

## Surface Mount EMI Filters Ferrite Chip Beads

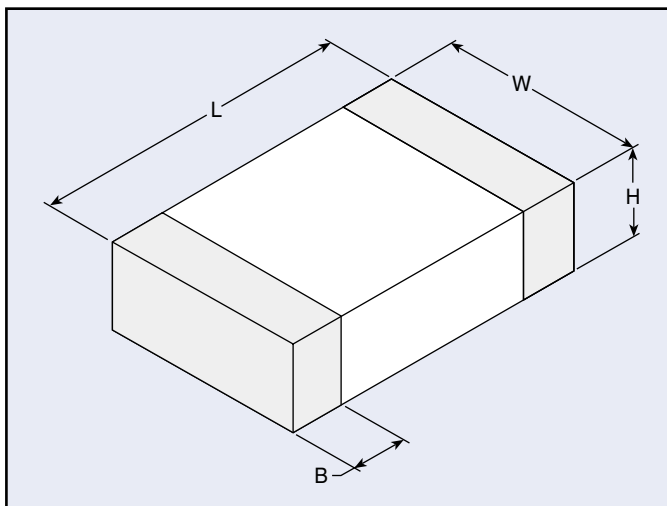


### Features

- Multilayer design
- Available in standard EIA/EIAJ chip sizes (0402/1005, 0603/1608, 0805/2012, 1206/3216, etc.)
- Excellent solderability is achieved from a nickel barrier with a solder overplate
- Provides EMI attenuation without grounding
- Broad range of impedance values available (standard line has values of 5  $\Omega$  to 2,000  $\Omega$  at 100 MHz)
- Closed magnetic circuit
- Parts are suitable for flow or re-flow soldering
- Available in tape and reel for easy placement
- Operational temperature range of -55°C to +125°C

### Applications

- Telecommunications equipment (cellular phones, cordless phones, faxes and ISDN's)
- Digital audio/visual equipment (TV, HDTV, VTR, DVD, CATV tuners and etc.)
- GPS and car navigation equipment
- High speed clocks
- Consumer electronics
- Signal lines
- LAN and WAN hardware



### Part Numbering System

Example: **FCB-0603-B102P7**

<b>FCB</b>	-	<b>0603</b>	-	<b>B</b>	<b>102</b>	<b>P</b>	<b>7</b>
Series		Part Size		Material Characteristic	Impedance Value	Tolerance Code	Packaging
Ferrite Chip Beads		EIA Size (Length x Width)		Determined by the desired electrical characteristic	10(2)  (2) = the # of zeros that will follow the first two digits  Example: 10(2) = 10 followed by 2 zeros = 1,000 Ohms	Standard Value is P  P = $\pm 25\%$ M = $\pm 20\%$ K = $\pm 10\%$ J = $\pm 5\%$	7 = 7 inch reel 3 = 13 inch reel

### Land Patterns and Soldering Temperature Profiles

- See page 45.

### Packaging Specifications and Storage Requirements

- See page 46.

# Surface Mount EMI Filters Ferrite Chip Beads

## Physical Characteristics

Size		Physical Dimensions			
EIA	EIAJ	Length (L)	Width (W)	Height (H)	Termination Band (B)
0402	1005	0.039 ± 0.004 (1.00 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.020 ± 0.004 (0.50 ± 0.10)	0.010 ± 0.004 (0.25 ± 0.10)
0603	1608	0.063 ± 0.006 (1.60 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.031 ± 0.006 (0.80 ± 0.15)	0.014 ± 0.006 (0.36 ± 0.15)
0805	2012	0.079 ± 0.008 (2.00 ± 0.20)	0.049 ± 0.008 (1.25 ± 0.20)	0.035 ± 0.008 (0.90 ± 0.20)	0.020 ± 0.010 (0.51 ± 0.25)
1206	3216	0.126 ± 0.008 (3.20 ± 0.20)	0.063 ± 0.008 (1.60 ± 0.20)	0.043 ± 0.008 (1.10 ± 0.20)	0.020 ± 0.010 (0.51 ± 0.25)
1806	4516	0.177 ± 0.010 (4.50 ± 0.25)	0.063 ± 0.008 (1.60 ± 0.20)	0.055 ± 0.010 (1.40 ± 0.25)	0.020 ± 0.010 (0.51 ± 0.25)
1812	4532	0.177 ± 0.010 (4.50 ± 0.25)	0.126 ± 0.010 (3.20 ± 0.25)	0.055 ± 0.010 (1.40 ± 0.25)	0.020 ± 0.010 (0.51 ± 0.25)

