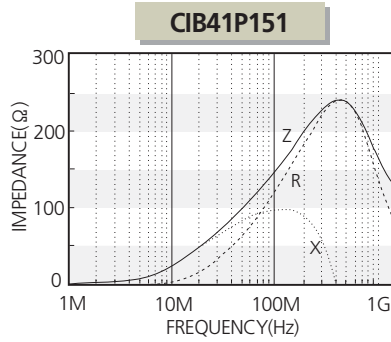
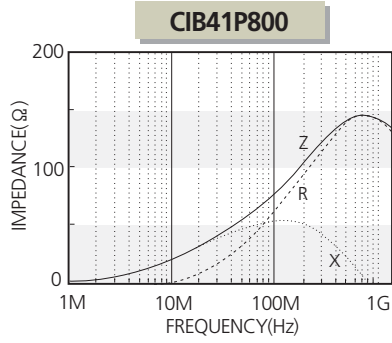
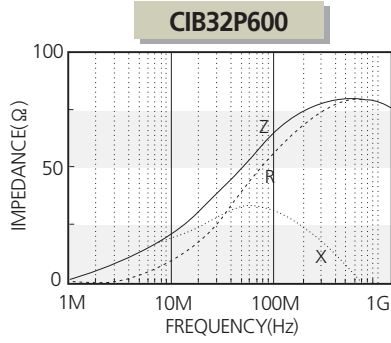
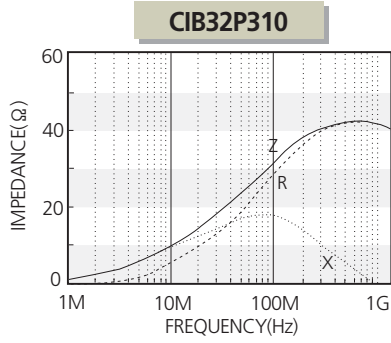
**CIM31J102**



**CIM31J152**



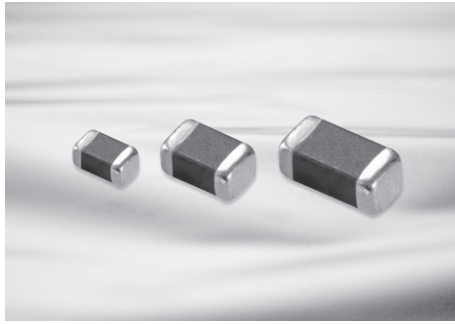
**Electrical Characteristics**



CIB/CIM  
Series

# Chip Bead ; CIC/CIS Series

## For High Current



### Feature

- The smallest beads used for high current.

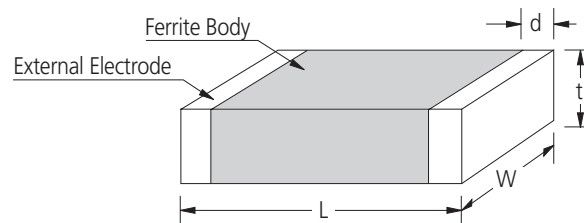
### Application

- Suppression of noise in power line

The CIC/CIS Series can be used in high current owing to their low DC resistance. They can match power lines to a maximum of 6A DC.

Operating Temp	-55~+125°C
Storage Temp (After mounting)	-55~+125°C

### Dimensions



Unit : mm

SIZE CODE	L	W	t	d
02	0.4±0.02	0.2±0.02	0.2±0.02	0.10+0.04,-0.03
03	0.6±0.03	0.3±0.03	0.3±0.03	0.15±0.05
05	1.0±0.05	0.5±0.05	0.5±0.05	0.25±0.1
10	1.6±0.15	0.8±0.15	0.8±0.15/0.6±0.15	0.3±0.2
21	2.0±0.2	1.25±0.2	0.9±0.2	0.5+0.2,-0.3
31	3.2±0.2	1.6±0.2	1.1±0.2	0.5+0.2,-0.3
32	3.2±0.2	2.5±0.2	1.3±0.2	0.5±0.3
41	4.5±0.2	1.6±0.2	1.6±0.2	0.5±0.3

### Part Numbering

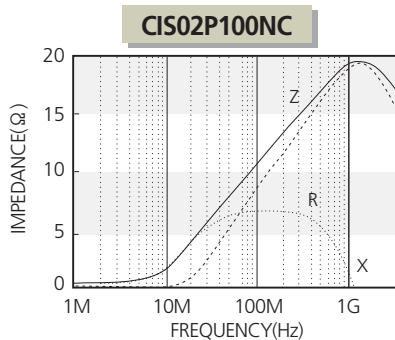
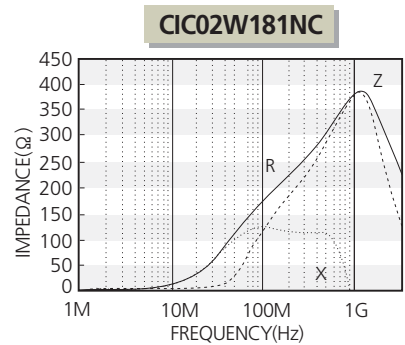
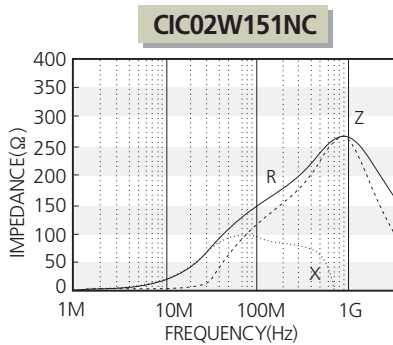
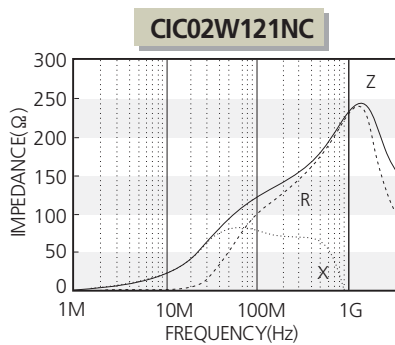
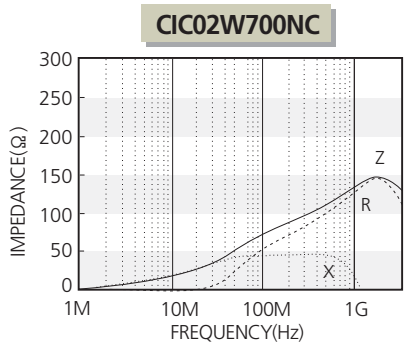
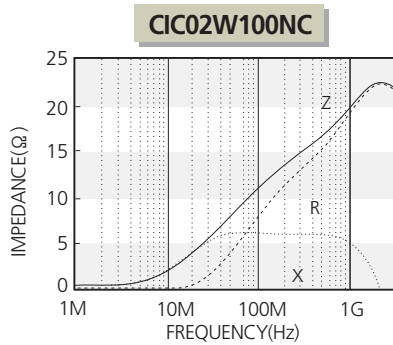
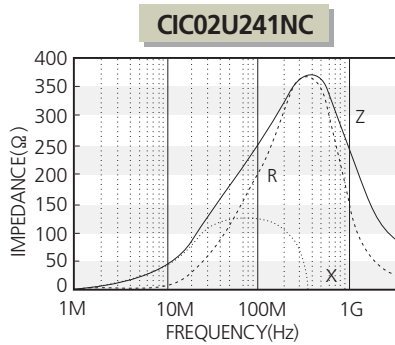
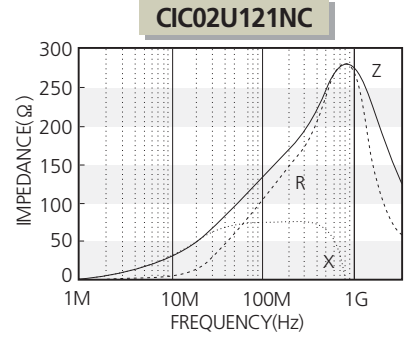
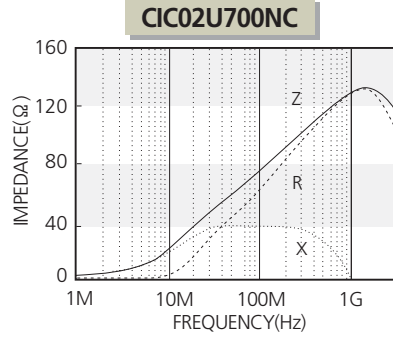
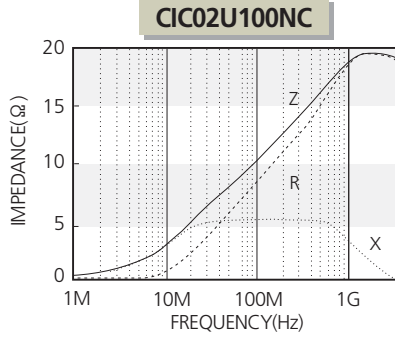
**CI**   **C**   **05**   **P**   **300**   **N**   **C**  
 (1)   (2)   (3)   (4)   (5)   (6)   (7)

- (1) Chip Beads
- (2) C: For high current ~3A, S: Ultra high current ~6A
- (3) Dimension
- (4) Material Code(J, P)
- (5) Nominal impedance(310: 31Ω, 121: 120Ω)
- (6) Thickness option(N: Standard, A: Thinner than standard, B: Thicker than standard)
- (7) Packaging(C: paper tape, E: embossed tape)

## CIC/CIS 0402(01005) Type

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIC 02U 100 N □	0.20 $\pm$ 0.02	10(typ.)	0.07	750
CIC 02U 700 N □	0.20 $\pm$ 0.02	70	0.37	300
CIC 02U 121 N □	0.20 $\pm$ 0.02	120	0.50	250
CIC 02U 241 N □	0.20 $\pm$ 0.02	240	0.90	200
CIC 02W 100 N □	0.20 $\pm$ 0.02	10(typ.)	0.10	500
CIC 02W 700 N □	0.20 $\pm$ 0.02	70	0.45	260
CIC 02W 121 N □	0.20 $\pm$ 0.02	120	0.60	220
CIC 02W 151 N □	0.20 $\pm$ 0.02	150	0.65	200
CIC 02W 181 N □	0.20 $\pm$ 0.02	180	0.75	200
CIS 02P 100 N □	0.20 $\pm$ 0.02	10(typ.)	0.045	1000

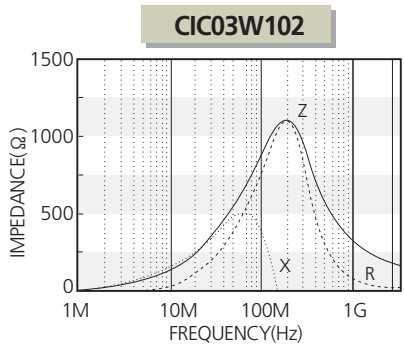
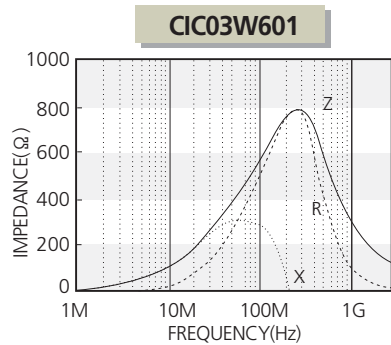
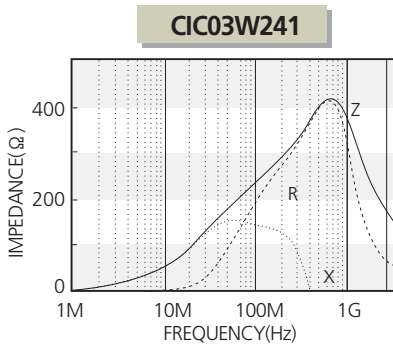
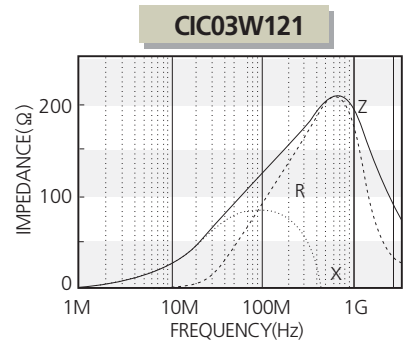
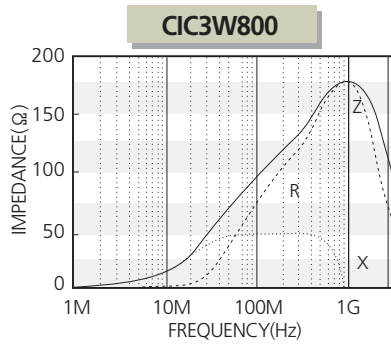
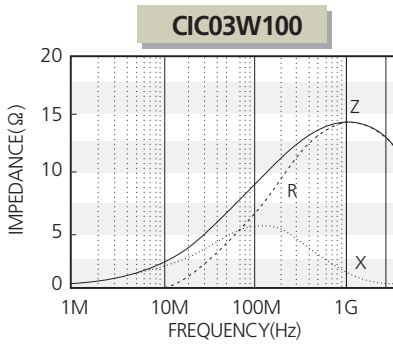
**CIC/CIS 0402(01005) Type**



**CIC 0603(0201) Type**

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIC 03W 100 N □	0.30 $\pm$ 0.03	10(typ.)	0.05	1000
CIC 03W 800 N □	0.30 $\pm$ 0.03	80	0.18	500
CIC 03W 121 N □	0.30 $\pm$ 0.03	120	0.23	450
CIC 03W 241 N □	0.30 $\pm$ 0.03	240	0.38	350
CIC 03W 601 N □	0.30 $\pm$ 0.03	600	0.85	250
CIC 03W 102 N □	0.30 $\pm$ 0.03	1000	1.25	200

\* Test equipment : Agilent E4991A + 16197A or Equivalent

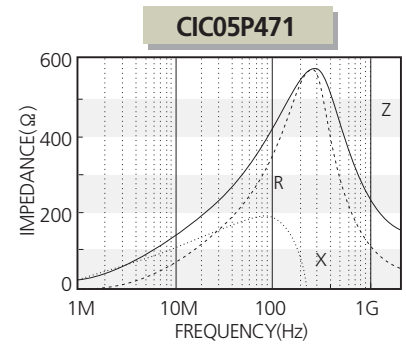
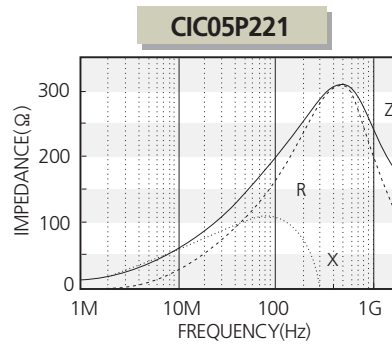
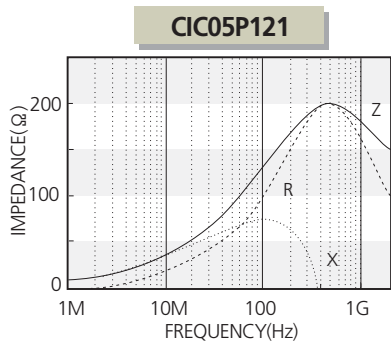
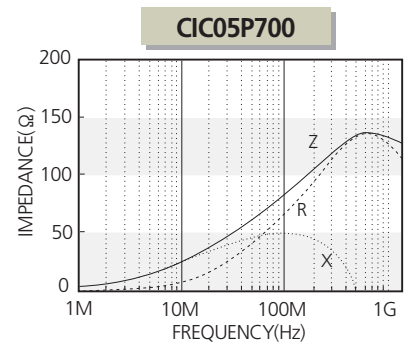
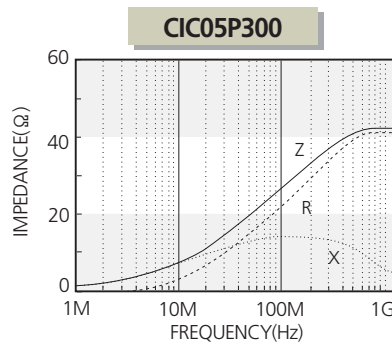
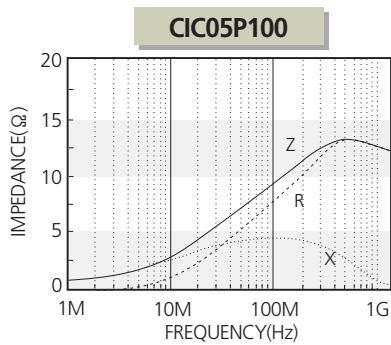


