

On-Board Type (DC) EMI Suppression Filters (EMIFIL®)



Chip Ferrite Beads Part Numbering

Chip Ferrite Beads

(Part Number)

BL	M	18	AG	102	S	N	1	D
①	②	③	④	⑤	⑥	⑦	⑧	⑨

① Product ID

Product ID	
BL	Chip Ferrite Beads

② Type

Code	Type
A	Array Type
M	Monolithic Type

③ Dimensions (L×W)

Code	Dimensions (L×W)	EIA
02	0.4×0.2mm	01005
03	0.6×0.3mm	0201
15	1.0×0.5mm	0402
18	1.6×0.8mm	0603
2A	2.0×1.0mm	0804
21	2.0×1.25mm	0805
31	3.2×1.6mm	1206
41	4.5×1.6mm	1806

④ Characteristics/Applications

Code *1	Characteristics/Applications	Series
AG	for General Use	BLM02/03/15/18/21, BLA2A/31
TG		BLM18
BA	for High-speed Signal Lines	BLM15/18
BB		BLM03/15/18/21, BLA2A
BD		BLM15/18/21, BLA2A/31
PG	for Power Supplies	BLM03/15/18/21/31/41
SG	for Power Supplies (Low DC Resistance Type)	BLM18
RK	for Digital Interface	BLM18/21
HG	for GHz Band General Use	BLM15/18
EG	for GHz Band General Use (Low DC Resistance Type)	
HB	for GHz Band High-speed Signal Line	BLM15/18
HD		
HK	for GHz Band Digital Interface	BLM18
GG	for High-GHz Band General Use	

*1 Frequency characteristics vary with each code.

⑤ Packaging

Code	Packaging	Series
K	Embossed Taping (ø330mm Reel)	BLM31/41/21 *1
L	Embossed Taping (ø180mm Reel)	
B	Bulk	All Series
J	Paper Taping (ø330mm Reel)	BLM03/15/18 *3/21 *2, BLA2A/31
D	Paper Taping (ø180mm Reel)	BLM02/03/15/18/21 *2, BLA2A/31
C	Bulk Case	BLM15/18

*1 BLM21BD222SN1/BLM21BD272SN1 only. *2 Except BLM21BD222SN1/BLM21BD272SN1 *3 Except BLM18T

⑥ Impedance

Expressed by three figures. The unit is in ohm (Ω) at 100MHz. The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures.

⑦ Performance

Expressed by a letter.

Ex.)

Code	Performance
S/T	Sn Plating
A	Au Plating

⑧ Category

Code	Category
N	Standard Type

⑨ Number of Circuits

Code	Number of Circuits
1	1 Circuit
4	4 Circuits

On-Board Type (DC) EMI Suppression Filters (EMIFIL®)



Chip Ferrite Bead BLM Series

1

Essential for Noise Suppression in High Speed Signal Lines and DC Power Lines

The chip ferrite bead BLM series is comprised of ferrite beads in the shape of a chip. This ferrite bead generates a high impedance which at high frequencies mainly consists of a resistance element. BLM series is effective in circuits without stable ground lines because BLM series does not need a connection to ground.

Chip sizes of 0.6x0.3, 1.0x0.5, 1.6x0.8, 2.0x1.25, 3.2x1.6 and 4.5x1.6mm are cataloged. (BLA series of array type chip ferrite beads is also cataloged.)

The nickel barrier structure of the external electrodes provides excellent solder heat resistance.

■Features

BLM series is comprised of R series (for digital interface), A series (for standard), B series (for high speed signal), P series (for large current), and H/E/G series (for GHz range noise suppression).

1. BLM□□R series – For Digital Interface

BLM-R series can be used in Digital Interface. Resistance of BLM-R series especially grows in the lower frequency range. Therefore BLM-R series is less effective for digital signal waveform at low frequency range and can suppress the ringing.

2. BLM□□A/T series – For General Use

BLM-A series generates an impedance from the relatively low frequencies. Therefore BLM-A series is effective in noise suppression in the wide frequency range (30MHz – several hundred MHz).

3. BLM□□B series – For High Speed Signal

BLM-B series can minimize attenuation of the signal waveform due to its sharp impedance characteristics. Various impedances are available to match signal frequency.

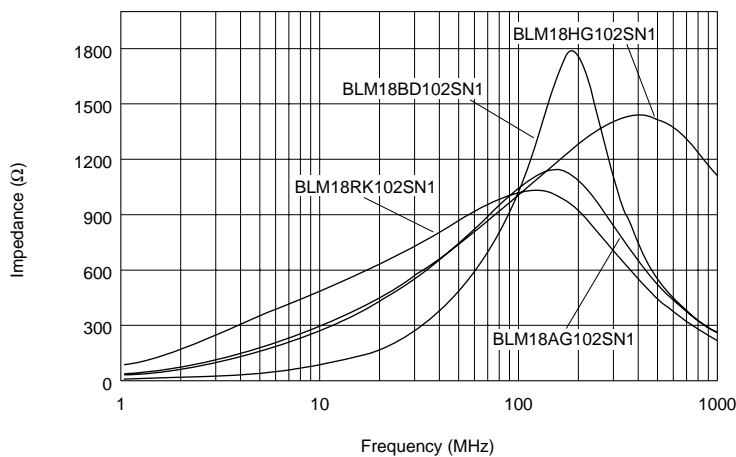
4. BLM□□P/S series – For Large Current

BLM-P/S series can be used in high current circuits due to its low DC resistance. It can match power lines to a maximum of 6A DC.