Dimensions in inches (mm)

## Electrical Characteristics

### Standard FCB-0402 Sizes

Part Number	Impedance Ω at 100 MHz	Max. DCR Ω	Max. Current mA
FCB-0402-B100P*	10	0.05	500
FCB-0402-B150P*	15	0.07	300
FCB-0402-B700P*	70	0.40	200
FCB-0402-B121P*	120	0.50	
FCB-0402-B221P*	220	0.70	100
FCB-0402-B601P*	600	1.10	50
FCB-0402-B102P*	1,000	1.50	50

Notes: \* Please add packaging code at the end of part.  
To change Tolerance Code, replace P with other tolerance values.

### FCB-0603 High Speed Beads

Part Number	Impedance Ω at 100 MHz	Max. DCR Ω	Max. Current mA
FCB-0603-H180P*	18	0.10	400
FCB-0603-H121P*	120	0.40	
FCB-0603-H141P*	140	0.30	200
FCB-0603-H421P*	420	0.50	
FCB-0603-H601P*	600	0.65	
FCB-0603-H721P*	720	0.70	150
FCB-0603-H102P*	1,000	0.60	50

Notes: \* Please add packaging code at the end of part.  
To change Tolerance Code, replace P with other tolerance values.

### Standard FCB-0603 Sizes

Part Number	Impedance Ω at 100 MHz	Max. DCR Ω	Max. Current mA
FCB-0603-B300P*	30	0.10	400
FCB-0603-B400P*	40		
FCB-0603-B600P*	60		
FCB-0603-B750P*	75	0.20	300
FCB-0603-B800P*	80		
FCB-0603-B900P*	90		
FCB-0603-B101P*	100		
FCB-0603-B121P*	120		
FCB-0603-B141P*	140	0.30	250
FCB-0603-B151P*	150		
FCB-0603-B181P*	180		
FCB-0603-B221P*	220		
FCB-0603-B301P*	300	0.35	230
FCB-0603-B421P*	420	0.40	210
FCB-0603-B601P*	600	0.45	
FCB-0603-B102P*	1,000	0.60	190

Notes: \* Please add packaging code at the end of part.  
To change Tolerance Code, replace P with other tolerance values.

# Surface Mount EMI Filters Ferrite Chip Beads

## Electrical Characteristics *continued*

### Standard FCB-0805 Sizes

Part Number	Impedance $\Omega$ at 100 MHz	Max. DCR $\Omega$	Max. Current mA
FCB-0805-A050P*	5	0.07	800
FCB-0805-A070P*	7		
FCB-0805-A100P*	10		
FCB-0805-A110P*	11		
FCB-0805-A300P*	30	0.10	800
FCB-0805-A400P*	40		
FCB-0805-A500P*	50		
FCB-0805-A600P*	60		
FCB-0805-A750P*	75		
FCB-0805-A800P*	80		
FCB-0805-B900P*	90	0.15	400
FCB-0805-B101P*	100		
FCB-0805-B121P*	120		
FCB-0805-B151P*	150		
FCB-0805-B181P*	180		
FCB-0805-B201P*	200		
FCB-0805-B301P*	300	0.30	200
FCB-0805-B401P*	400		
FCB-0805-B421P*	420		
FCB-0805-B601P*	600		
FCB-0805-B751P*	750	0.40	200
FCB-0805-B102P*	1,000		
FCB-0805-B152P*	1,500	0.55	200
FCB-0805-B202P*	2,000	0.70	200
FCB-0805-E202P*	2,000	0.30	100

### FCB-0805 High Speed Beads

Part Number	Impedance $\Omega$ at 100 MHz	Max. DCR $\Omega$	Max. Current mA
FCB-0805-H180P*	18	0.10	600
FCB-0805-H201P*	200	0.40	
FCB-0805-H601P*	600	0.40	200
FCB-0805-H751P*	750	0.70	
FCB-0805-H102P*	1,000	0.75	100

**Notes:** \* Please add packaging code at the end of part.  
To change Tolerance Code, replace P with other tolerance values.  
Consult factory for other impedance values of the 0805 footprint that are available from Spectrum Control.