CIC/CIS  
Series

**CIC 1005(0402) Type**

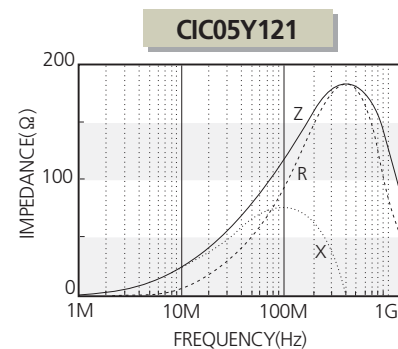
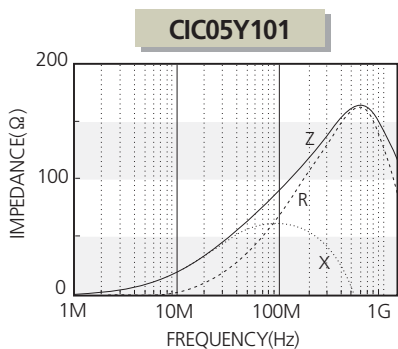
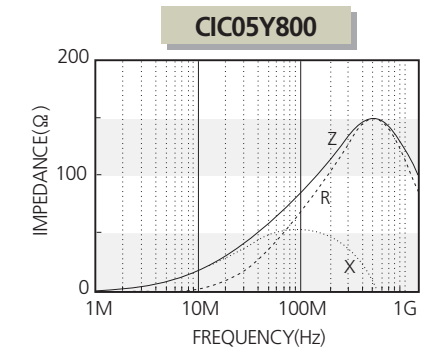
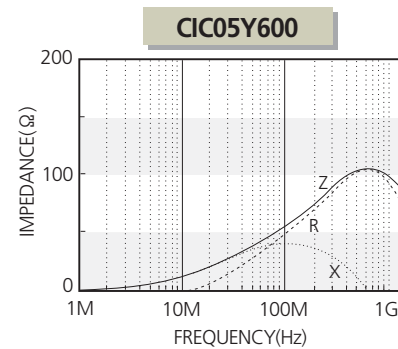
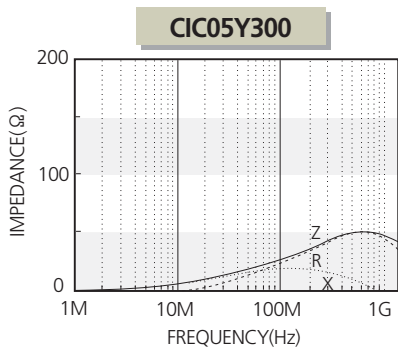
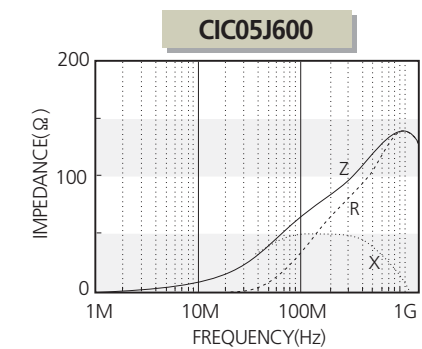
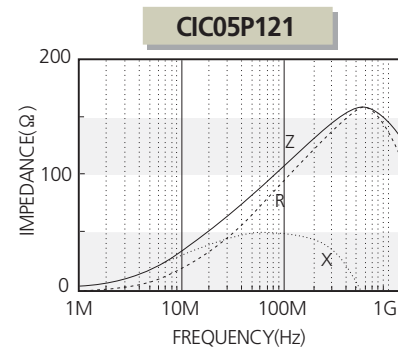
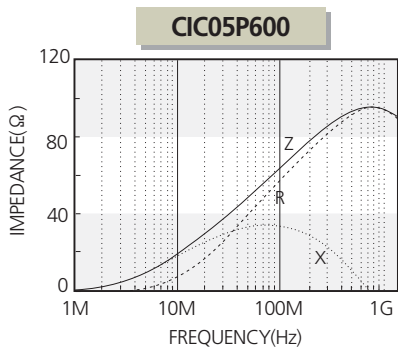
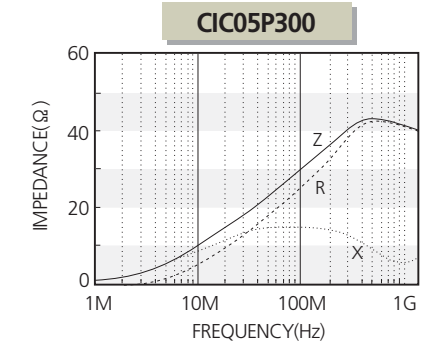
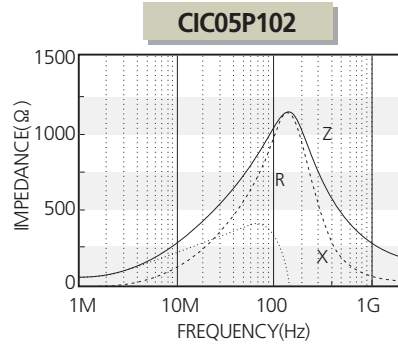
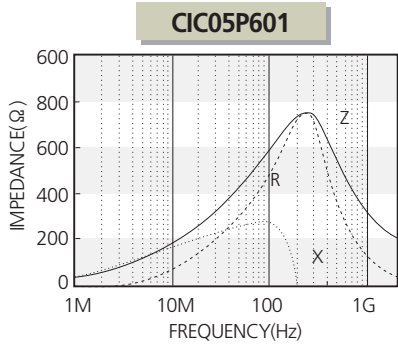
Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIC05P100 N □	0.50 $\pm$ 0.05	10(typ.)	0.015	1750
CIC05P300 N □	0.50 $\pm$ 0.05	30	0.06	1100
CIC05P700 N □	0.50 $\pm$ 0.05	70	0.10	700
CIC05P121 N □	0.50 $\pm$ 0.05	120	0.13	700
CIC05P221 N □	0.50 $\pm$ 0.05	220	0.18	600
CIC05P471 N □	0.50 $\pm$ 0.05	470	0.30	500
CIC05P601 N □	0.50 $\pm$ 0.05	600	0.34	420
CIC05P102 N □	0.50 $\pm$ 0.05	1000	0.49	350
CIC05J 600 N □	0.50 $\pm$ 0.05	60	0.09	1500
CIC05Y100 N □	0.50 $\pm$ 0.05	10(typ.)	0.035	2200
CIC05Y300 N □	0.50 $\pm$ 0.05	30	0.035	2200
CIC05Y600 N □	0.50 $\pm$ 0.05	60	0.06	1700
CIC05Y800 N □	0.50 $\pm$ 0.05	80	0.07	1500
CIC05Y101 N □	0.50 $\pm$ 0.05	100	0.07	1500
CIC05Y121 N □	0.50 $\pm$ 0.05	120	0.09	1300

\* Test equipment : Agilent E4991A + 16192A or Equivalent





CIC 1005(0402) Type



CIC/CIS  
Series

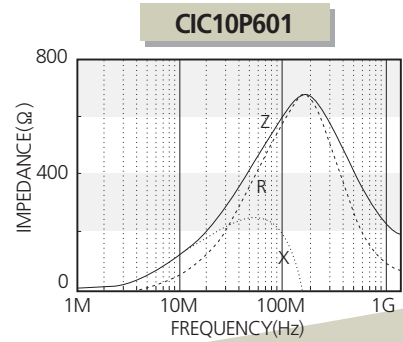
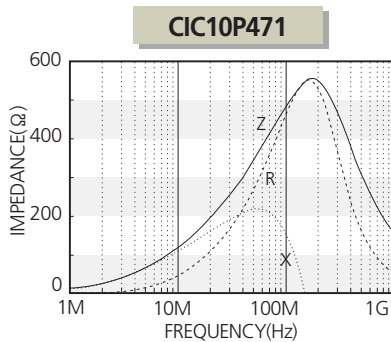
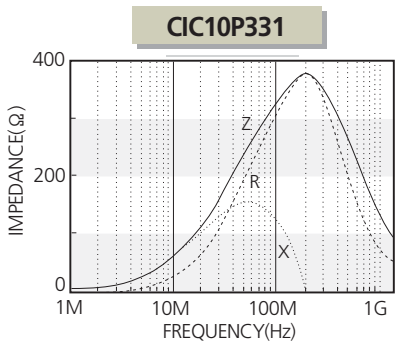
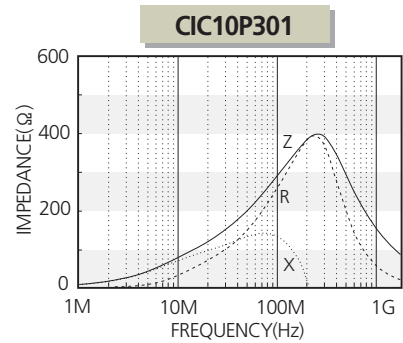
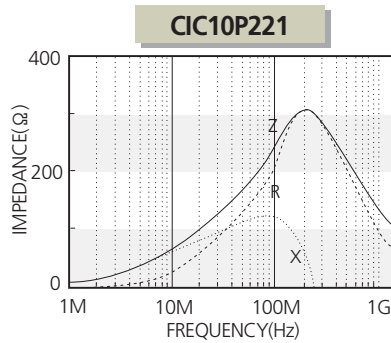
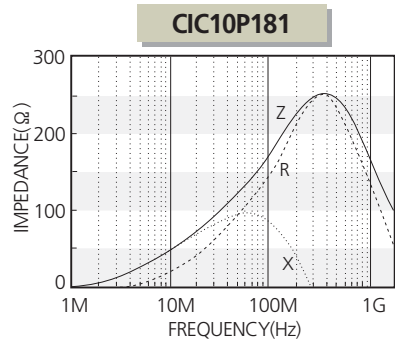
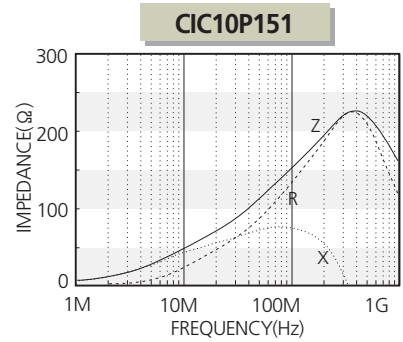
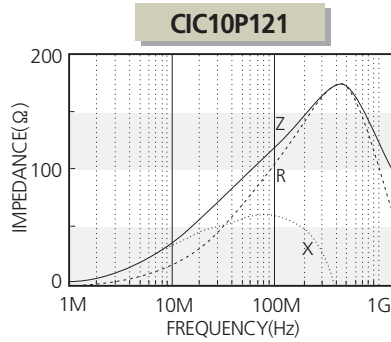
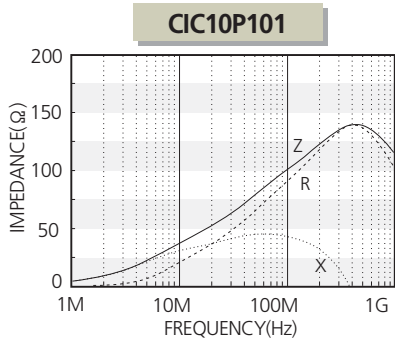
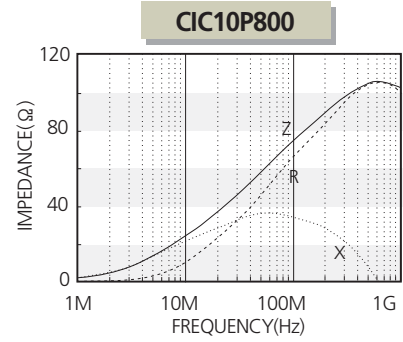
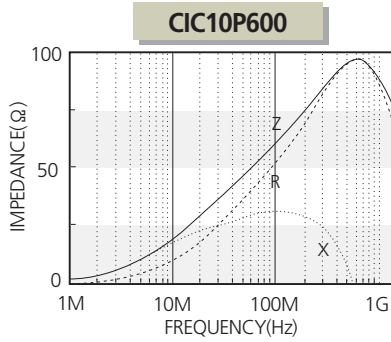
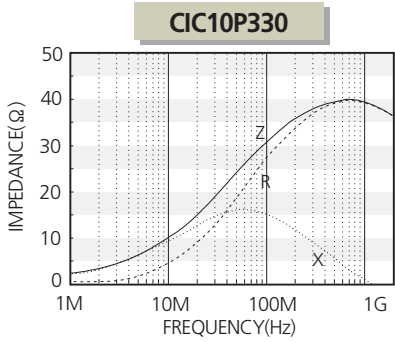
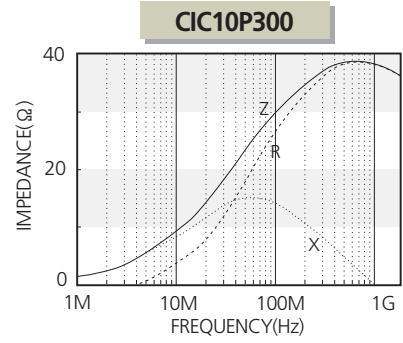
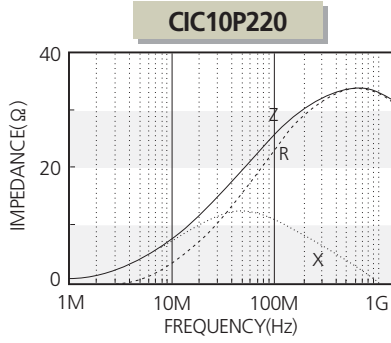
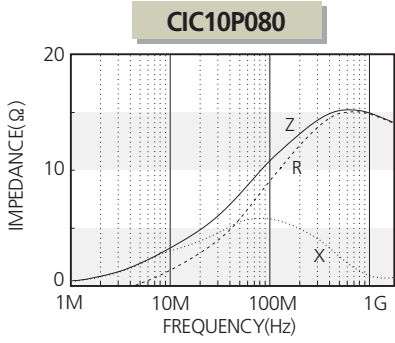