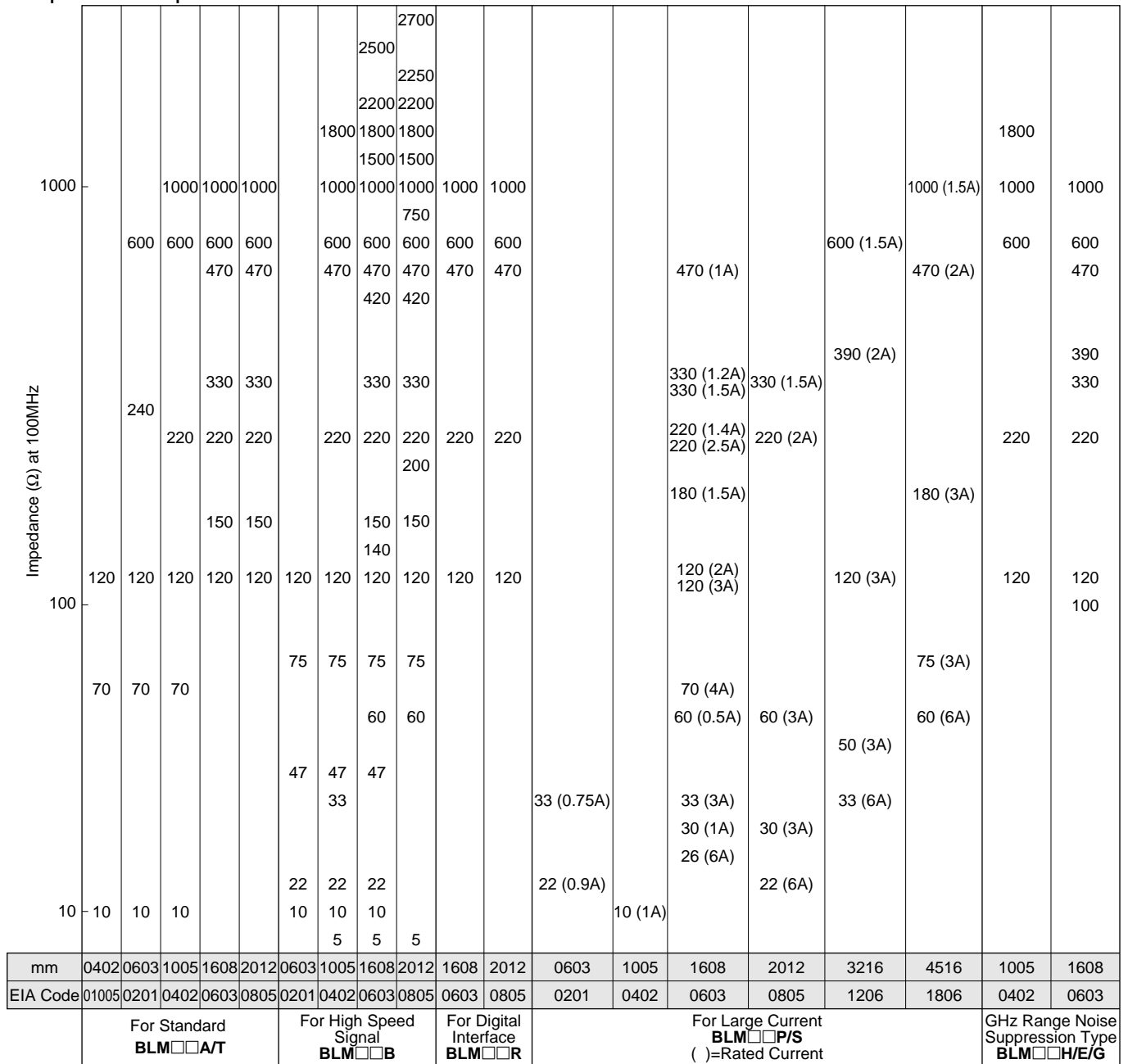
5. BLM□□H/E/G series – For GHz Range Noise Suppression

BLM□□H/E/G series has horizontal wire wound structure that minimizes stray capacitance and increases the effective frequency range.

Impedance Characteristics



■ Impedance Map




1

■BLM Series

Size (EIA Code)	Type	Part Number	Impedance (Ω)		Rated Current (mA)	
			at 100MHz	at 1GHz		
01005	For Standard	BLM02AG100SN1	10 (Typ.)	-	500	
		BLM02AG700SN1	70±25%	-	250	
		BLM02AG121SN1	120±25%	-	200	
0201	For Standard	BLM03AG100SN1	10 (Typ.)	-	500	
		BLM03AG700SN1	70 (Typ.)	-	200	
		BLM03AG121SN1	120±25%	-	200	
		BLM03AG241SN1	240±25%	-	200	
		BLM03AG601SN1	600±25%	-	100	
	For High Speed Signal	BLM03BB100SN1	10±25%	-	300	
		BLM03BB220SN1	22±25%	-	200	
		BLM03BB470SN1	47±25%	-		
		BLM03BB750SN1	75±25%	-	100	
	For Large Current	BLM03PG220SN1	22±25%	-	900	
		BLM03PG330SN1	33±25%	-	750	
0402	For Standard	BLM15AG100SN1	10 (Typ.)	-	1000	
		BLM15AG700SN1	70 (Typ.)	-	500	
		BLM15AG121SN1	120±25%	-		
		BLM15AG221SN1	220±25%	-	300	
		BLM15AG601SN1	600±25%	-		
		BLM15AG102SN1	1000±25%	-	200	
		BLM15AG601AN1	600±25%	-	300	
		BLM15AG102AN1	1000±25%	-	200	
	For High Speed Signal (Sharp impedance characteristics)	BLM15BA050SN1	5±25%	-	300	
		BLM15BB050SN1		-	500	
		BLM15BA100SN1	10±25%	-	300	
		BLM15BB100SN1		-		
		BLM15BA220SN1	22±25%	-	300	
		BLM15BB220SN1		-		
		BLM15BA330SN1	33±25%	-	200	
		BLM15BA470SN1	47±25%	-		
		BLM15BB470SN1		-	300	
		BLM15BA750SN1	75±25%	-	200	
		BLM15BB750SN1		-	300	
		BLM15BB121SN1	120±25%	-		200
		BLM15BB221SN1	220±25%	-		
		BLM15BD750SN1	75±25%	-	300	
		BLM15BD121SN1	120±25%	-		
		BLM15BD221SN1	220±25%	-	200	
	BLM15BD471SN1	470±25%	-			
	BLM15BD601SN1	600±25%	-	100		
	BLM15BD102SN1	1000±25%	-			
	BLM15BD182SN1	1800±25%	-	100		
	For Large Current	BLM15PG100SN1	10 (Typ.)	-	1000	
	GHz Range	For Standard	BLM15HG601SN1	600±25%	1000±40%	300
			BLM15HG102SN1	1000±25%	1400±40%	250
		For High Speed Signal	BLM15HB121SN1	120±25%	500±40%	300
			BLM15HB221SN1	220±25%	900±40%	250
			BLM15HD601SN1	600±25%	1400±40%	300
BLM15HD102SN1			1000±25%	2000±40%	250	
BLM15HD182SN1		1800±25%	2700±40%	200		
For Standard (Low DC Resistance Type)		BLM15EG121SN1	120±25%	145 (Typ.)	1500*	
	BLM15EG221SN1	220±25%	270 (Typ.)	700*		


* Please see p.68 "Derating of Rated Current".