### Standard FCB-1206 Sizes

Part Number	Impedance $\Omega$ at 100 MHz	Max. DCR $\Omega$	Max. Current mA
FCB-1206-A190P*	19		
FCB-1206-A260P*	26		
FCB-1206-A300P*	30	0.10	600
FCB-1206-A310P*	31		
FCB-1206-A500P*	50		
FCB-1206-A600P*	60		
FCB-1206-A700P*	70		
FCB-1206-A800P*	80		
FCB-1206-A900P*	90	0.20	400
FCB-1206-A101P*	100		
FCB-1206-A121P*	120		
FCB-1206-A201P*	200	0.30	300
FCB-1206-A301P*	300	0.40	
FCB-1206-A601P*	600	0.50	200
FCB-1206-B102P*	1,000	0.70	150
FCB-1206-B152P*	1,500 @ 50 MHz	0.90	100
FCB-1206-B202P*	2,000 @ 30 MHz	0.60	

### FCB-1206 High Speed Beads

Part Number	Impedance $\Omega$ at 100 MHz	Max. DCR $\Omega$	Max. Current mA
FCB-1206-H300P*	30	0.10	600
FCB-1206-H181P*	180	0.30	300
FCB-1206-H601P*	600	0.30	200

**Notes:** \* Please add packaging code at the end of part.  
To change Tolerance Code, replace P with other tolerance values.  
Consult factory for other impedance values of the 1206 footprint that are available from Spectrum Control.