### CIC 1608(0603) Type

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIC 10P 080 N □	0.8 $\pm$ 0.15	8(typ.)	0.03	3000
CIC 10P 220 N □	0.8 $\pm$ 0.15	22	0.025	3000
CIC 10P 300 N □	0.8 $\pm$ 0.15	30	0.025	3000
CIC 10P 330 N □	0.8 $\pm$ 0.15	33	0.025	3000
CIC 10P 600 N □	0.8 $\pm$ 0.15	60	0.05	2500
CIC 10P 800 N □	0.8 $\pm$ 0.15	80	0.05	2000
CIC 10P 101 N □	0.8 $\pm$ 0.15	100	0.05	2000
CIC 10P 121 N □	0.8 $\pm$ 0.15	120	0.05	2000
CIC 10P 151 N □	0.8 $\pm$ 0.15	150	0.09	1500
CIC 10P 181 N □	0.8 $\pm$ 0.15	180	0.09	1500
CIC 10P 221 N □	0.8 $\pm$ 0.15	220	0.10	1400
CIC 10P 301 N □	0.8 $\pm$ 0.15	300	0.12	1200
CIC 10P 331 N □	0.8 $\pm$ 0.15	330	0.14	1200
CIC 10P 471 N □	0.8 $\pm$ 0.15	470	0.15	1200
CIC 10P 601 N □	0.8 $\pm$ 0.15	600	0.15	1200
CIC 10J 080 N □	0.8 $\pm$ 0.15	8(typ.)	0.02	3000
CIC 10J 300 N □	0.8 $\pm$ 0.15	30	0.03	3000
CIC 10J 470 N □	0.8 $\pm$ 0.15	47	0.05	2000
CIC 10J 600 N □	0.8 $\pm$ 0.15	60	0.05	2000
CIC 10J 800 N □	0.8 $\pm$ 0.15	80	0.10	2000
CIC 10J 121 N □	0.8 $\pm$ 0.15	120	0.10	2000
CIC 10J 151 N □	0.8 $\pm$ 0.15	150	0.15	1500
CIC 10J 221 N □	0.8 $\pm$ 0.15	220	0.15	1500
CIC 10J 301 N □	0.8 $\pm$ 0.15	300	0.15	800
CIC 10J 471 N □	0.8 $\pm$ 0.15	470	0.15	800
CIC 10J 601 N □	0.8 $\pm$ 0.15	600	0.15	750

※ Test equipment: Agilent E4991A + 16193A or Equivalent

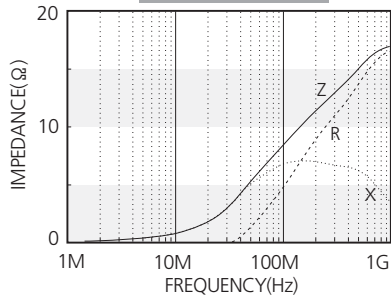
Electrical Characteristics



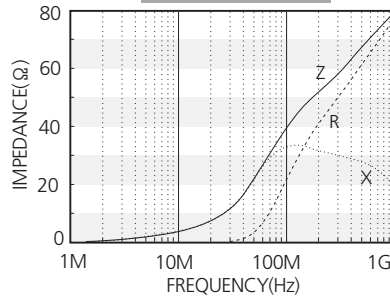
CIC/CIS  
Series

## Electrical Characteristics

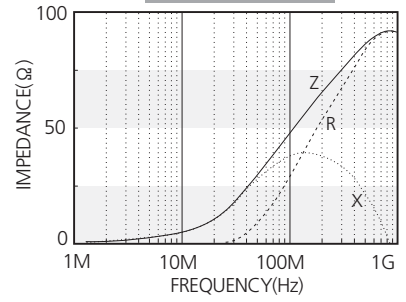
**CIC10J080**



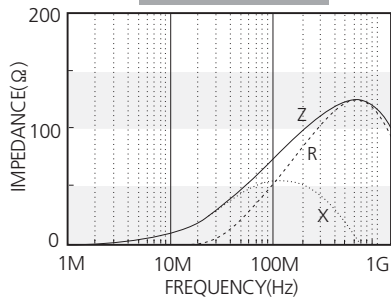
**CIC10J300**



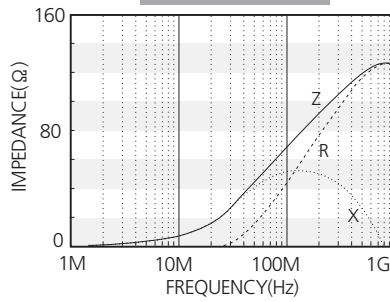
**CIC10J470**



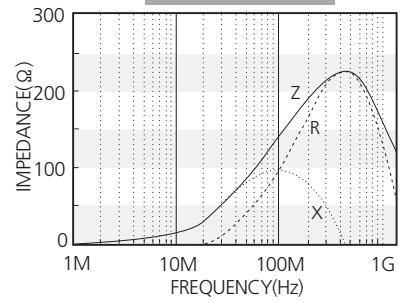
**CIC10J600**



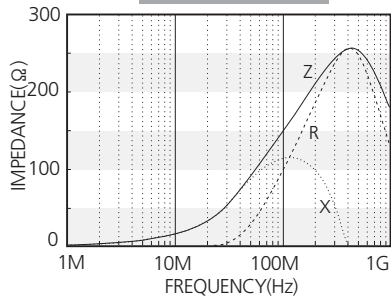
**CIC10J800**



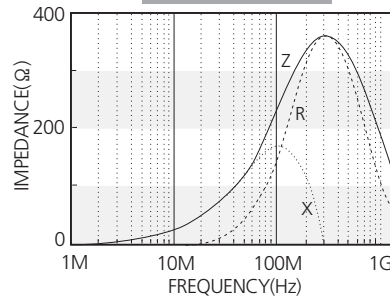
**CIC10J121**



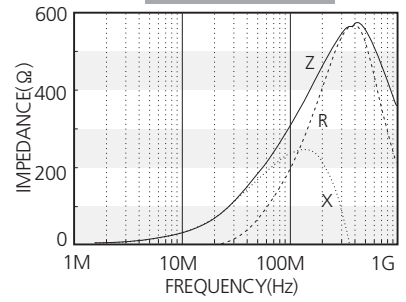
**CIC10J151**



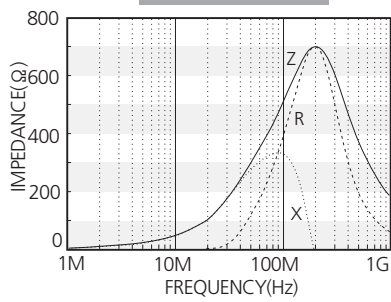
**CIC10J221**



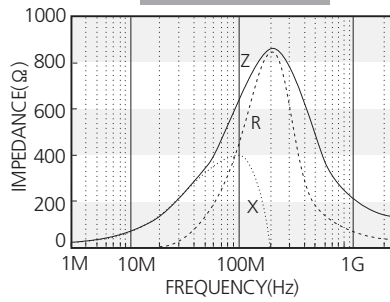
**CIC10J301**



**CIC10J471**



**CIC10J601**



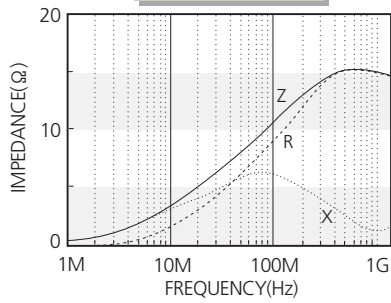
### CIC 2012(0805) Type

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIC 21P 110 N □	0.90 $\pm$ 0.2	11(typ.)	0.05	6000
CIC 21P 300 N □	0.90 $\pm$ 0.2	30	0.015	3000
CIC 21P 600 N □	0.90 $\pm$ 0.2	60	0.025	3000
CIC 21P 800 N □	0.90 $\pm$ 0.2	80	0.025	2500
CIC 21P 101 N □	0.90 $\pm$ 0.2	100	0.02	2000
CIC 21P 121 N □	0.90 $\pm$ 0.2	120	0.05	2000
CIC 21P 221 N □	0.90 $\pm$ 0.2	220	0.035	3200
CIC 21P 331 N □	0.85 $\pm$ 0.2	330	0.05	2000
CIC 21P 601 N □	0.90 $\pm$ 0.2	600	0.15	1000
CIC 21J 600 N □	0.90 $\pm$ 0.2	60	0.03	3800
CIC 21J 121 N □	0.90 $\pm$ 0.2	120	0.05	2500
CIC 21J 221 N □	0.90 $\pm$ 0.2	220	0.05	1500
CIC 21J 301 N □	0.90 $\pm$ 0.2	300	0.10	1500
CIC 21J 471 N □	0.90 $\pm$ 0.2	470	0.08	1500
CIC 21J 601 N □	0.90 $\pm$ 0.2	600	0.10	1000

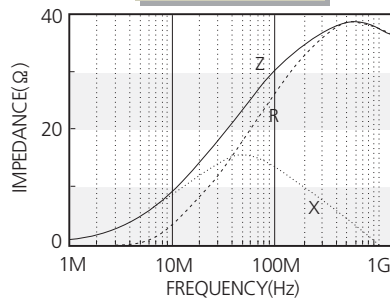
\* Test equipment: Agilent E4991A + 16193A or Equivalent

## Electrical Characteristics

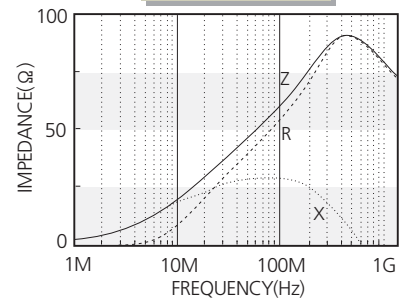
**CIC21P110**



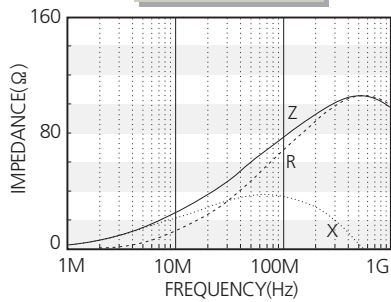
**CIC21P300**



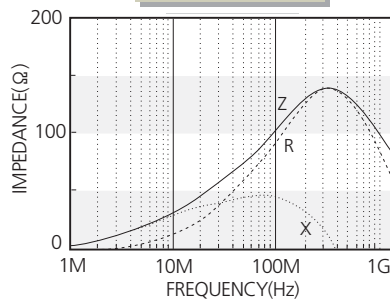
**CIC21P600**



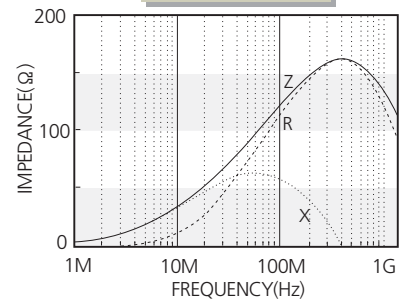
**CIC21P800**



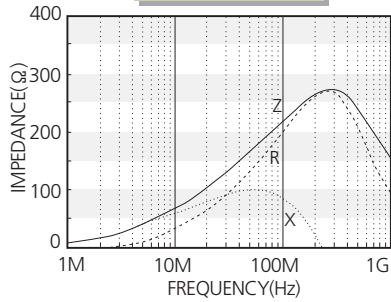
**CIC21P101**



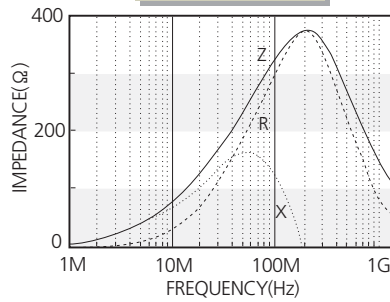
**CIC21P121**



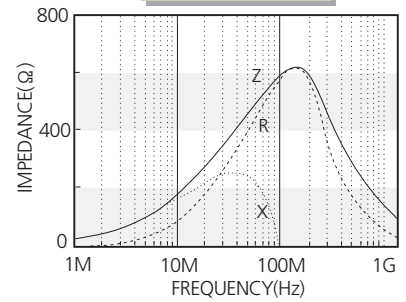
**CIC21P221**



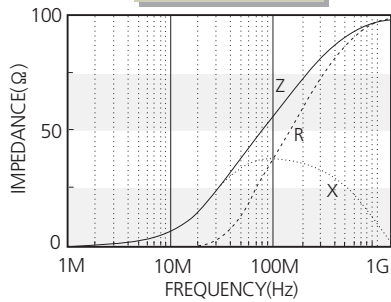
**CIC21P331**



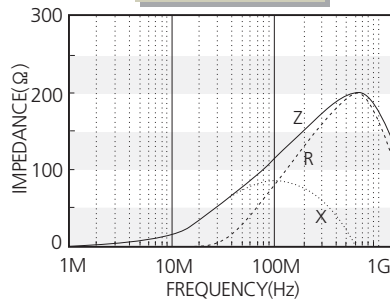
**CIC21P601**



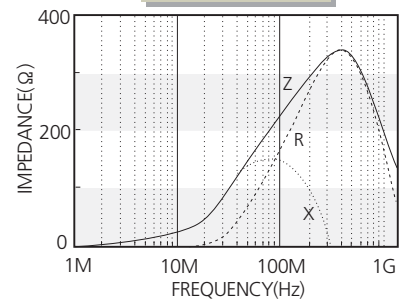
**CIC21J600**



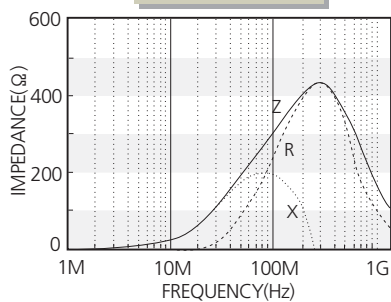
**CIC21J121**



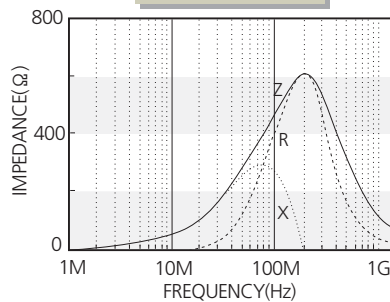
**CIC21J221**



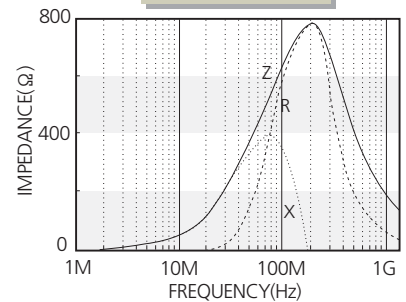
**CIC21J301**



**CIC21J471**



**CIC21J601**



**CIC 3216(1206) Type**

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIC 31P 260 N □	1.1 $\pm$ 0.2	26	0.01	6000
CIC 31P 300 N □	1.1 $\pm$ 0.2	30	0.01	6000
CIC 31P 310 N □	1.1 $\pm$ 0.2	31	0.01	6000
CIC 31P 330 N □	1.1 $\pm$ 0.2	33	0.01	6000
CIC 31P 350 N □	1.1 $\pm$ 0.2	35	0.025	3000
CIC 31P 500 N □	1.1 $\pm$ 0.2	50	0.025	3000
CIC 31P 520 N □	1.1 $\pm$ 0.2	52	0.025	3000
CIC 31P 600 N □	1.1 $\pm$ 0.2	60	0.025	3000
CIC 31P 680 N □	1.1 $\pm$ 0.2	68	0.025	3000
CIC 31P 700 N □	1.1 $\pm$ 0.2	70	0.025	3000
CIC 31P 800 N □	1.1 $\pm$ 0.2	80	0.025	3000
CIC 31P 900 N □	1.1 $\pm$ 0.2	90	0.025	2000
CIC 31P 121 N □	1.1 $\pm$ 0.2	120	0.025	2000
CIC 31P 151 N □	1.1 $\pm$ 0.2	150	0.05	2000
CIC 31P 221 N □	1.1 $\pm$ 0.2	220	0.05	2000
CIC 31P 301 N □	1.1 $\pm$ 0.2	300	0.05	2000
CIC 31P 391 N □	1.1 $\pm$ 0.2	390	0.05	2000
CIC 31P 471 N □	1.1 $\pm$ 0.2	470	0.07	1500
CIC 31P 601 N □	1.1 $\pm$ 0.2	600	0.07	1500
CIC 31J 300 N □	1.1 $\pm$ 0.2	30	0.02	4000
CIC 31J 500 N □	1.1 $\pm$ 0.2	50	0.02	4000
CIC 31J 680 N □	1.1 $\pm$ 0.2	68	0.02	4000
CIC 31J 800 N □	1.1 $\pm$ 0.2	80	0.02	4000
CIC 31J 900 N □	1.1 $\pm$ 0.2	90	0.02	4000
CIC 31J 121 N □	1.1 $\pm$ 0.2	120	0.03	4000
CIC 31J 151 N □	1.1 $\pm$ 0.2	150	0.03	3000
CIC 31J 241 N □	1.1 $\pm$ 0.2	240	0.05	3000
CIC 31J 301 N □	1.1 $\pm$ 0.2	300	0.05	3000
CIC 31J 471 N □	1.1 $\pm$ 0.2	470	0.05	3000
CIC 31J 501 N □	1.1 $\pm$ 0.2	500	0.05	3000
CIC 31J 601 N □	1.1 $\pm$ 0.2	600	0.05	2500