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Size (EIA Code)	Type	Part Number	Impedance (Ω)		Rated Current (mA)
			at 100MHz	at 1GHz	
0603	For Standard	BLM18AG121SN1	120±25%	-	200
		BLM18AG151SN1	150±25%	-	
		BLM18AG221SN1	220±25%	-	
		BLM18AG331SN1	330±25%	-	
		BLM18AG471SN1	470±25%	-	
		BLM18AG601SN1	600±25%	-	100
		BLM18AG102SN1	1000±25%	-	
		BLM18TG121TN1	120±25%	-	200
		BLM18TG221TN1	220±25%	-	
		BLM18TG601TN1	600±25%	-	
		BLM18TG102TN1	1000±25%	-	100
	For High Speed Signal (Sharp impedance characteristics)	BLM18BA050SN1	5±25%	-	500
		BLM18BB050SN1		-	700
		BLM18BA100SN1	10±25%	-	500
		BLM18BB100SN1		-	
		BLM18BA220SN1	22±25%	-	300
		BLM18BB220SN1		-	
		BLM18BA470SN1	47±25%	-	500
		BLM18BB470SN1		-	
		BLM18BB600SN1	60±25%	-	200
		BLM18BA750SN1	75±25%	-	300
		BLM18BB750SN1		-	200
		BLM18BA121SN1	120±25%	-	200
		BLM18BB121SN1		-	
		BLM18BD121SN1		-	
		BLM18BB141SN1	140±25%	-	200
		BLM18BB151SN1	150±25%	-	
		BLM18BD151SN1		-	
		BLM18BB221SN1	220±25%	-	
		BLM18BD221SN1		-	
		BLM18BB331SN1	330±25%	-	50
		BLM18BD331SN1		-	
		BLM18BD421SN1	420±25%	-	200
		BLM18BB471SN1	470±25%	-	
		BLM18BD471SN1		-	
		BLM18BD601SN1	600±25%	-	200
		BLM18BD102SN1	1000±25%	-	100
		BLM18BD152SN1	1500±25%	-	50
		BLM18BD182SN1	1800±25%	-	
	BLM18BD222SN1	2200±25%	-		
	BLM18BD252SN1	2500±25%	-		
	For Digital Interface	BLM18RK121SN1	120±25%	-	200
BLM18RK221SN1		220±25%	-		
BLM18RK471SN1		470±25%	-		
BLM18RK601SN1		600±25%	-		
BLM18RK102SN1		1000±25%	-		
For Large Current	For Standard	BLM18PG300SN1	30 (Typ.)	-	1000
		BLM18PG330SN1	33±25%	-	3000*
		BLM18PG600SN1	60 (Typ.)	-	500
		BLM18PG121SN1	120±25%	-	2000*
		BLM18PG181SN1	180±25%	-	1500*
		BLM18PG221SN1	220±25%	-	1400*
		BLM18PG331SN1	330±25%	-	1200*
BLM18PG471SN1	471±25%	-	1000		

* Please see p.63 "Derating of Rated Current".

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Size (inches)	Type		Part Number	Impedance (Ω)		Rated Current (mA)
				at 100MHz	at 1GHz	
0603	For Large Current	For Standard (Low DC Resistance Type)	BLM18SG260TN1	26±25%	-	6000*
			BLM18SG700TN1	70±25%	-	4000*
			BLM18SG121TN1	120±25%	-	3000*
			BLM18SG221TN1	220±25%	-	2500*
			BLM18SG331TN1	330±25%	-	1500*
	GHz Range	For Standard	BLM18HG471SN1	470±25%	600 (Typ.)	200
			BLM18HG601SN1	600±25%	700 (Typ.)	
			BLM18HG102SN1	1000±25%	1000 (Typ.)	100
		For High Speed Signal	BLM18HB121SN1	120±25%	500±40%	200
			BLM18HB221SN1	220±25%	1100±40%	100
			BLM18HB331SN1	330±25%	1600±40%	50
			BLM18HD471SN1	470±25%	1000 (Typ.)	100
			BLM18HD601SN1	600±25%	1200 (Typ.)	
			BLM18HD102SN1	1000±25%	1700 (Typ.)	50
			For Digital Interface	BLM18HK331SN1	330±25%	400±40%
		BLM18HK471SN1		470±25%	600±40%	
		BLM18HK601SN1		600±25%	700±40%	100
		BLM18HK102SN1		1000±25%	1200±40%	50
		For Standard (Low DC Resistance Type)	BLM18EG101TN1	100±25%	140 (Typ.)	2000*
			BLM18EG121SN1	120±25%	145 (Typ.)	2000*
			BLM18EG221TN1	220±25%	300 (Typ.)	1000
			BLM18EG221SN1		260 (Typ.)	2000*
			BLM18EG331TN1	330±25%	450 (Typ.)	500
			BLM18EG391TN1	390±25%	520 (Typ.)	500
			BLM18EG471SN1	470±25%	550 (Typ.)	500
			BLM18EG601SN1	600±25%	700 (Typ.)	500
			BLM18GG471SN1	470±25%	1800±30%	200
			0805	For Standard	BLM21AG121SN1	120±25%
BLM21AG151SN1	150±25%	-				
BLM21AG221SN1	220±25%	-				
BLM21AG331SN1	330±25%	-				
BLM21AG471SN1	470±25%	-				
BLM21AG601SN1	600±25%	-				
BLM21AG102SN1	1000±25%	-				
For High Speed Signal (Sharp impedance characteristics)	BLM21BB050SN1	5±25%		-	500	
	BLM21BB600SN1	60±25%		-	200	
	BLM21BB750SN1	75±25%		-		
	BLM21BB121SN1	120±25%		-		
	BLM21BD121SN1			-		
	BLM21BB151SN1	150±25%		-		
	BLM21BD151SN1			-		
	BLM21BB201SN1	200±25%		-		
	BLM21BB221SN1	220±25%		-		
	BLM21BD221SN1			-		
	BLM21BB331SN1	330±25%		-		
	BLM21BD331SN1			-		
	BLM21BD421SN1	420±25%		-		
	BLM21BB471SN1	470±25%		-		
	BLM21BD471SN1			-		
	BLM21BD601SN1	600±25%		-		
	BLM21BD751SN1	750±25%		-		
	BLM21BD102SN1	1000±25%		-		
	BLM21BD152SN1	1500±25%		-		
	BLM21BD182SN1	1800±25%		-		
	BLM21BD222SN1	2250 (Typ.)		-		
	BLM21BD222TN1	2200±25%		-		
	BLM21BD272SN1	2700±25%		-		

* Please see p.63, p.74 "Derating of Rated Current".