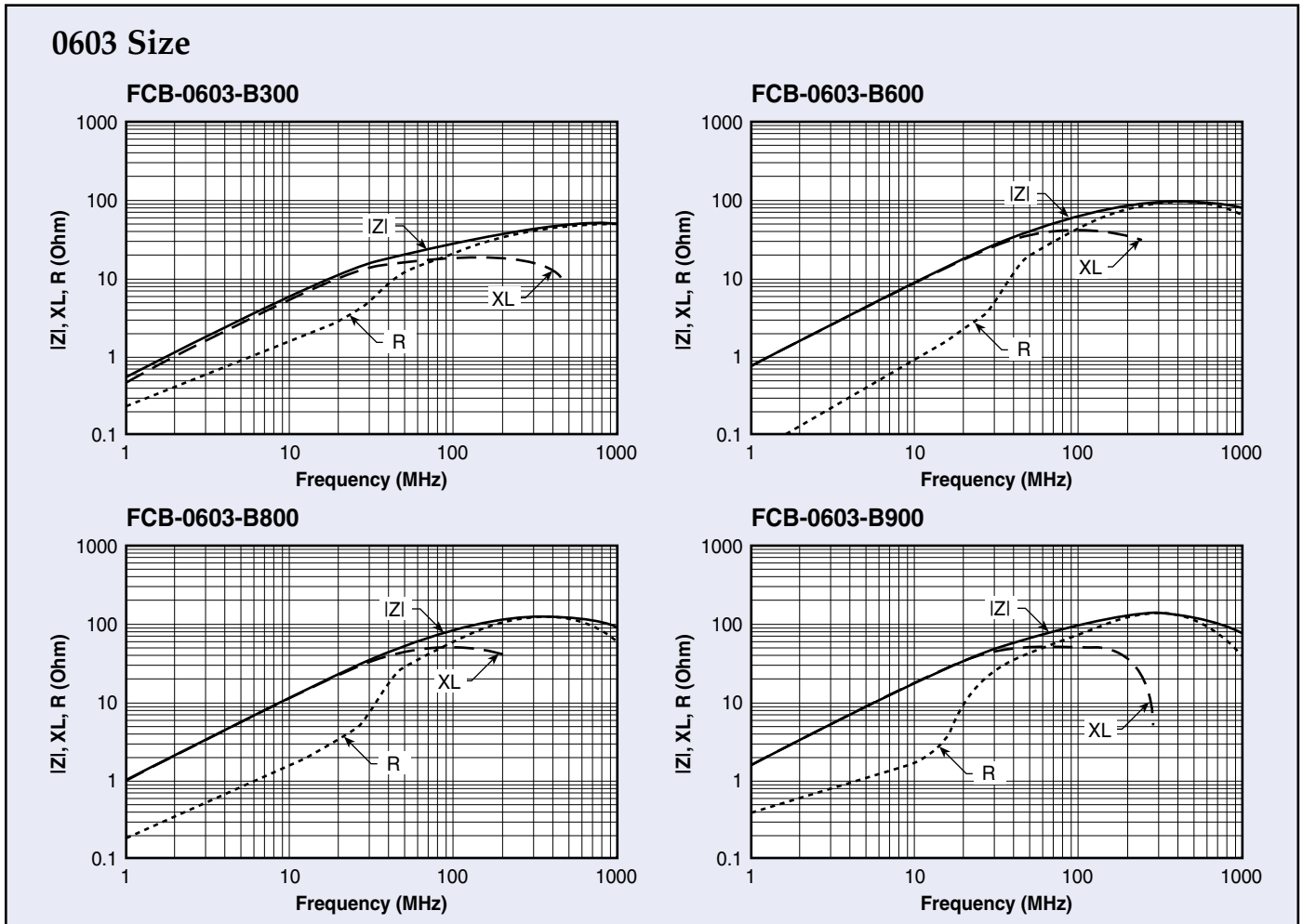
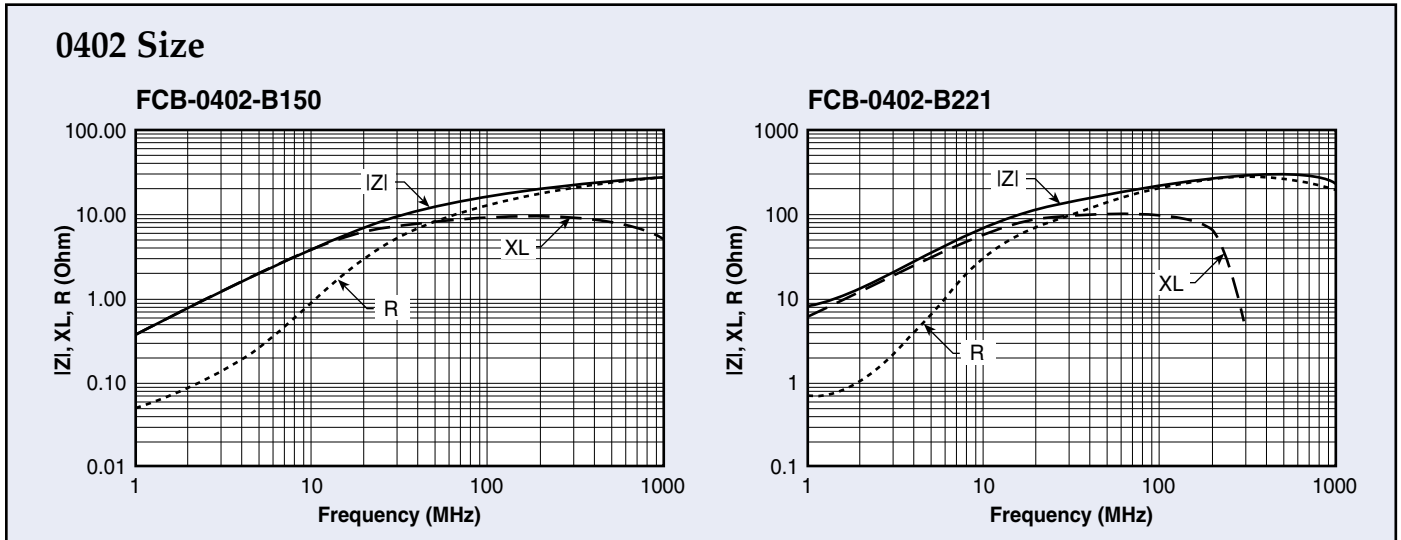
### Standard FCB-1806 and FCB-1812 Sizes

Part Number	Impedance $\Omega$ at 100 MHz	Max. DCR $\Omega$	Max. Current mA
FCB-1806-A800P*	80	0.30	300
FCB-1806-A101P*	100	0.30	200
FCB-1812-B121P*	120	0.30	300

**Notes:** \* Please add packaging code at the end of part.  
To change Tolerance Code, replace P with other tolerance values.  
Consult factory for other impedance values of the 1806 and 1812 footprint that are available from Spectrum Control.