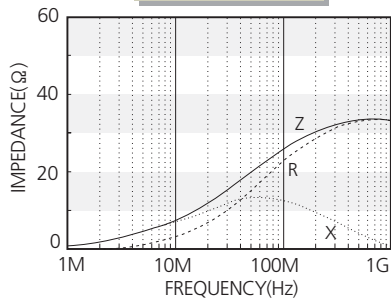
\* Test equipment : Agilent E4991A + 16193A or Equivalent

CIC/CIS  
Series

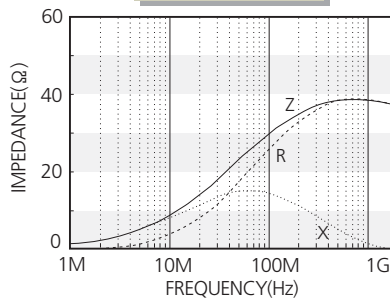


**Electrical Characteristics**

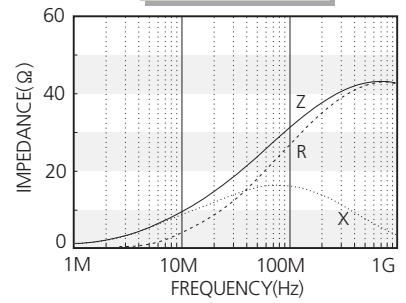
**CIC31P260**



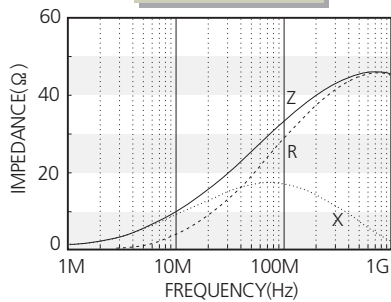
**CIC31P300**



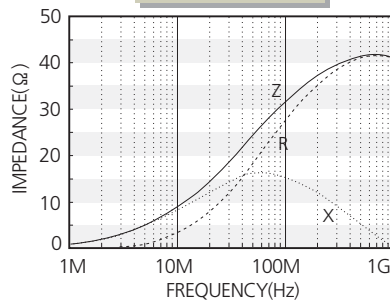
**CIC31P310**



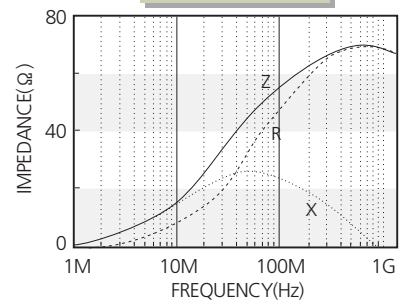
**CIC31P330**



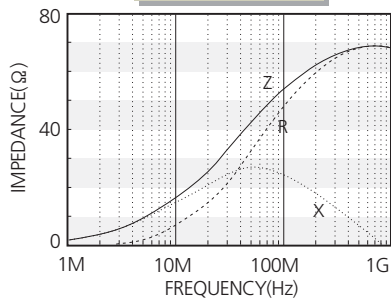
**CIC31P350**



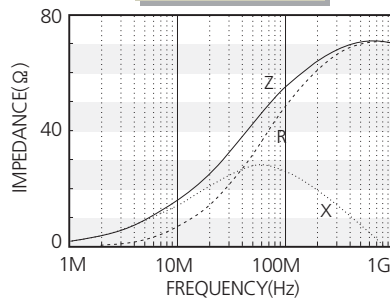
**CIC31P500**



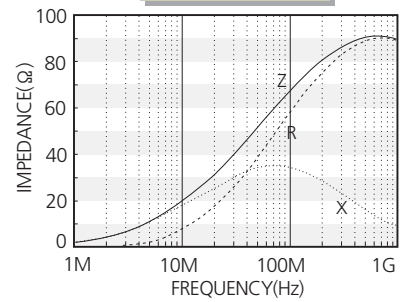
**CIC31P520**



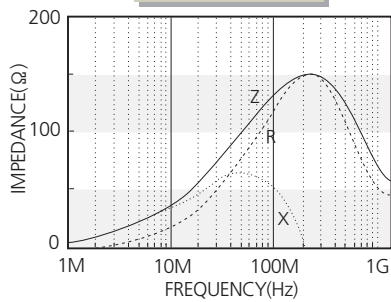
**CIC31P600**



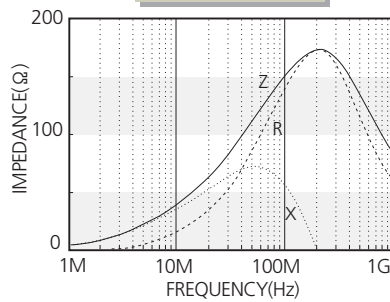
**CIC31P680**



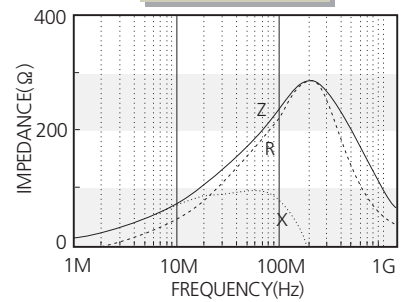
**CIC31P121**



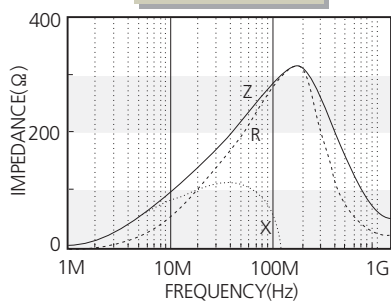
**CIC31P151**



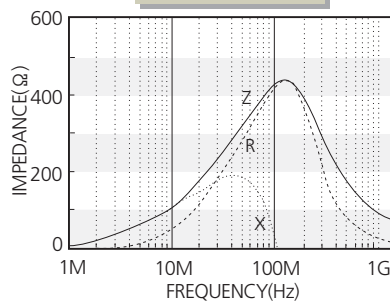
**CIC31P221**



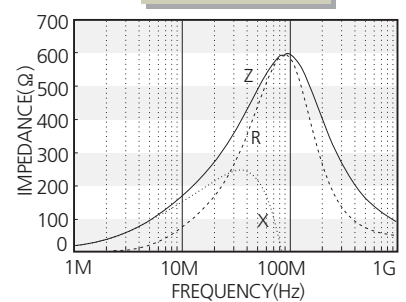
**CIC31P301**



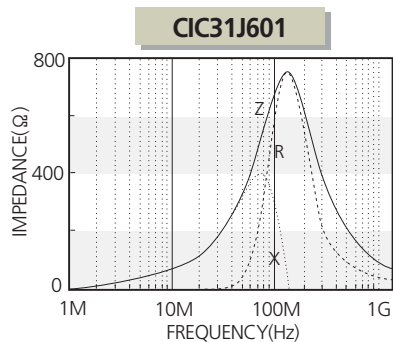
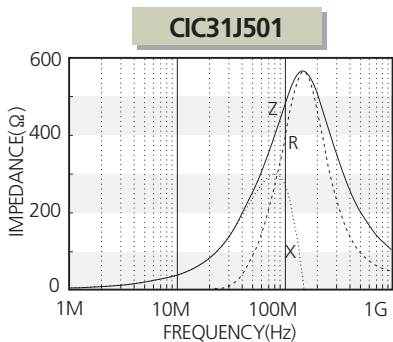
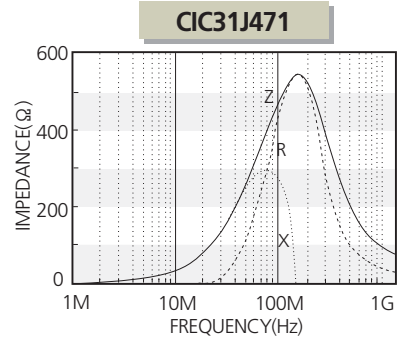
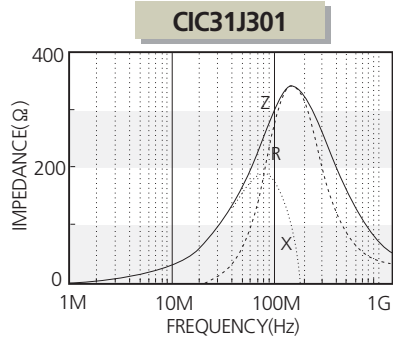
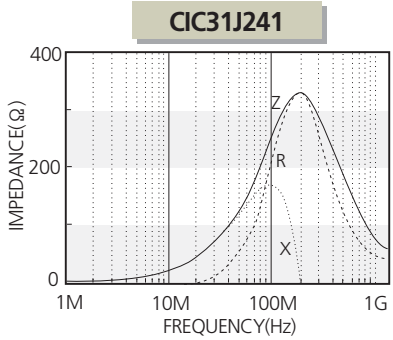
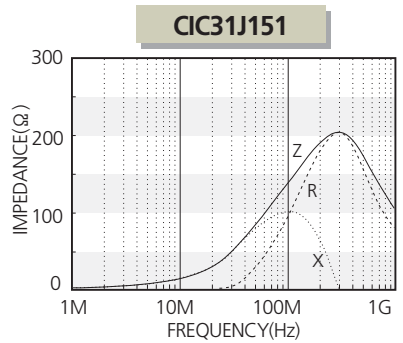
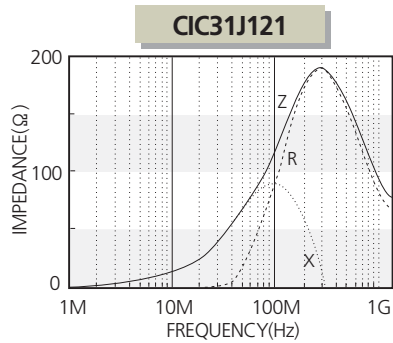
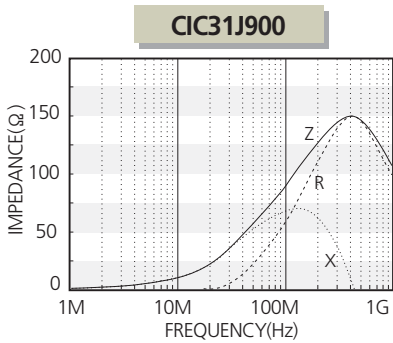
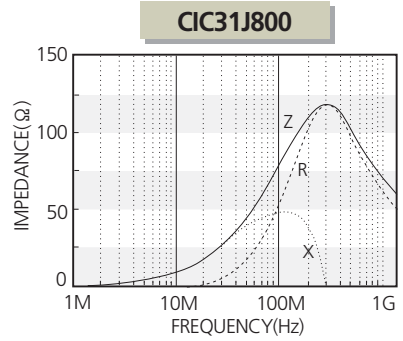
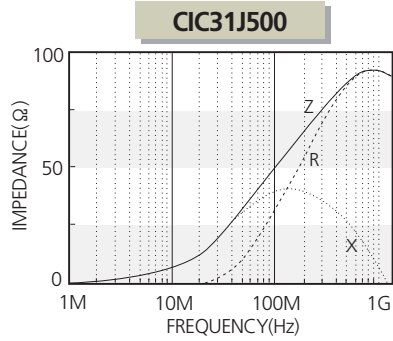
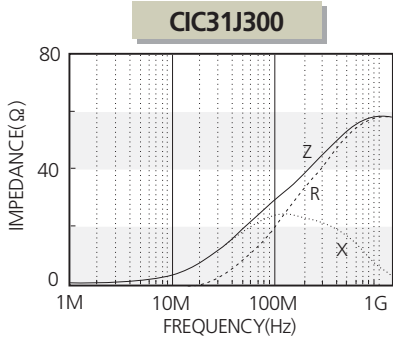
**CIC31P471**



**CIC31P601**



**Electrical Characteristics**



CIC/CIS  
Series



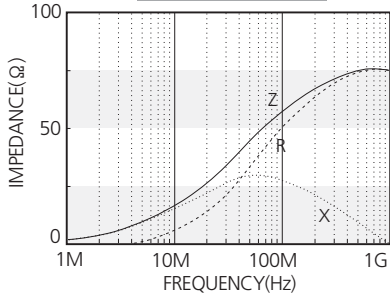
### CIC 4516(1806) Type

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIC 41P 260 N□	1.6 $\pm$ 0.2	26(typ.)	0.01	6000
CIC 41P 600 N□	1.6 $\pm$ 0.2	60	0.01	6000
CIC 41P 750 N□	1.6 $\pm$ 0.2	75	0.01	6000
CIC 41P 800 N□	1.6 $\pm$ 0.2	80	0.01	6000
CIC 41P 910 N□	1.6 $\pm$ 0.2	91	0.025	3000
CIC 41P 111 N□	1.6 $\pm$ 0.2	110	0.025	3000
CIC 41P 121 N□	1.6 $\pm$ 0.2	120	0.025	3000
CIC 41P 151 N□	1.6 $\pm$ 0.2	150	0.025	3000
CIC 41P 181 N□	1.6 $\pm$ 0.2	180	0.025	3000
CIC 41P 221 N□	1.6 $\pm$ 0.2	220	0.05	2000
CIC 41P 301 N□	1.6 $\pm$ 0.2	300	0.05	2000
CIC 41P 471 N□	1.6 $\pm$ 0.2	470	0.05	2000
CIC 41P 601 N□	1.6 $\pm$ 0.2	600	0.08	1500
CIC 41J 260 N□	1.6 $\pm$ 0.2	26(typ.)	0.01	6000
CIC 41J 400 N□	1.6 $\pm$ 0.2	40	0.01	6000
CIC 41J 600 N□	1.6 $\pm$ 0.2	60	0.01	6000
CIC 41J 800 N□	1.6 $\pm$ 0.2	80	0.01	6000
CIC 41J 910 N□	1.6 $\pm$ 0.2	91	0.02	6000
CIC 41J 121 N□	1.6 $\pm$ 0.2	120	0.03	3000
CIC 41J 151 N□	1.6 $\pm$ 0.2	150	0.03	3000
CIC 41J 221 N□	1.6 $\pm$ 0.2	220	0.04	2500
CIC 41J 301 N□	1.6 $\pm$ 0.2	300	0.04	2500
CIC 41J 471 N□	1.6 $\pm$ 0.2	470	0.04	2500
CIC 41J 601 N□	1.6 $\pm$ 0.2	600	0.04	2500