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Size (inches)	Type	Part Number	Impedance (Ω)		Rated Current (mA)
			at 100MHz	at 1GHz	
0805	For Digital Interface	BLM21RK121SN1	120±25%	-	200
		BLM21RK221SN1	220±25%	-	
		BLM21RK471SN1	470±25%	-	
		BLM21RK601SN1	600±25%	-	
		BLM21RK102SN1	1000±25%	-	
	For Large Current	BLM21PG220SN1	22±25%	-	6000*
		BLM21PG300SN1	30 (Typ.)	-	3000*
		BLM21PG600SN1	60±25%	-	2000*
		BLM21PG221SN1	220±25%	-	2000*
		BLM21PG331SN1	330±25%	-	1500*
1206	For Large Current	BLM31PG330SN1	33±25%	-	6000*
		BLM31PG500SN1	50 (Typ.)	-	3000*
		BLM31PG121SN1	120±25%	-	2000*
		BLM31PG391SN1	390±25%	-	1500*
		BLM31PG601SN1	600±25%	-	1500*
1806	For Large Current	BLM41PG600SN1	60 (Typ.)	-	6000*
		BLM41PG750SN1	75 (Typ.)	-	3000*
		BLM41PG181SN1	180±25%	-	3000*
		BLM41PG471SN1	470±25%	-	2000*
		BLM41PG102SN1	1000±25%	-	1500*

* Please see p.63 "Derating of Rated Current".

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On-Board Type (DC) EMI Suppression Filters (EMIFIL®)



Chip Ferrite Beads BLM02/03/15/18/21/31/41 Series

1

■ Features (BLM_A Series)

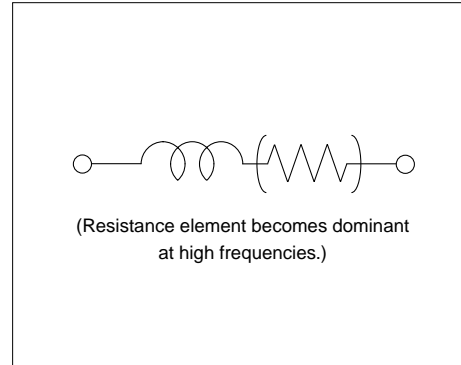
The chip ferrite beads BLM series is designed to function nearly as a resistor at noise frequencies, which greatly reduces the possibility of resonance and leaves signal wave forms undistorted.

BLM series is effective in circuits without stable ground lines because BLM series does not need a connection to ground.

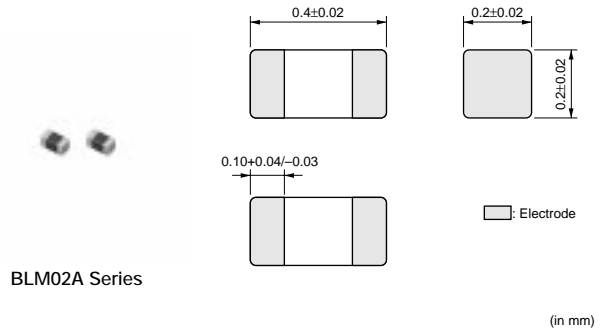
The nickel barrier structure of the external electrodes provides excellent solder heat resistance. BLM_A series generates an impedance from the relatively low frequencies. Therefore BLM_A series is effective in noise suppression in a wide frequency range (30MHz to several hundred MHz).

The small size of BLM02A series (0.4x0.2mm) is suitable for noise suppression in small equipment such as PA modules for cellular phones.

■ Equivalent Circuit

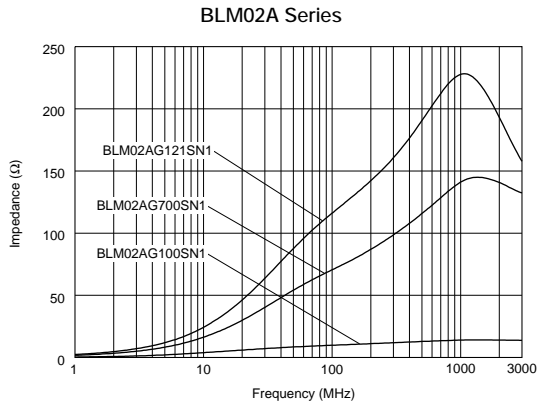


BLM02A Series (01005 Size)

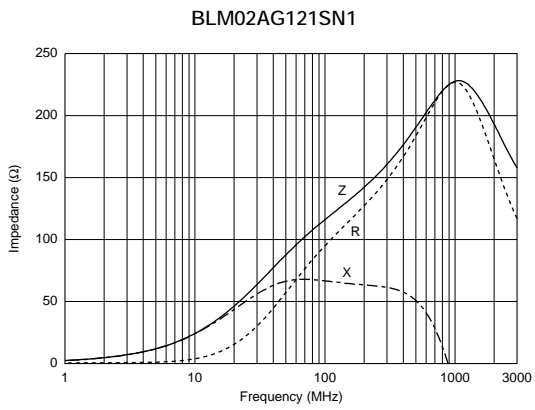
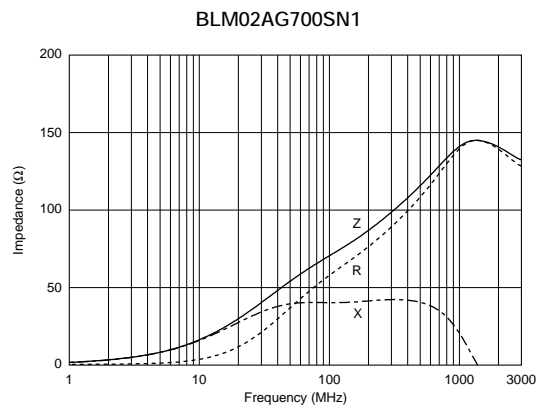
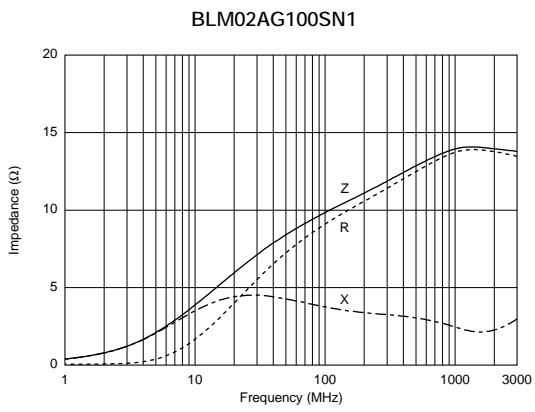


Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM02AG100SN1	10 (Typ.)	500	0.1	-55 to +125
BLM02AG700SN1	70 ±25%	250	0.5	-55 to +125
BLM02AG121SN1	120 ±25%	200	0.8	-55 to +125

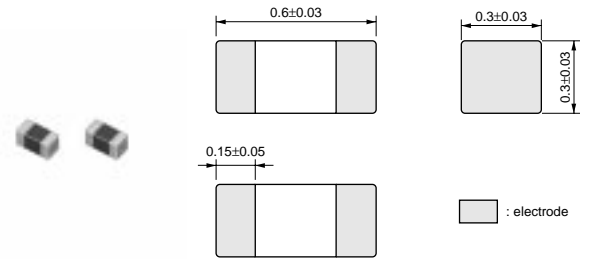
■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics



BLM03A Series (0201 Size)

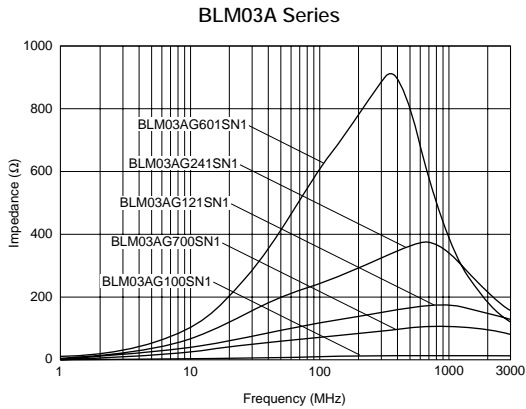


BLM03A Series

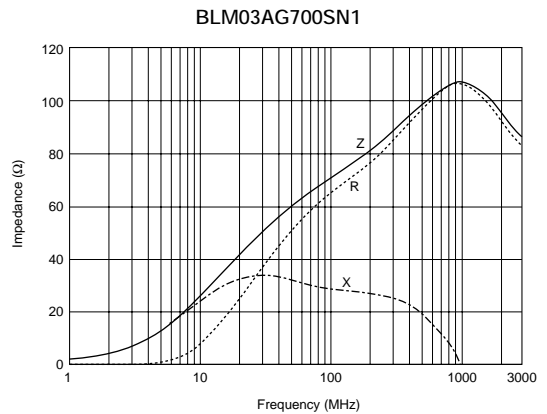
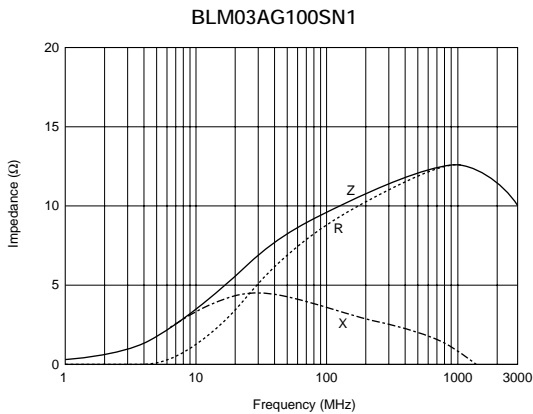
(in mm)

Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM03AG100SN1	10 (Typ.)	500	0.1	-55 to +125
BLM03AG700SN1	70 (Typ.)	200	0.4	-55 to +125
BLM03AG121SN1	120 ±25%	200	0.5	-55 to +125
BLM03AG241SN1	240 ±25%	200	0.8	-55 to +125
BLM03AG601SN1	600 ±25%	100	1.5	-55 to +125

■ Impedance - Frequency (Typical)



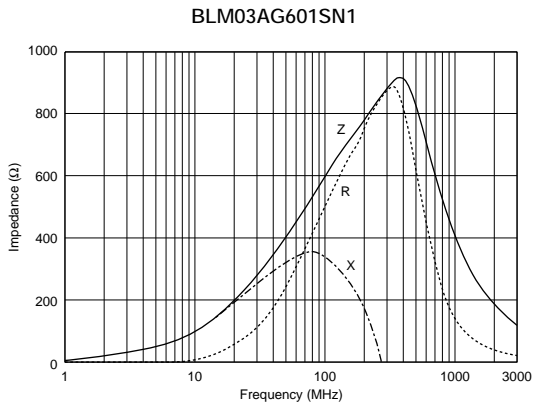
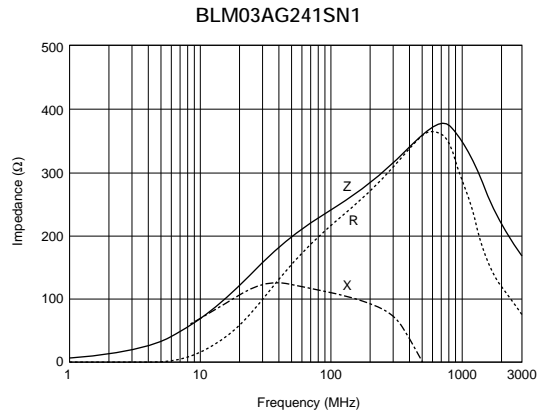
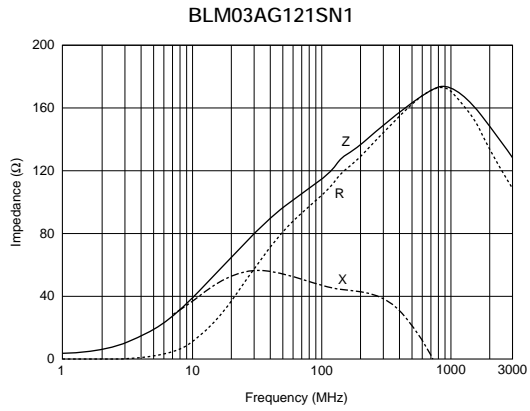
■ Impedance - Frequency Characteristics