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## Typical Impedance Characteristics (Curves not listed are available upon request or at our website.)

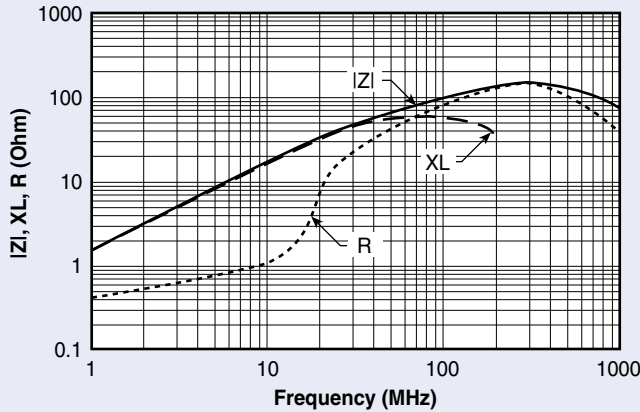


# Surface Mount EMI Filters Ferrite Chip Beads

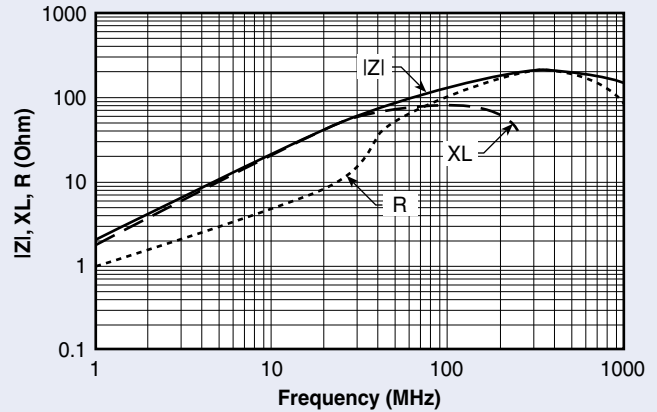
## Typical Impedance Characteristics (Curves not listed are available upon request or at our website.)