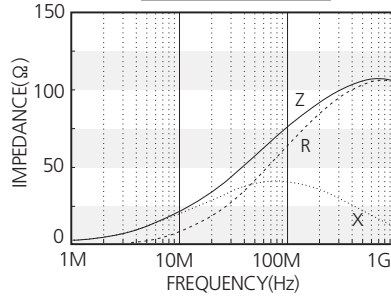
※ Test equipment: Agilent E4991A + 16193A or Equivalent

Electrical Characteristics

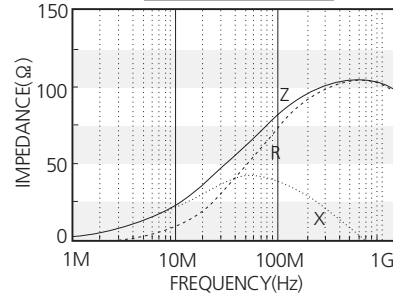
CIC41P600



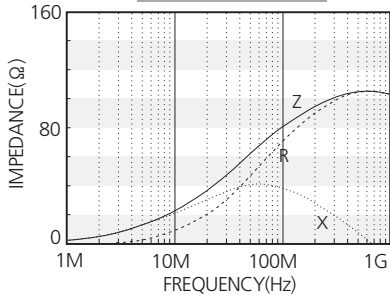
CIC41P750



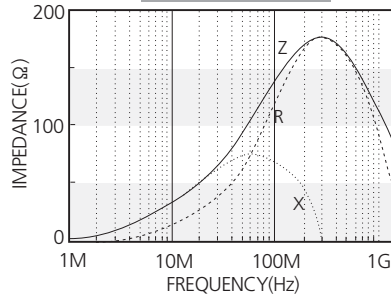
CIC41P800



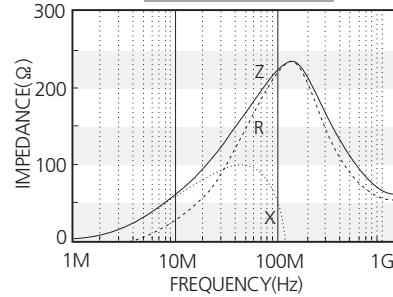
CIC41P910



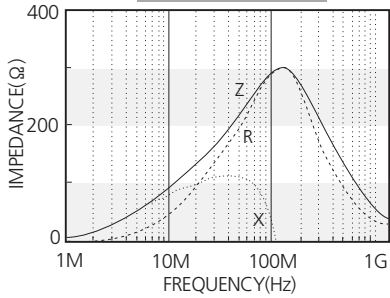
CIC41P121



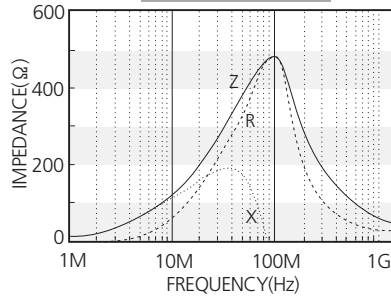
CIC41P221



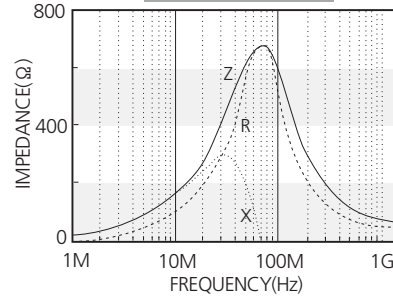
CIC41P301



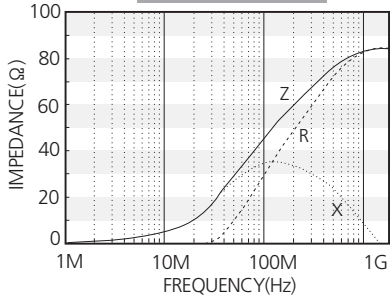
CIC41P471



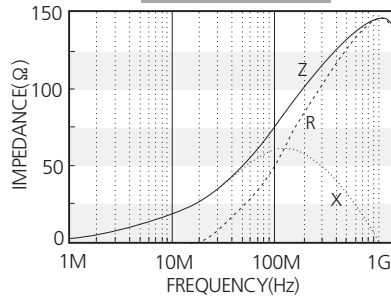
CIC41P601



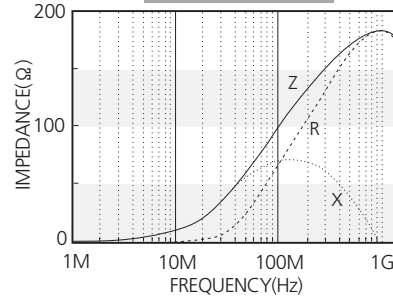
CIC41J400



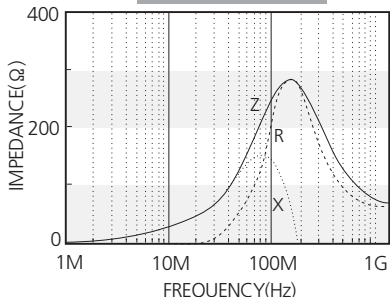
CIC41J800



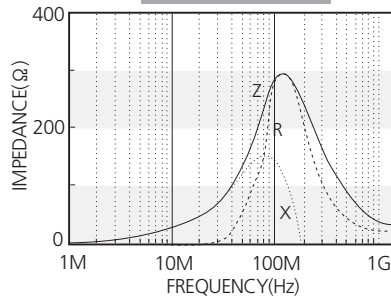
CIC41J121



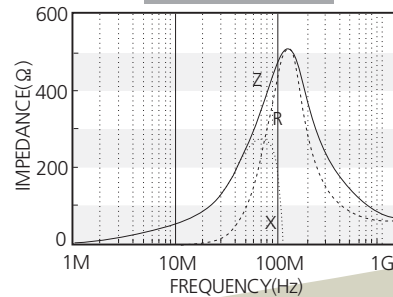
CIC41J221



CIC41J301



CIC41J471

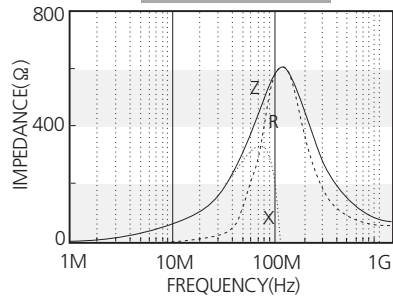


CIC/CIS  
Series



## Electrical Characteristics

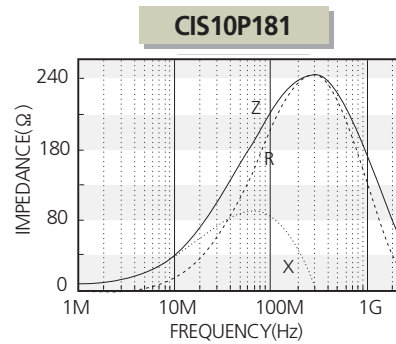
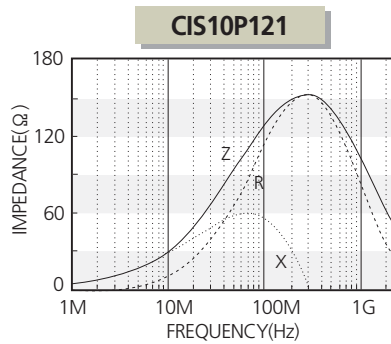
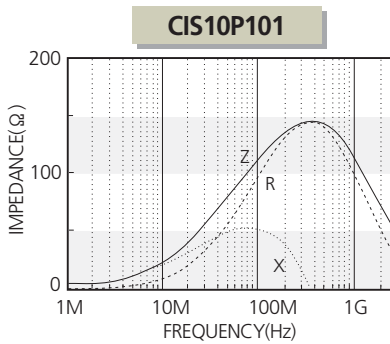
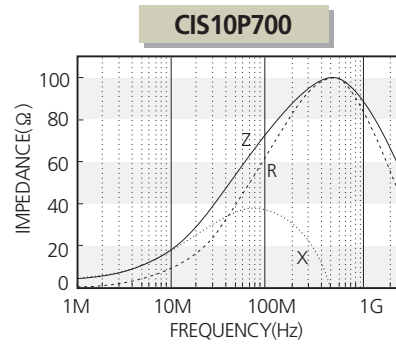
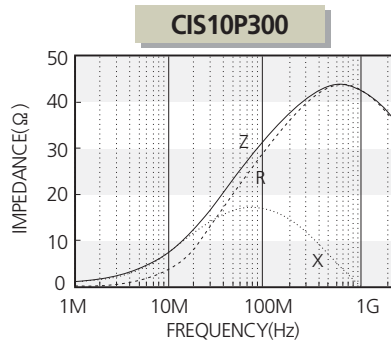
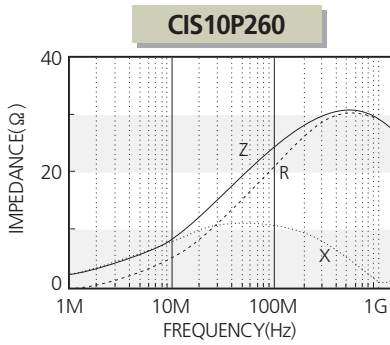
CIC41J601



CIS Series

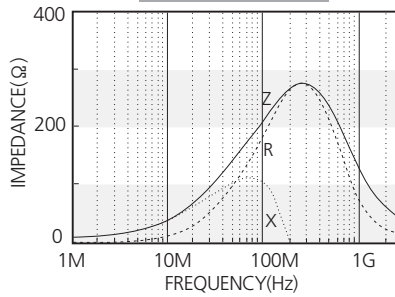
Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIS 10P 260 A □	0.6 ± 0.15	26	0.007	6000
CIS 10P 300 A □	0.6 ± 0.15	30	0.01	6000
CIS 10P 700 A □	0.6 ± 0.15	70	0.02	4000
CIS 10P 101 A □	0.6 ± 0.15	100	0.03	3000
CIS 10P 121 A □	0.6 ± 0.15	120	0.03	3000
CIS 10P 181 A □	0.6 ± 0.15	180	0.04	2500
CIS 10P 221 N □	0.8 ± 0.15	220	0.05	2500
CIS 10P 301 N □	0.8 ± 0.15	300	0.07	2000
CIS 10P 331 N □	0.8 ± 0.15	330	0.07	1700
CIS 10P 391 N □	0.8 ± 0.15	390	0.10	1200
CIS 10P 471 N □	0.8 ± 0.15	470	0.13	1500
CIS 10P 601 N □	0.8 ± 0.15	600	0.15	1300
CIS 10J 300 N □	0.8 ± 0.15	30	0.01	6000
CIS 21P 300 N □	0.9 ± 0.2	30	0.01	6000
CIS 21P 101 N □	0.9 ± 0.2	100	0.02	4000
CIS 21J 121 N □	0.9 ± 0.2	120	0.02	5000
CIS 32P 520 N □	1.3 ± 0.2	52	0.01	6000
CIS 41P 600 N □	1.6 ± 0.2/1.2 ± 0.2	60	0.01	6000
CIS 41J 600 N □	1.6 ± 0.2/1.2 ± 0.2	60	0.01	6000