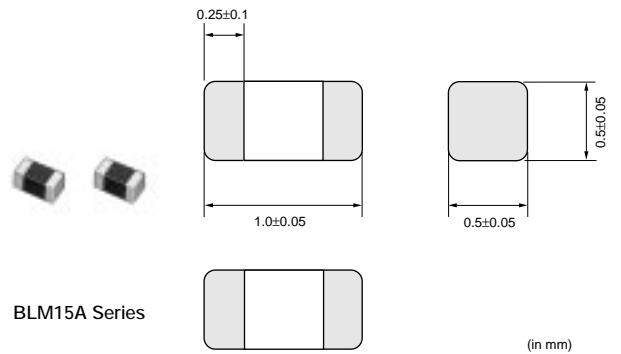
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■ Impedance - Frequency Characteristics



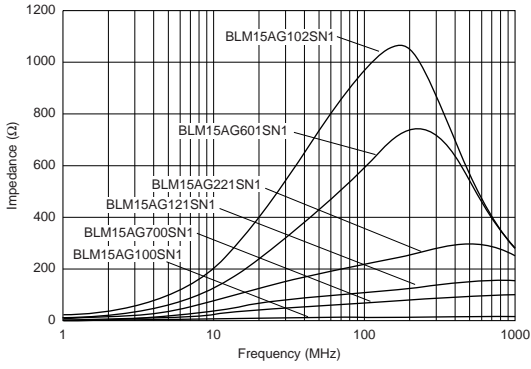
BLM15A Series (0402 Size)



Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15AG100SN1	10 (Typ.)	1000	0.05	-55 to +125
BLM15AG700SN1	70 (Typ.)	500	0.15	-55 to +125
BLM15AG121SN1	120 ±25%	500	0.25	-55 to +125
BLM15AG221SN1	220 ±25%	300	0.35	-55 to +125
BLM15AG601SN1	600 ±25%	300	0.6	-55 to +125
BLM15AG102SN1	1000 ±25%	200	1.0	-55 to +125

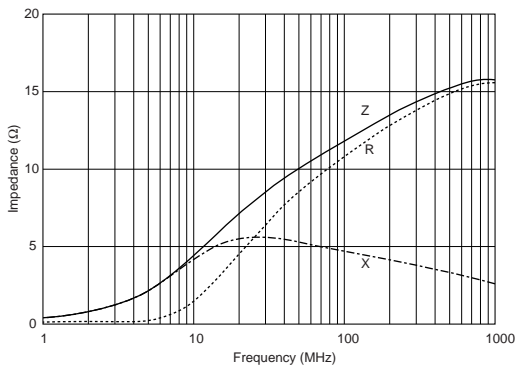
■ Impedance - Frequency (Typical)