### 0603 Size *continued*

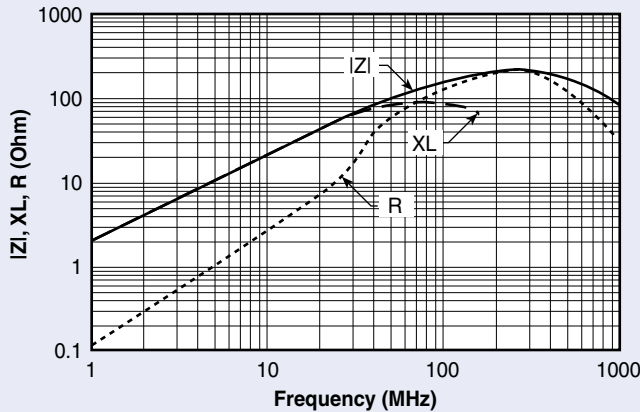
**FCB-0603-B101**



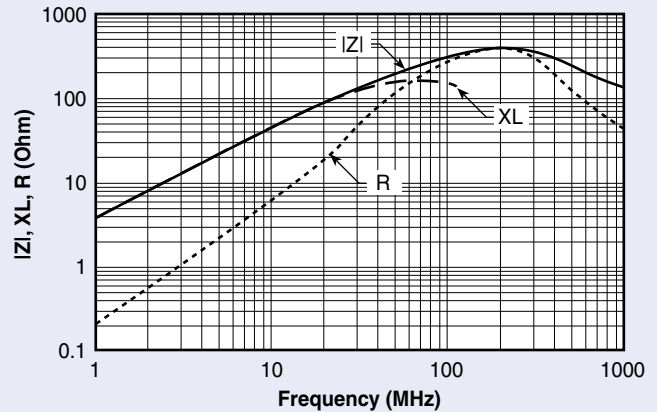
**FCB-0603-B121**



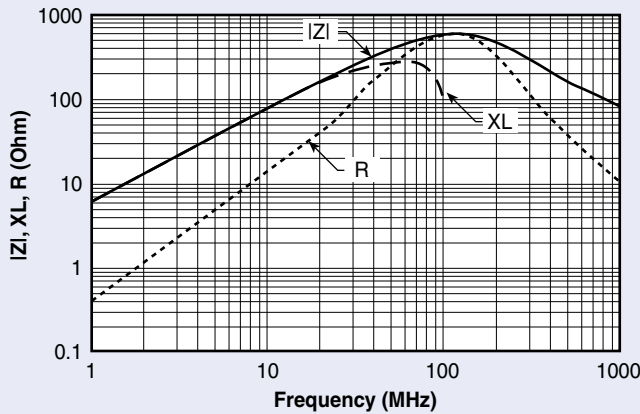
**FCB-0603-B151**



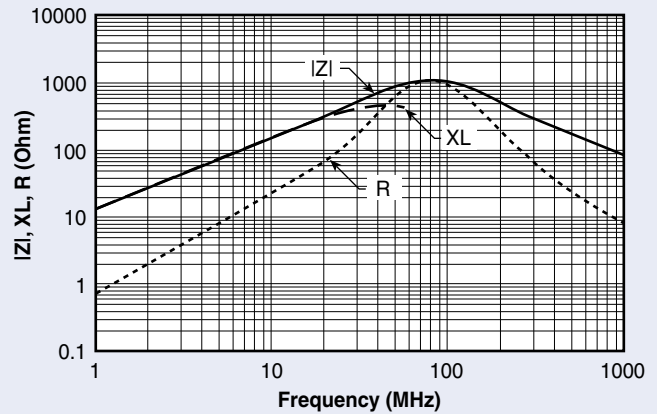
**FCB-0603-B301**



**FCB-0603-B601**



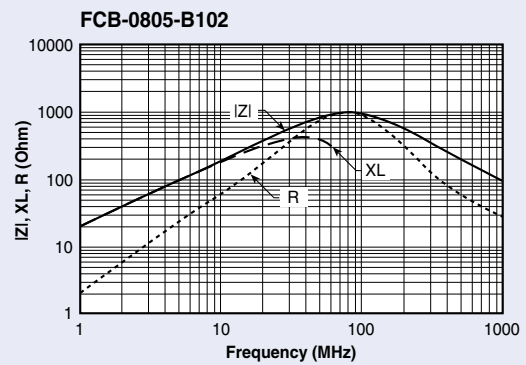
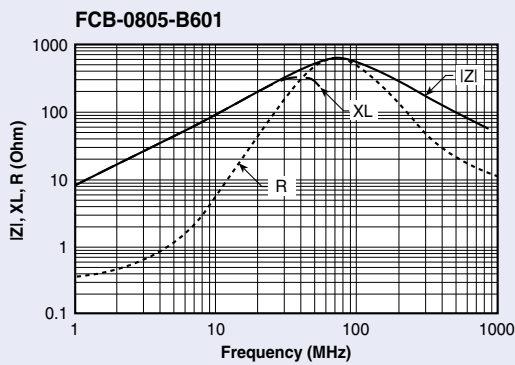
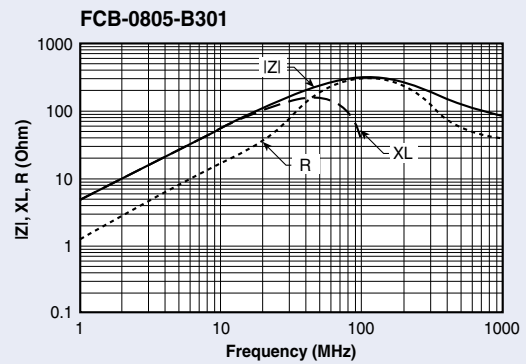
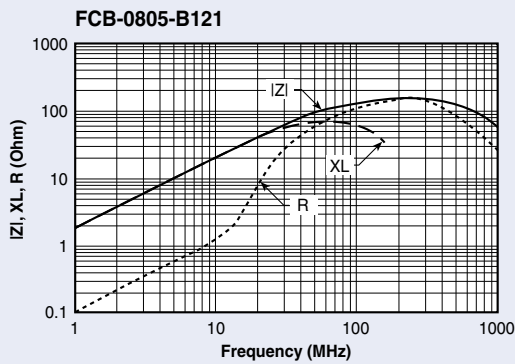
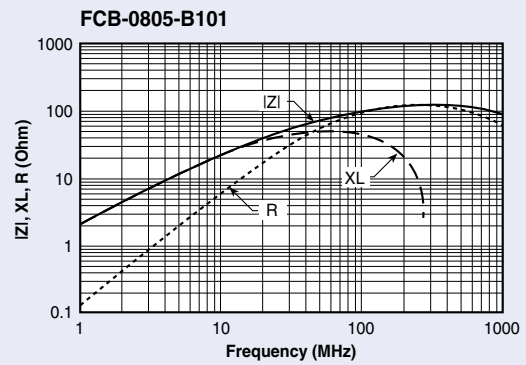
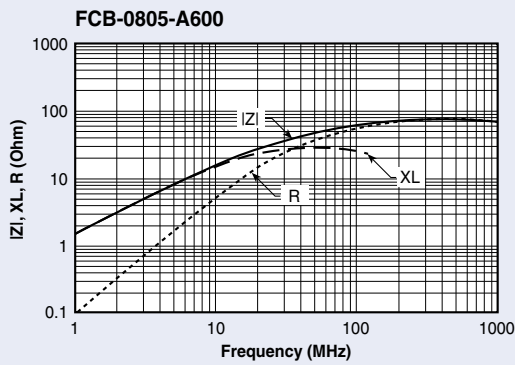
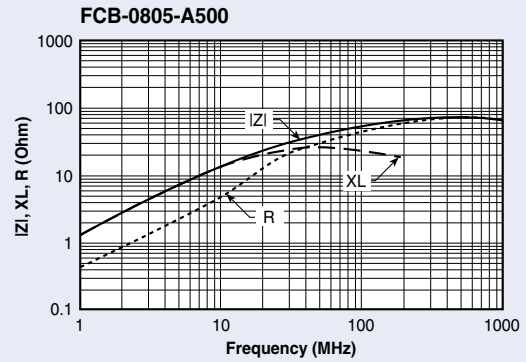
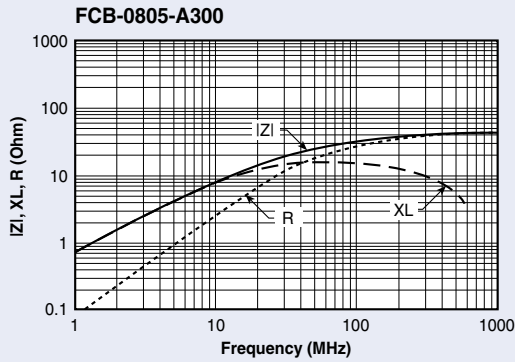
**FCB-0603-B102**