\* Test equipment : Agilent E4991A + 16193A or Equivalent

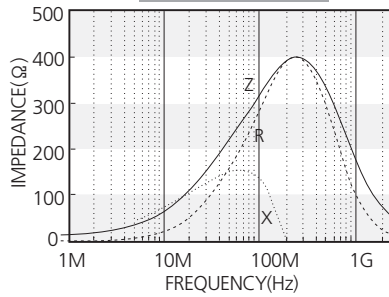


**Electrical Characteristics**

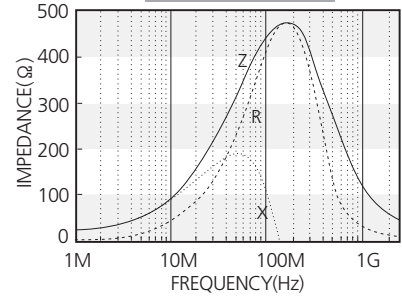
**CIS10P221**



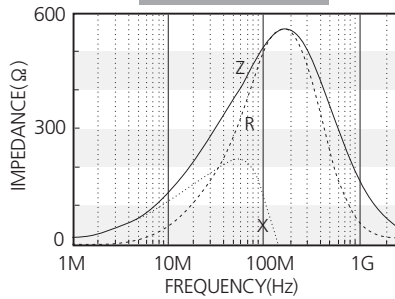
**CIS10P331**



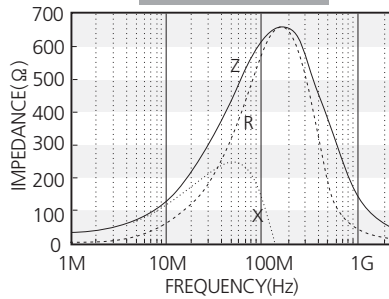
**CIS10P391**



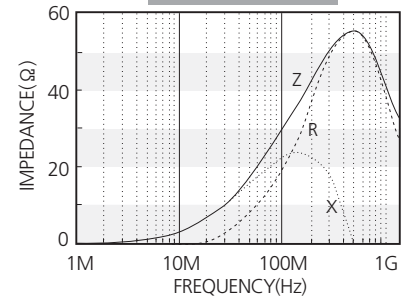
**CIS10P471**



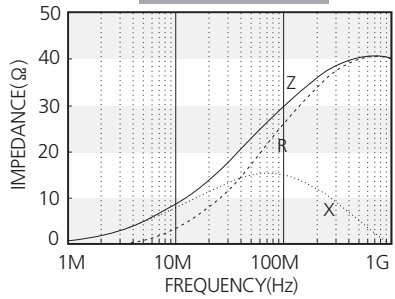
**CIS10P601**



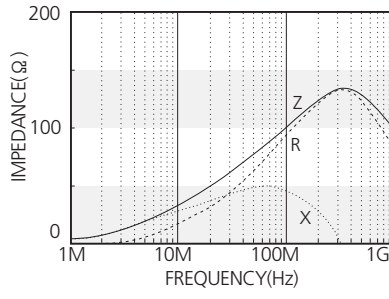
**CIS10J300**



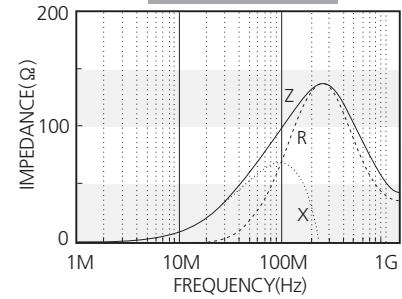
**CIS21P300**



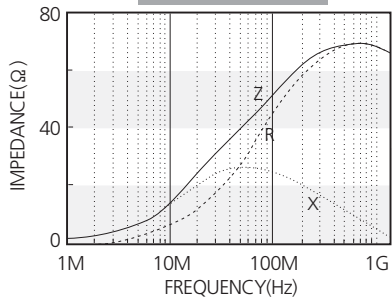
**CIS21P101**



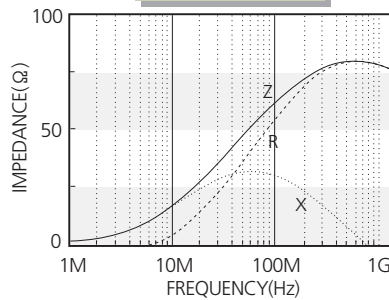
**CIS21J121**



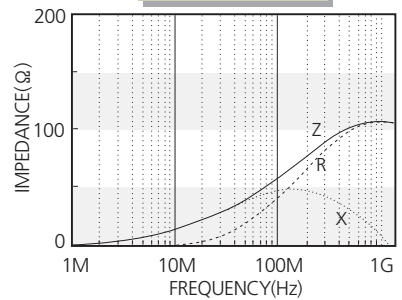
**CIS32P520**



**CIS41P600**

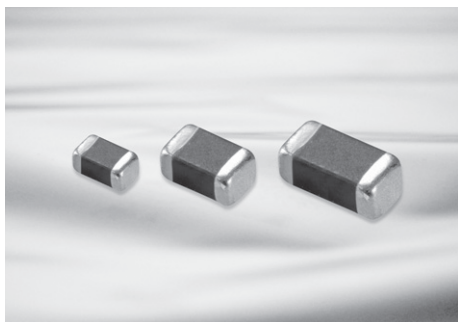


**CIS41J600**



# CIV Series

## GHz noise suppression



### Feature

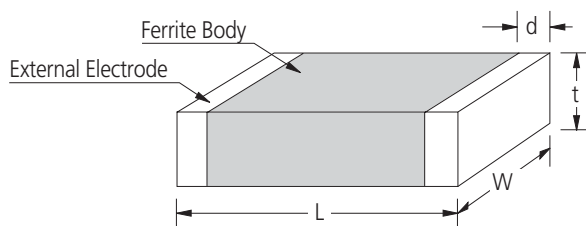
- CIV Series have high impedance in a GHz band and suppress GHz noise
- Small beads suitable for surface mounting
- Excellent solderability and high heat resistance for either flow or reflow soldering

### Application

- High frequency EMI prevention application to computers, printers, VCRs, TVs and mobile phones.

Operating Temp	-55~+125°C
Storage Temp (After mounting)	-55~+125°C

### Dimensions



Unit : mm

SIZE CODE	L	W	t	d
03	0.6±0.03	0.3±0.03	0.3±0.03	0.15±0.05
05	1.0±0.05	0.5±0.05	0.5±0.05	0.25±0.1

### Part Numbering

**CI**   **V**   **05**   **U**   **102**   **N**   **C**  
 (1)   (2)   (3)   (4)   (5)   (6)   (7)

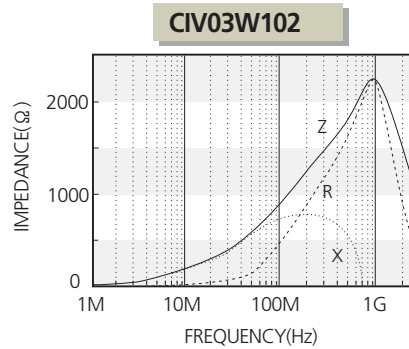
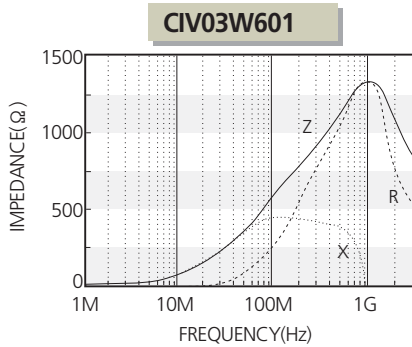
- (1) Chip Beads
- (2) V: For GHz Noise Suppression
- (3) Dimension
- (4) Material Code (U,J)
- (5) Nominal impedance (601:600Ω 102:1000Ω ,)
- (6) Thickness option (N: Standard, A: Thinner than standard, B: Thicker than standard)
- (7) Packaging (C: paper tape, E: embossed tape)



### CIV 0603(0201) Type

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	Impedance ( $\Omega$ ) $\pm 40\%$ @1 GHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIV03W601N □	0.03 $\pm$ 0.03	600	1500	1.7	150
CIV03W102N □	0.03 $\pm$ 0.03	1000	2300	2.9	120

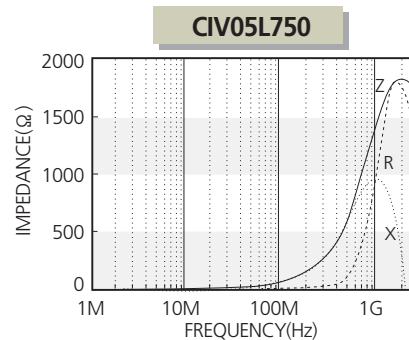
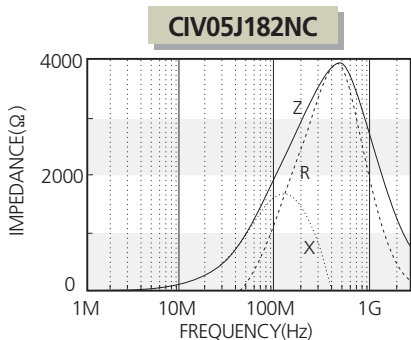
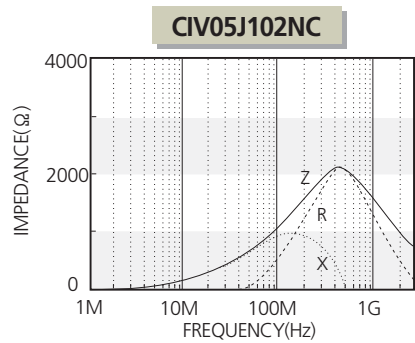
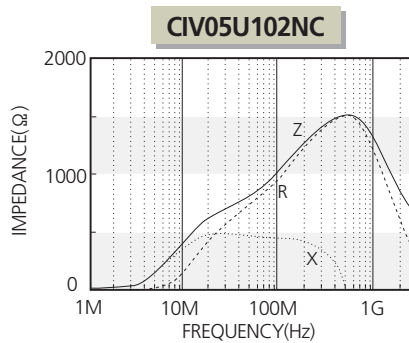
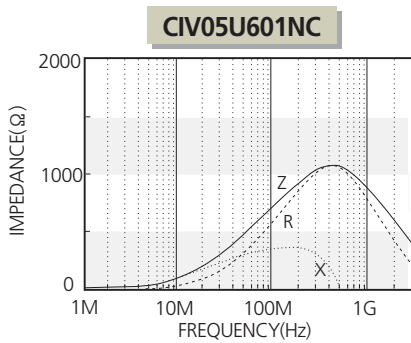
\* Test equipment: Agilent E4991A + 16197A or Equivalent



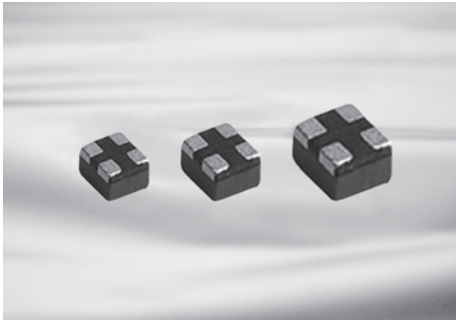
### CIV 1005(0402) Type

Part No.	Thickness (mm)	Impedance ( $\Omega$ ) $\pm 25\%$ @100 MHz	Impedance ( $\Omega$ ) $\pm 40\%$ @1 GHz	DC Resistance ( $\Omega$ ) Max.	Rated Current (mA) Max.
CIV05U601N □	0.5 $\pm$ 0.05	600	1000	0.7	300
CIV05U102N □	0.5 $\pm$ 0.05	1000	1400	1.1	250
CIV05J102N □	0.5 $\pm$ 0.05	1000	2000	1.25	250
CIV05J182N □	0.5 $\pm$ 0.05	1800	2700	2.20	200
CIV05L750N □	0.5 $\pm$ 0.05	75	1000	1.3	200

\* Test equipment: Agilent E4991A + 16192A or Equivalent



# Common Mode Filter



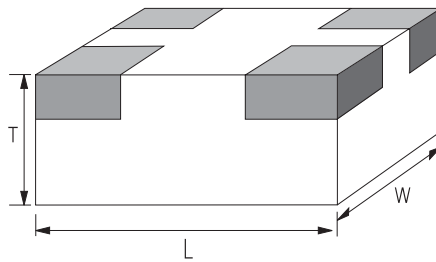
## Features

- A compact film type common mode filter
- Low DC resistance
- Free of all RoHS-regulated substances

## Application

- High speed interface such as LVDS, IEEE1394, USB 2.0, MIPI, S-ata2, etc.

## Dimensions



Unit : mm

SIZE CODE	L	W	T
040302	0.45±0.02	0.30±0.02	0.23±0.02
060503	0.65±0.05	0.50±0.05	0.30±0.05
080604	0.85±0.05	0.65±0.05	0.45±0.05

Common Mode Filter

## Part Numbering

**CMF**    **T**    **060503**    **GN**    **900**    **M**    **N**    **C**  
 (1)    (2)    (3)    (4)    (5)    (6)    (7)    (8)

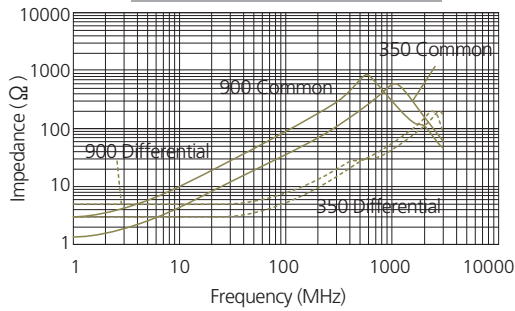
- (1) Common mode filter
- (2) T: Film type
- (3) Dimensions
- (4) Type code (GN: High speed, HN: Ultra High speed, GE: High Speed + ESD)
- (5) Nominal impedance (350: 35Ω, 650: 65Ω, 900: 90Ω )
- (6) Tolerance (N: ± 30%, M: ± 20%, S: Special)
- (7) Internal code
- (8) Packaging (C: Paper tape, E: Embossed tape)



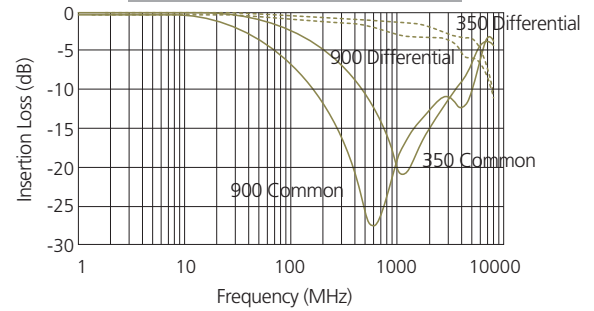
### CMFT080604GN Series

Part No.	Common Mode Impedance( $\Omega$ ) @100MHz	DC Resistance( $\Omega$ ) [1line]	Rated Current (mA) Max.	Rated Voltage (V) Max	Insulation Resistance (M $\Omega$ ) Min.
CMFT080604GN350N	35 $\Omega$ $\pm$ 30%	1.4 max	100	10	10
CMFT080604GN900M	90 $\Omega$ $\pm$ 20%	3.5 max	100	10	10

Impedance vs. Frequency Characteristics(Typ.)



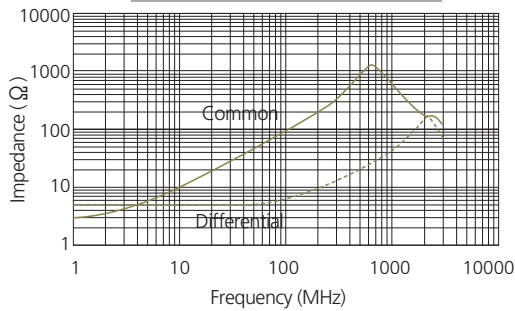
CM/DM Transmission Characteristics(Typ.)



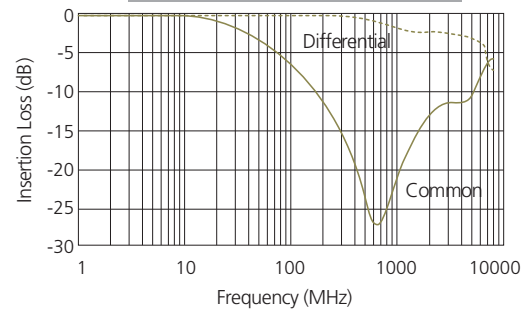
### CMFT060503GN Series

Part No.	Common Mode Impedance( $\Omega$ ) @100MHz	DC Resistance( $\Omega$ ) [1line]	Rated Current (mA) Max.	Rated Voltage (V) Max	Insulation Resistance (M $\Omega$ ) Min.
CMFT060503GN900M	90 $\Omega$ $\pm$ 20%	3.9 max	100	5	10

Impedance vs. Frequency Characteristics(Typ.)



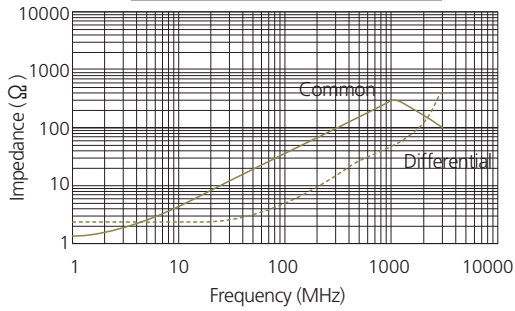
CM/DM Transmission Characteristics(Typ.)



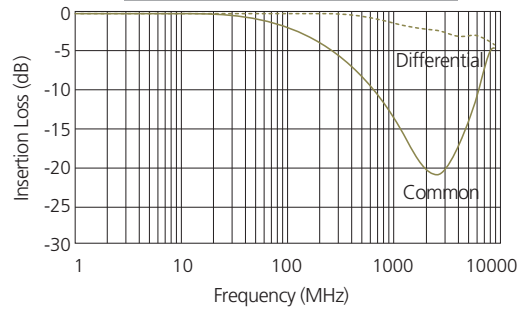
**CMFT080604HN Series**

Part No.	Common Mode Impedance( $\Omega$ ) @100MHz	DC Resistance( $\Omega$ ) [1line]	Rated Current (mA) Max.	Rated Voltage (V) Max	Insulation Resistance (M $\Omega$ ) Min.
CMFT080604HN350S	35 $\Omega$ $\pm$ 12 $\Omega$	1.3 max	100	10	10

Impedance vs. Frequency Characteristics(Typ.)