BLM15A Series

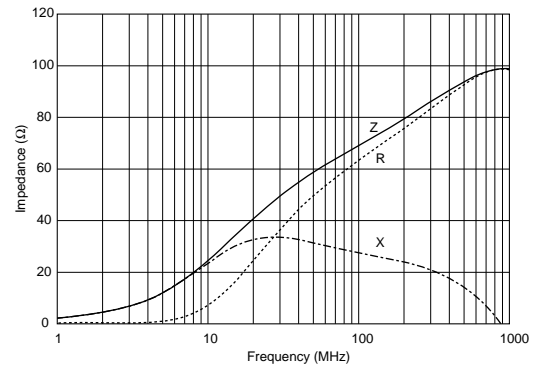


■ Impedance - Frequency Characteristics

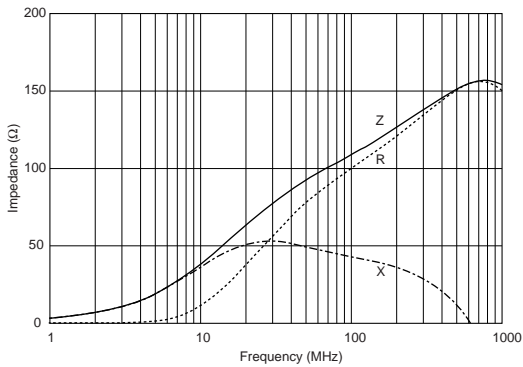
BLM15AG100SN1



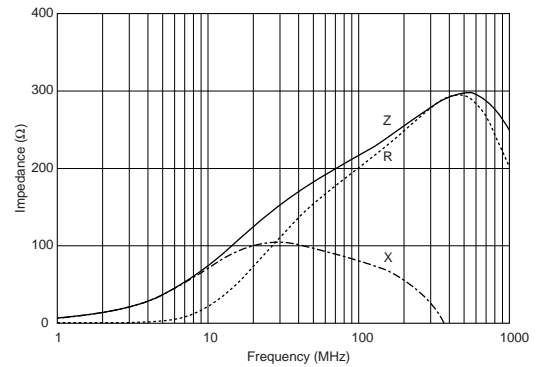
BLM15AG700SN1



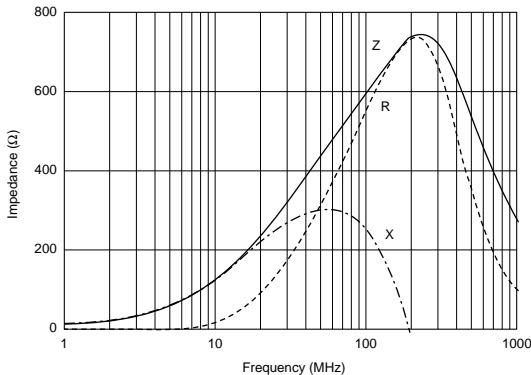
BLM15AG121SN1



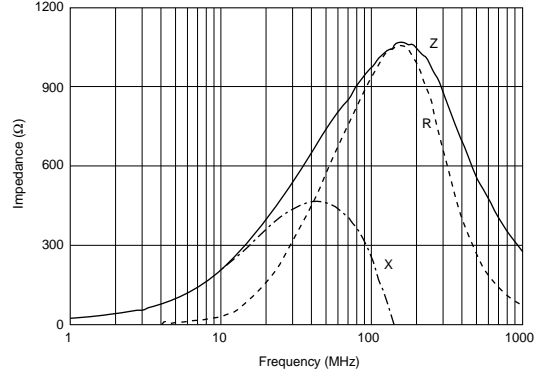
BLM15AG221SN1



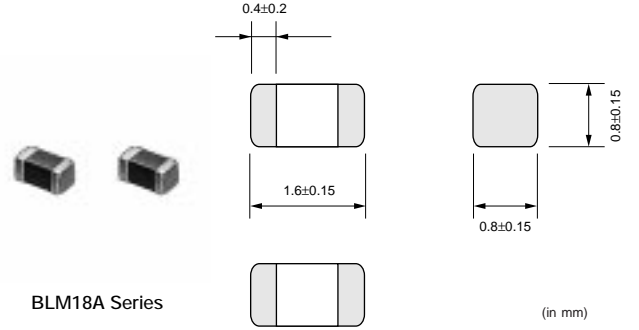
BLM15AG601SN1



BLM15AG102SN1



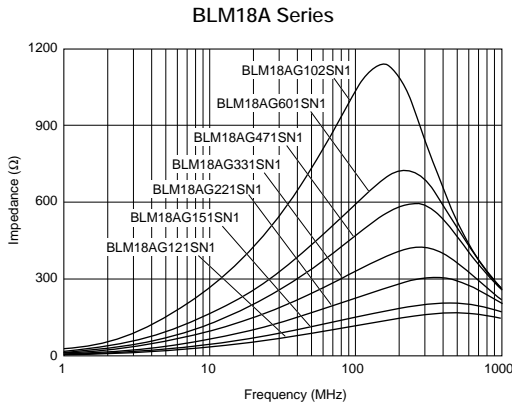
BLM18A Series (0603 Size)



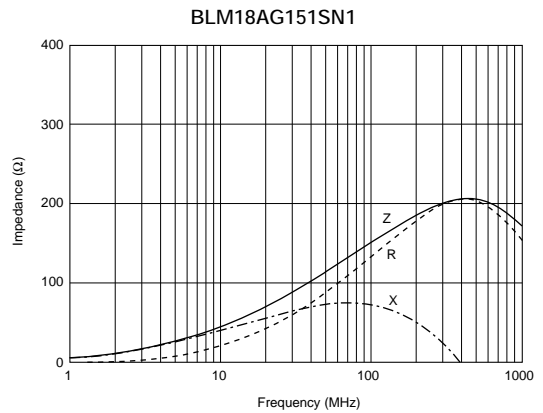
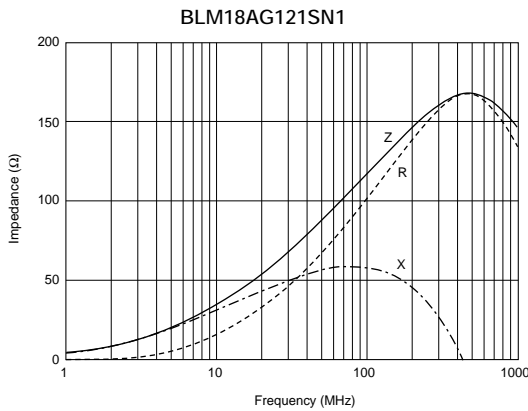
1

Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18AG121SN1	120 ±25%	200	0.20	-55 to +125
BLM18AG151SN1	150 ±25%	200	0.25	-55 to +125
BLM18AG221SN1	220 ±25%	200	0.30	-55 to +125
BLM18AG331SN1	330 ±25%	200	0.45	-55 to +125
BLM18AG471SN1	470 ±25%	200	0.50	-55 to +125
BLM18AG601SN1	600 ±25%	200	0.50	-55 to +125
BLM18AG102SN1	1000 ±25%	100	0.70	-55 to +125

■ Impedance - Frequency (Typical)



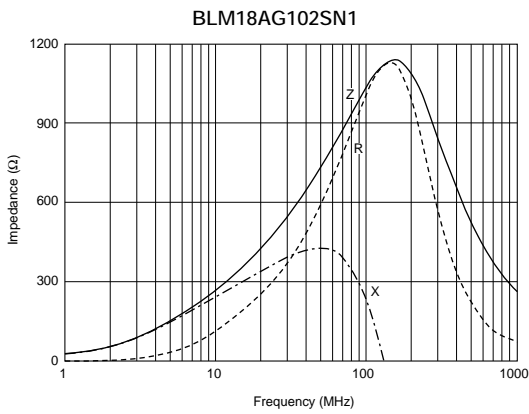
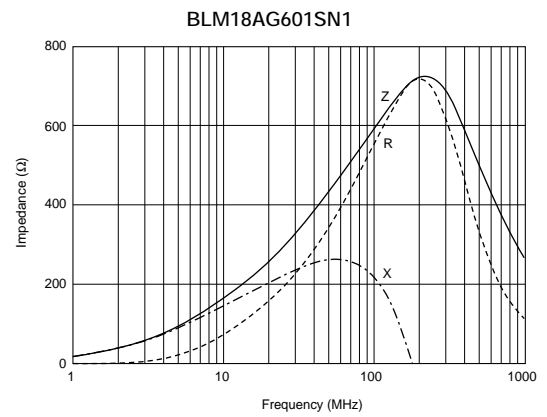
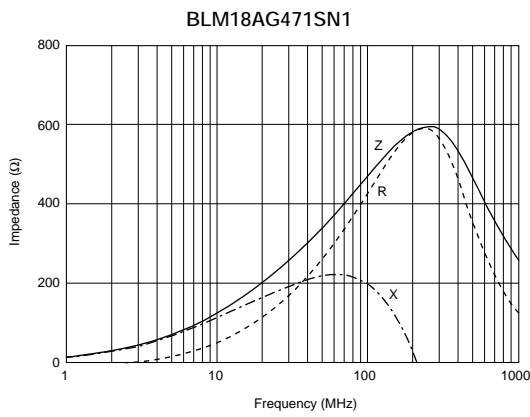
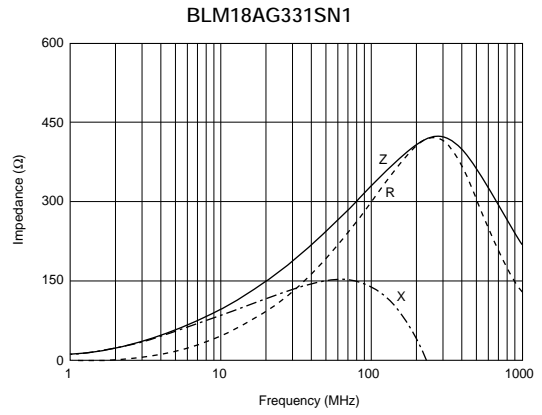
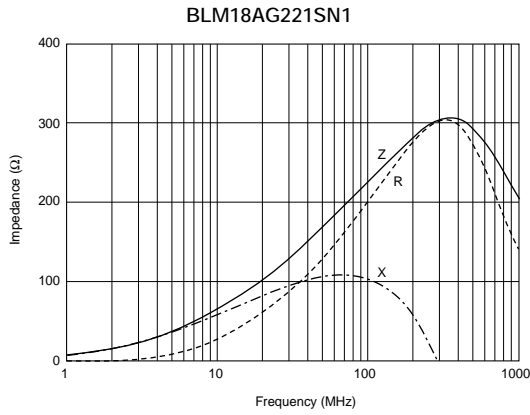
■ Impedance - Frequency Characteristics