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## Typical Impedance Characteristics (Curves not listed are available upon request or at our website.)

### 0805 Size

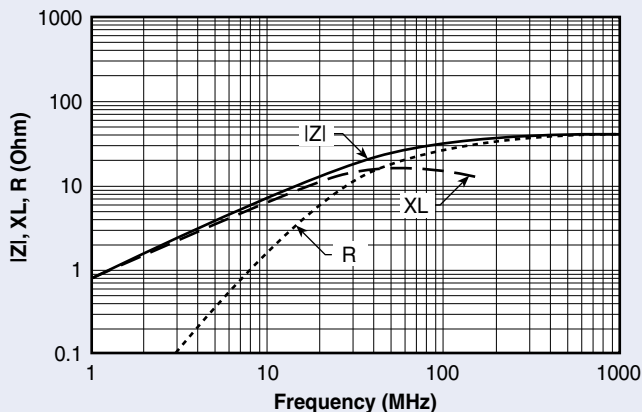


# Surface Mount EMI Filters Ferrite Chip Beads

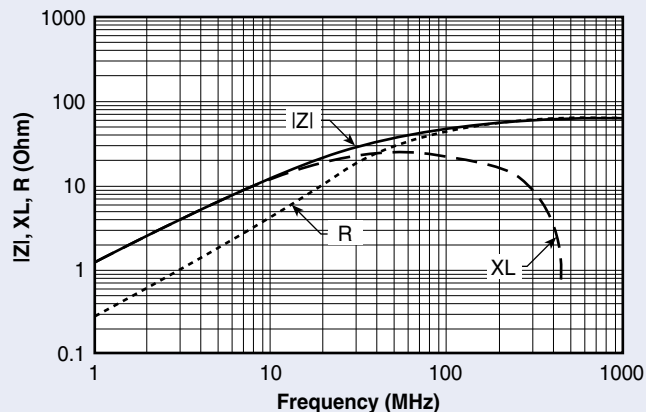
## Typical Impedance Characteristics (Curves not listed are available upon request or at our website.)