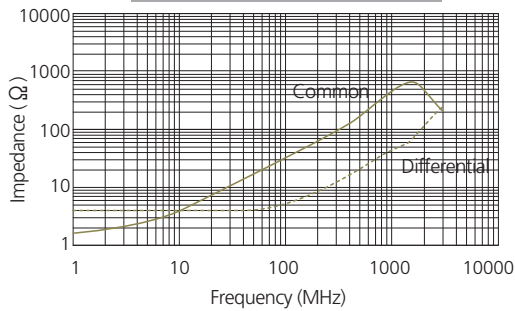
CM/DM Transmission Characteristics(Typ.)



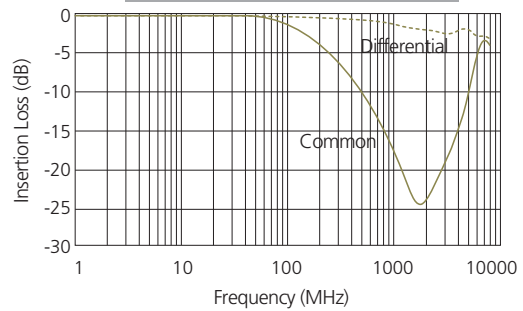
**CMFT060503HN Series**

Part No.	Common Mode Impedance( $\Omega$ ) @100MHz	DC Resistance( $\Omega$ ) [1line]	Rated Current (mA) Max.	Rated Voltage (V) Max	Insulation Resistance (M $\Omega$ ) Min.
CMFT060503HN350S	35 $\Omega$ $\pm$ 12 $\Omega$	2.4 max	100	5	10

Impedance vs. Frequency Characteristics(Typ.)



CM/DM Transmission Characteristics(Typ.)

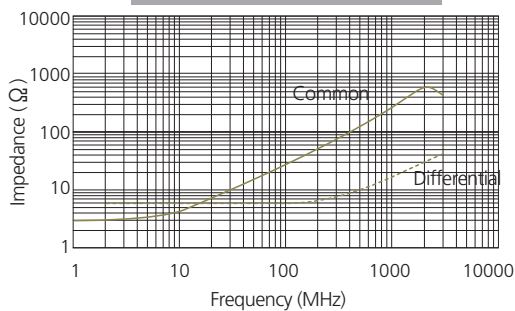


Common Mode Filter

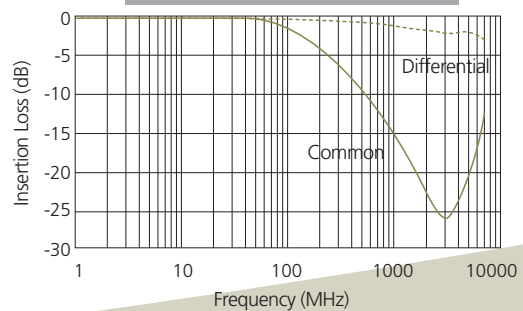
**CMFT040302HN Series**

Part No.	Common Mode Impedance( $\Omega$ ) @100MHz	DC Resistance( $\Omega$ ) [1line]	Rated Current (mA) Max.	Rated Voltage (V) Max	Insulation Resistance (M $\Omega$ ) Min.
CMFT040302HN350S	35 $\Omega$ $\pm$ 12 $\Omega$	3.5 max	100	5	10

Impedance vs. Frequency Characteristics(Typ.)



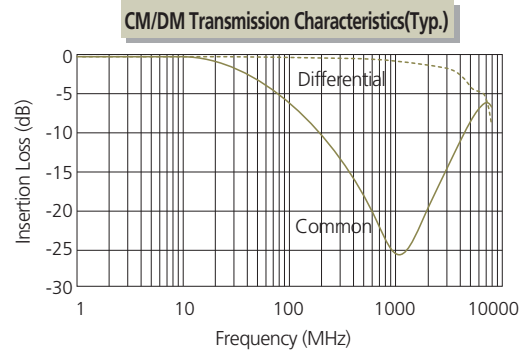
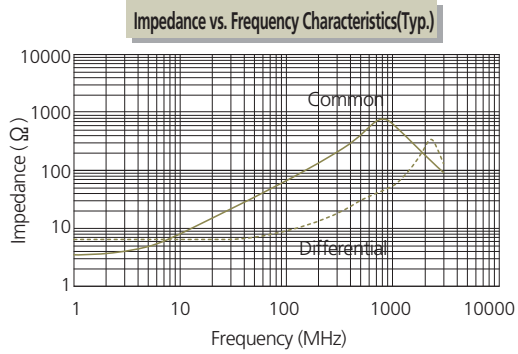
CM/DM Transmission Characteristics(Typ.)





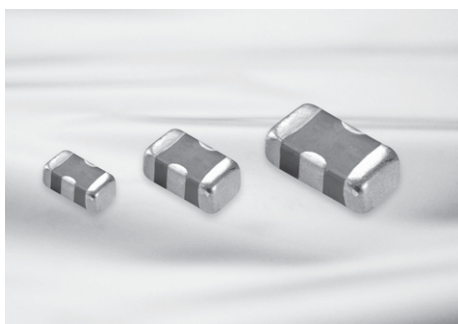
### CMFT080604GE Series

Part No.	Common Mode Impedance( $\Omega$ ) @100MHz	DC Resistance( $\Omega$ ) Max[1line]	Capacitance (pF) Max @1MHz	Leakage Current ( $\mu$ A) Max.	Rated Current (mA) Max.	Rated Voltage (V) Max	Insulation Resistance ( $M\Omega$ ) Min.
CMFT080604GE750N	$75\Omega \pm 30\%$	3.3 max	1	10	100	10	10



# EMI products

## 3-Terminal Capacitor



### Feature

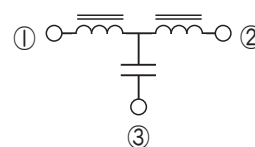
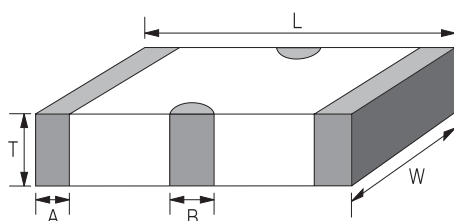
- Lower ESL Characteristics
- High Performance at High Frequency Range
- Small size enables high density mounting
- Effective noise suppression filter

### Application

- High frequency EMI prevention applicable to digital equipment such as TV, VCR, LCD monitors and PDP TVs.
- Computer equipment such as personal computers and peripherals.

More excellent by-pass filter than MLCC.  
EMIC Series is capacitor type of three terminals and low residual inductance value.

### Dimensions



Equivalent circuit

Unit : mm

SIZE CODE	L	W	T	A	B
10	1.6±0.15	0.8±0.1	0.6±0.1	0.25±0.15	0.4±0.1
21	2.0±0.2	1.25±0.2	0.8±0.2	0.3±0.2	0.6±0.2
31	3.2±0.2	1.6±0.2	1.1max	0.4±0.3	1.0±0.3

### Part Numbering

**EMIC 10 B 473 S A N C**  
(1) (2) (3) (4) (5) (6) (7) (8)

- (1) Chip EMI Filter 3-Terminal Capacitor For Signal line
- (2) Dimensions
- (3) Capacitance temperature characteristics  
C : 0±30ppm/°C  
A : ±15%(-55~85°C)  
B : ±15%(-55~125°C)  
F : -82~+22%(-30~+85°C)
- (4) Nominal capacitance (101: 100pF, 102: 1000pF, 104: 100000pF)
- (5) Capacitance tolerance (M: ±20%, S: +50%,-20%)
- (6) Rated voltage (P: 10V, O: 16V, A: 25V, B: 50V)
- (7) Thickness option (N: Standard, A: Thinner than standard, B: Thicker than standard)
- (8) Packaging (C: Paper 7" Reel, D: Paper 13" Reel)



### EMIC 1608(0603) Type

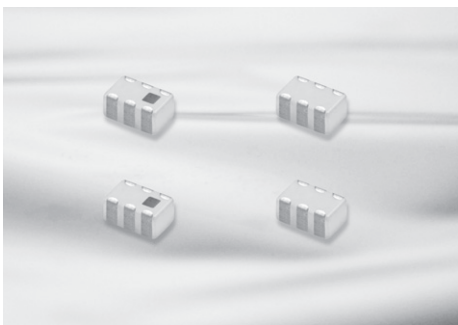
Part No.	Capacitance (pF)	Tolerance	Rated Voltage (V) Max.	Insulation Resistance (MΩ)	DC Resistance (Ω) Max.	Rated Current (mA) Max
EMIC10B104MONC	100000	+20~-20%	16	1000 min	0.1	2000

### EMIC 2012(0805) Type

Part No.	Capacitance (pF)	Tolerance	Rated Voltage (V) Max.	Insulation Resistance (MΩ)	DC Resistance (Ω) Max.	Rated Current (mA) Max
EMIC21B471SBNC	470	+50~-20%	50	10000 min	0.3	300
EMIC21B223SBNC	22000	+50~-20%	50	10000 min	0.08	1000
EMIC21F104SANC	100000	+50~-20%	25	1000 min	0.1	1000

### EMIC 3216(1206) Type

Part No.	Capacitance (pF)	Tolerance	Rated Voltage (V) Max.	Insulation Resistance (MΩ)	DC Resistance (Ω) Max.	Rated Current (mA) Max
EMIC31B222MANC	2200	+20~-20%	25	1000 min	0.3	300
EMIC31B104SANC	100000	+50~-20%	25	1000 min	0.1	1000



## Feature

- Small and thin size
- Low Insertion Loss
- Lead free

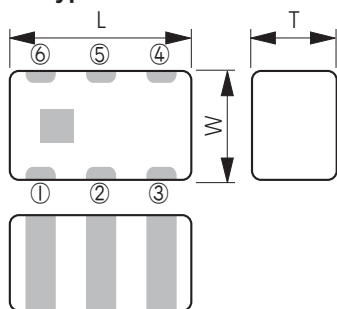
## Application

- Applying to mobile phones and wireless LAN Combo.
- AMPS/GPS, AMPS/PCS, CDMAWCDMA, CDMA/S-DMB, PCS/S-DMB, T-DMB/CDMA,
- T-DMB/K-PCS, CDMAW-LAN, CDMA/K-PCS, iDEN/GPS

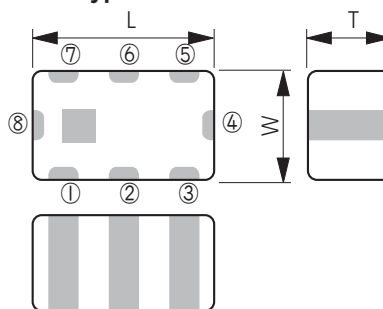
Diplexer is used for separating specific frequency in mobile phones and wireless LAN 11a/b/g. Two kinds of pin assignment demanded on customers are lined up so that designing circuit regardless output direction is available.

## Dimensions

### ■ F Type



### ■ H Type



Dimension(mm)		Terminal	
L	2.00±0.15	Common	②
W	1.25±0.15	Low Band	⑥
		High Band	④
T	0.95±0.10	GND	① ③ ⑤

Dimension(mm)		Terminal	
L	2.00±0.15	Common	②
W	1.25±0.15	Low Band	⑧
		High Band	④
T	0.95±0.15	GND	①③⑤⑥⑦

※ Pin assignment can be changeable

## Part Numbering

**DX 21 T F 3L 01**  
 (1) (2) (3) (4) (5) (6)

- (1) Diplexer
- (2) Dimension
- (3) Material code
- (4) Terminal number (F: 6, H: 8)
- (5) Low band: Band 3  
High band: L Band
- (6) Serial number, pin assignment

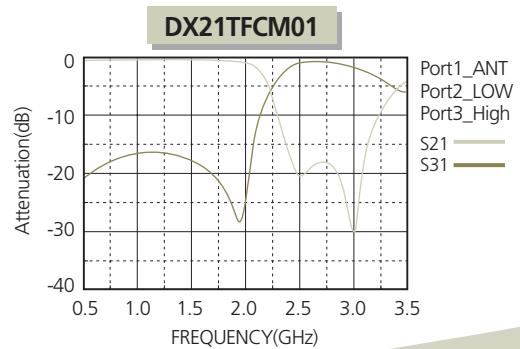
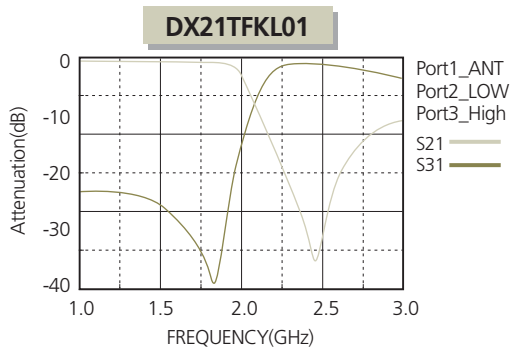
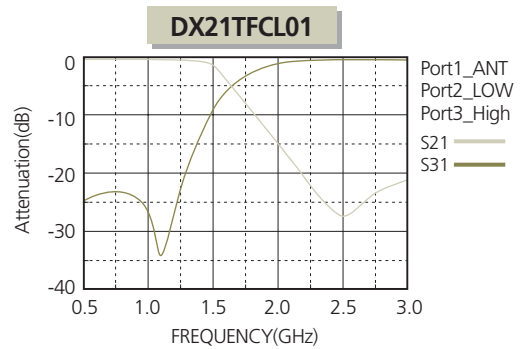
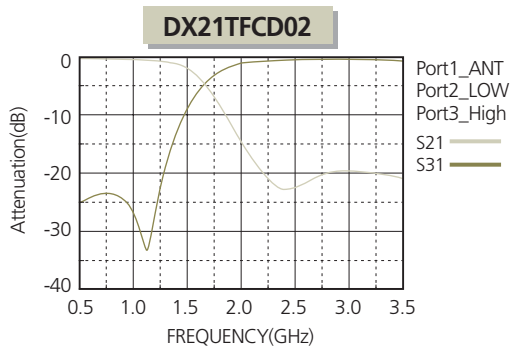
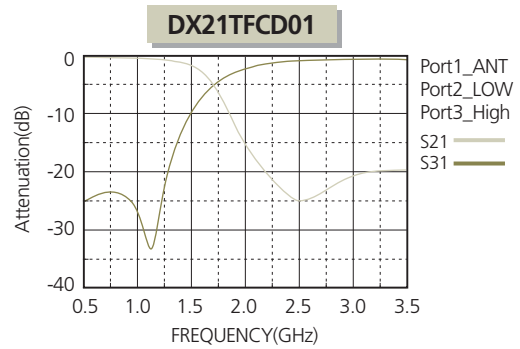
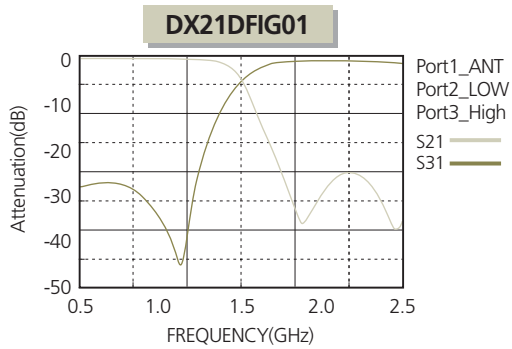
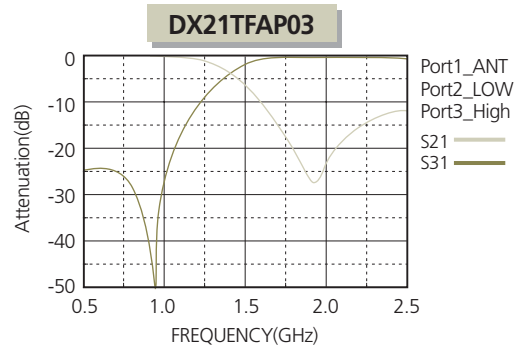
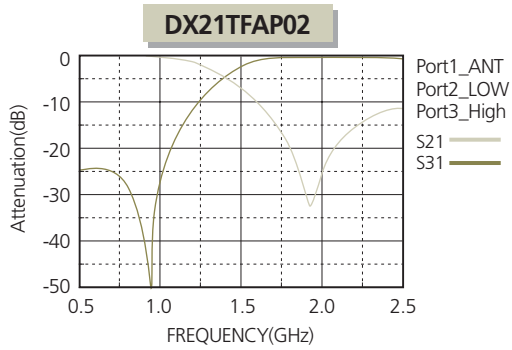
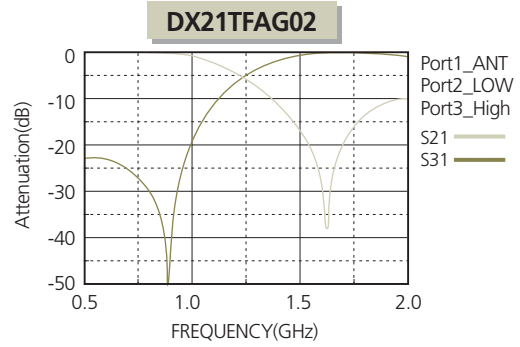
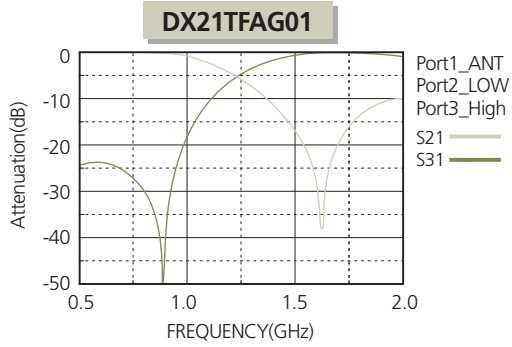