### 1206 Size

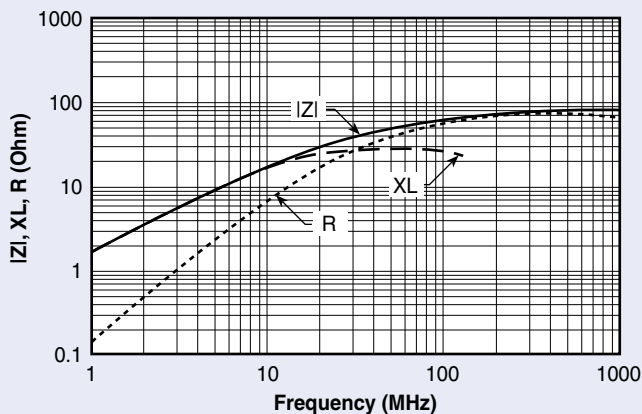
**FCB-1206-A300**



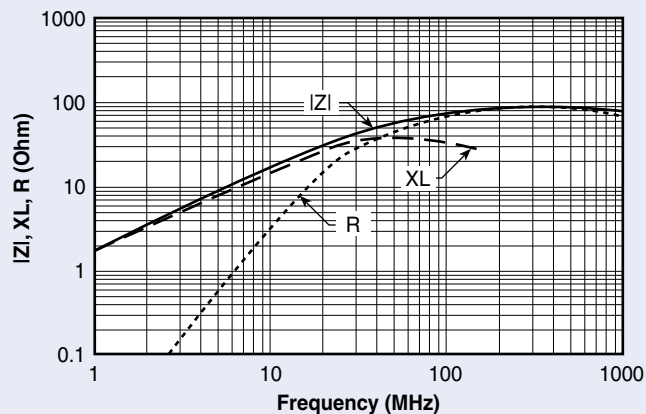
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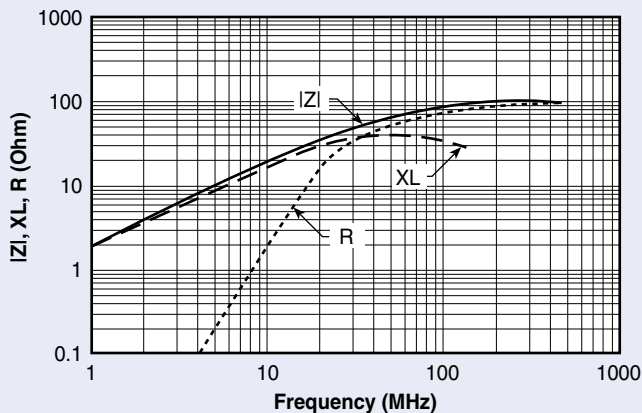
**FCB-1206-A600**



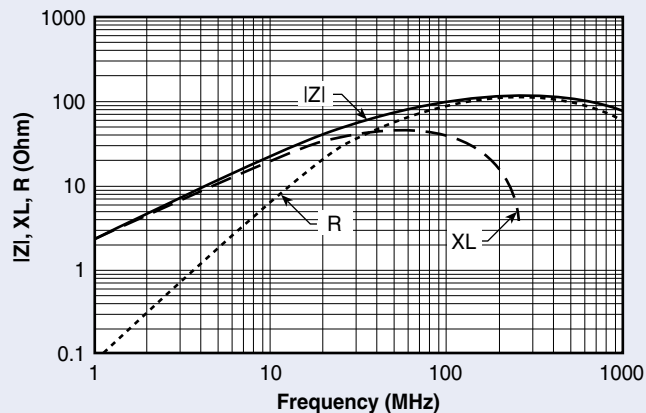
**FCB-1206-A700**



**FCB-1206-A800**



**FCB-1206-A900**



# Surface Mount EMI Filters Ferrite Chip Beads

## Typical Impedance Characteristics (Curves not listed are available upon request or at our website.)