## HHP Diplexer

Part No.	Application	Thickness (mm)	Center Frequency	Insertion Loss (dB) Max.	Attenuation(dB) Min.
DX21TFAG01	APMS / GPS	0.95	859MHz/ 1575MHz	0.5 at 859MHz	15 at 1575MHz
				0.7 at 1575MHz	15 at 859MHz
DX21TFAG02	APMS / GPS	0.95	859MHz/ 1575MHz	0.5 at 859MHz	15 at 1575MHz
				0.7 at 1575MHz	15 at 859MHz
DX21TFAP02	APMS / PCS	0.95	859MHz/ 1920MHz	0.5 at 859MHz	20 at 1920MHz
				0.55 at 1920MHz	20 at 859MHz
DX21TFAP03	APMS / PCS	0.95	859MHz/ 1920MHz	0.5 at 859MHz	20 at 1920MHz
				0.55 at 1920MHz	20 at 859MHz
DX21DFIG01	iden / GPS	1.05	806MHz/ 1576.42MHz	0.65 at 873.5MHz	16 at 1575.42MHz
				0.70 at 1575.42MHz	16 at 1631MHz
DX21TFCD01	CDMA / S-DMB	0.95	859MHz/ 2630MHz	0.5 at 859MHz	13 at 1798MHz
				0.6 at 2645MHz	17 at 873.5MHz
DX21TFCD02	CDMA / S-DMB	0.95	859MHz/ 2630MHz	0.5 at 859MHz	20 at 2645MHz
				0.6 at 2630MHz	20 at 859MHz
DX21TFCL01	CDMA / W-LAN	0.95	859MHz/ 2450MHz	0.5 at 859MHz	17 at 2630MHz
				0.6 at 2450MHz	20 at 859MHz
DX21TFKL01	K-PCS / W-LAN	0.95	1810MHz/ 2450MHz	0.5 at 859MHz	20 at 2450MHz
				0.8 at 1810MHz	20 at 859MHz
DX21TFM01	Cellular/WiMAX	1.00	1368MHz/ 2592.5MHz	1.0 at 2450MHz	15 at 2450MHz
				1.2 at 2592.5MHz	15 at 1810MHz
DX21TFM01	Cellular/WiMAX	1.00	1368MHz/ 2592.5MHz	1.0 at 1368MHz	15 at 2592.5MHz
				1.2 at 2592.5MHz	15 at 1368MHz

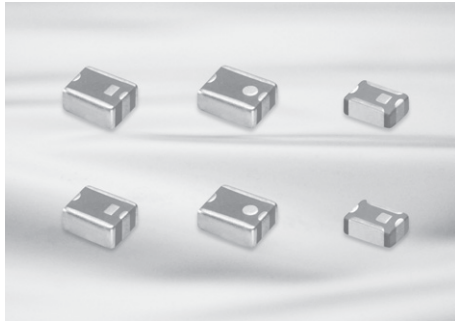
**Electrical Characteristics**



Diplexer

# LC Filter

## Band pass/Low pass filter

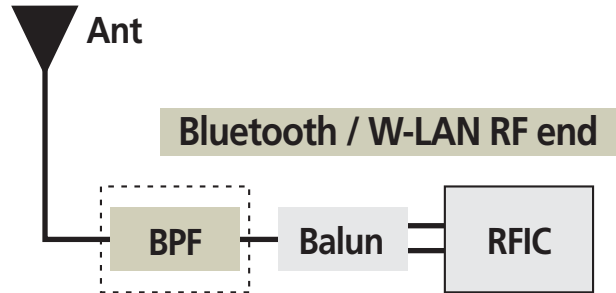


### Feature

- High Attenuation, Low Insertion Loss
- Small and Thin size
- Lead free

### Application

- Bluetooth Module
- W-LAN Module
- HHP-WiBro, WiMAX, DMB



Chip LC filter made by our own RF design and LTCC fabrication technology has excellent products with low loss and good attenuation characteristics

### Part Numbering

<b>LC</b>	<b>B</b>	<b>10</b>	<b>C</b>	<b>2450</b>	<b>K1</b>
(1)	(2)	(3)	(4)	(5)	(6)

- (1) Chip LC Filter
- (2) B: Band Pass Filter, L : Low Pass Filter
- (3) Dimension (10 : 1.6x0.8mm, 21 : 2.0x1.25mm, 22 : 2.5x2.0mm)
- (4) Material code (C, M, T)
- (5) Center frequency [MHz]
- (6) Serial Number

### Band Pass Filter

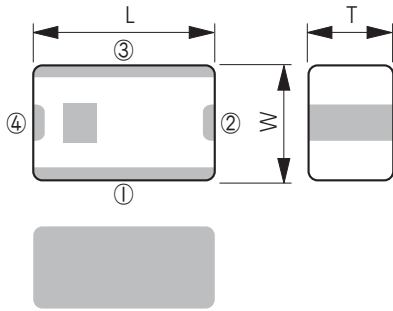
Application	Part No.	L×W×T (mm)	Pass Band (GHz)	IL (dB) Max.	VSWR	Attenuation (dB) Min. (at MHz)			
11b/g BT	LCB22M2450B1	2.5×2.0×1.0	2.4 ~2.5	1.2	2.0	50 (1200)	30 (2f0)		
	LCB22B2450L1	2.5×2.0×1.0	2.4 ~2.5	2.2	2.0	40 (2100)	30 (2f0)		
	LCB22B2450S1	2.5×2.0×1.0	2.4 ~2.5	2.5	2.0	20 (1700~1900)	20 (2700)	30 (3f0)	15 (3f0)
	LCB21B2450F2	2.0×1.25×0.75	2.4 ~2.5	2.6	2.0	40 (880~960)	30 (1710~1990)	30 (2f0)	
	LCB21B2450Q1	2.0×1.25×0.95	2.4 ~2.5	1.8	2.0	30 (1300)	10 (2000)	20 (3600)	35 (2f0)
	LCB21B2450Q3	2.0×1.25×0.75	2.4 ~2.5	1.8	2.0	30 (1300)	10 (2000)	15 (3600)	30 (2f0)
	LCB10B2450K3	1.6×0.8×0.6	2.4 ~2.5	2.2	2.0	25 (880~960)	16 (2f0)	20 (3f0)	
	LCB10B2450K4	1.6×0.8×0.6	2.4 ~2.5	1.8	2.0	27 (880~960)	36 (2f0)	36 (3f0)	
T-DMB	LCB22G0205A3	2.5×2.0×1.2	0.174 ~0.237	1.5	2.0	10 (100)	40 (1750~1870)		
	LCB22G0205B3	2.5×2.0×1.2	0.174 ~0.237	1.5	2.0	10 (100)	40 (824~894)		

### Low Pass Filter

Part No.	Application	L×W×T (mm)	Pass Band (GHz)	IL (dB) Max.	VSWR	Attenuation (dB) Min. (at MHz)		
LCL10T2500A1	WiBro WiMAX	1.6×0.8×0.6	2.3 ~2.7	0.55	1.7	35 (2f0)	25 (3f0)	
LCL10T2450A1	11b/g,BT	1.6×0.8×0.6	2.4 ~2.5	0.45	1.5	35 (2f0)	25 (2f0)	



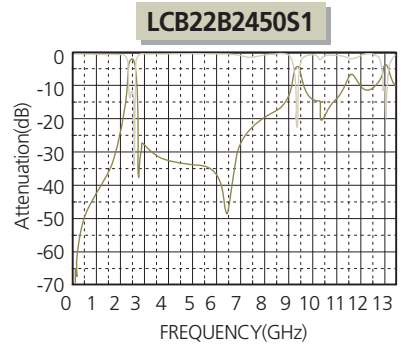
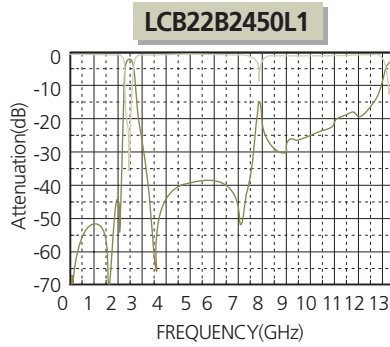
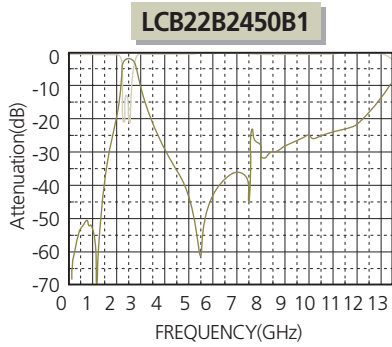
**Dimensions & Frequency Characteristics Band Pass Filter**



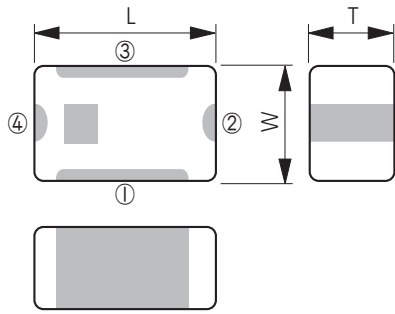
Dimension(mm)	
L	$2.50 \pm 0.20$
W	$2.00 \pm 0.20$
T	$1.00 \pm 0.10$

Terminal	
Input	④
Output	②
GND	① ③

S11  
S21



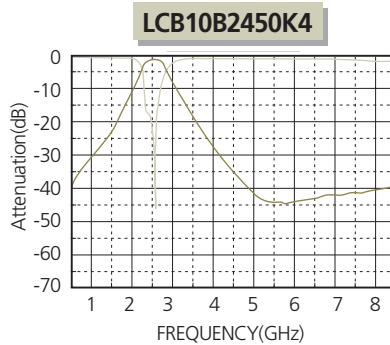
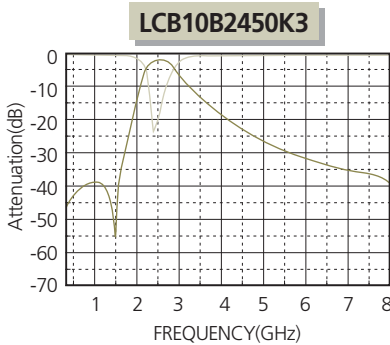
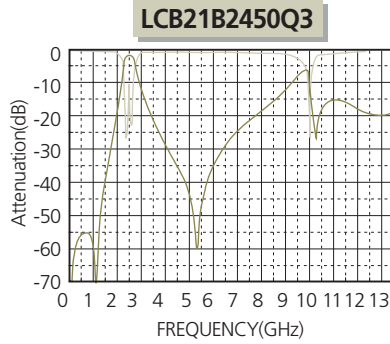
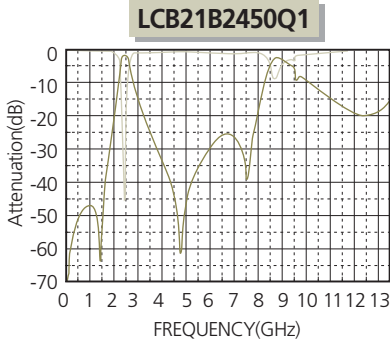
**Dimensions & Frequency Characteristics Band Pass Filter**



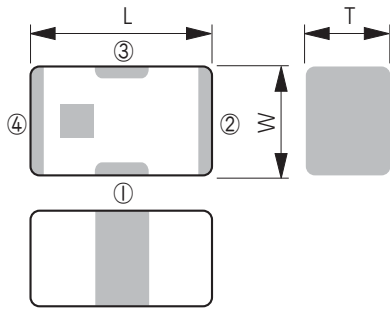
Dimension(mm)	
1608	L 1.60±0.2/-0.1
	W 0.80±0.2/-0.1
	T 0.60±0.10
2012	L 2.00±0.15
	W 1.25±0.10
	T 0.95±0.10 (0.75max : Q3, Q5)

Terminal	
Input	④
Output	②
GND	① ③

S11  
S21



**Dimensions & Frequency Characteristics Band Pass Filter**

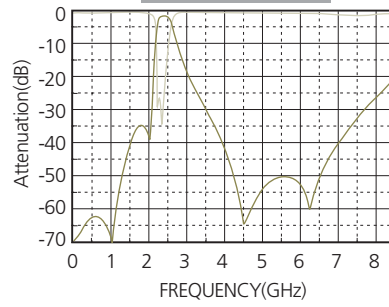


Dimension(mm)	
L	$2.00 \pm 0.15$
W	$1.25 \pm 0.10$
T	0.75max

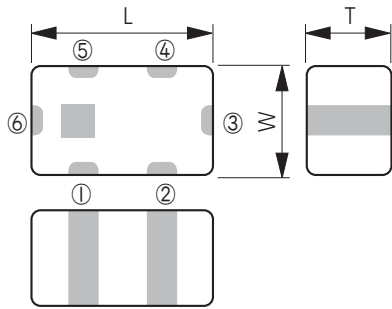
Terminal	
Input	①
Output	③
GND	② ④

S11  
S21

**LCB21B2450F2**



**Dimensions & Frequency Characteristics Band Pass Filter**



Dimension(mm)	
L	2.50±0.20
W	2.00±0.20
T	1.20±0.10

	Terminal	
	A3	B3
Input	⑥	⑥
Output	③	③
GND	① ⑤	① ④
N.C	② ④	② ⑤

S11  
S21