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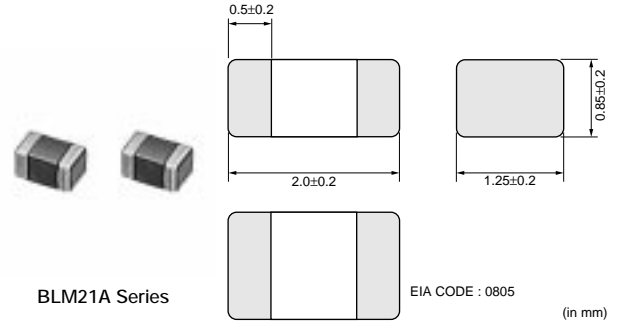
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Impedance - Frequency Characteristics



1

BLM21A Series (0805 Size)

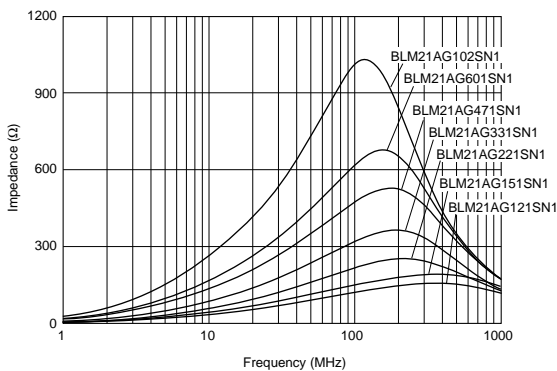


1

Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM21AG121SN1	120 ±25%	200	0.15	-55 to +125
BLM21AG151SN1	150 ±25%	200	0.15	-55 to +125
BLM21AG221SN1	220 ±25%	200	0.20	-55 to +125
BLM21AG331SN1	330 ±25%	200	0.25	-55 to +125
BLM21AG471SN1	470 ±25%	200	0.25	-55 to +125
BLM21AG601SN1	600 ±25%	200	0.30	-55 to +125
BLM21AG102SN1	1000 ±25%	200	0.45	-55 to +125

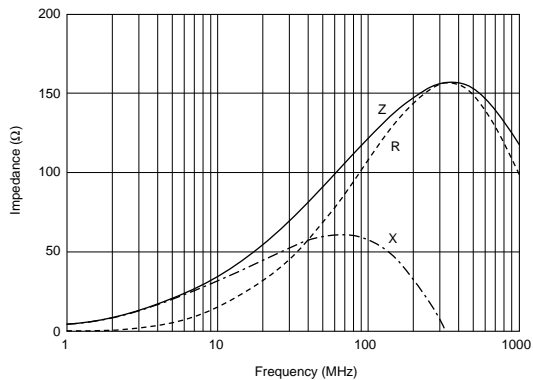
■ Impedance - Frequency (Typical)

BLM21A Series

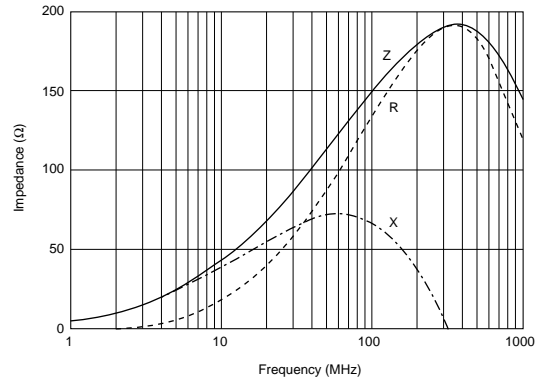


■ Impedance - Frequency Characteristics

BLM21AG121SN1



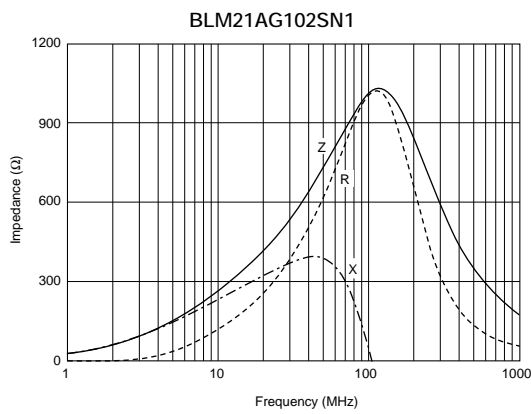
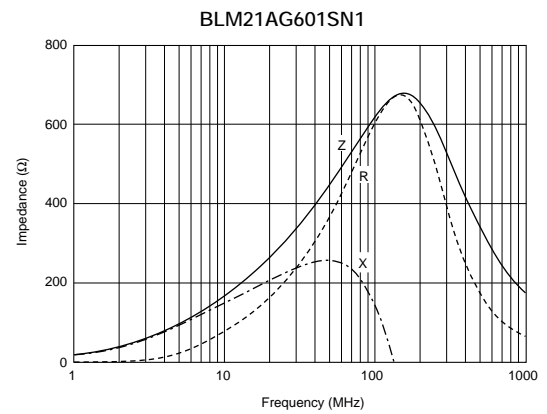
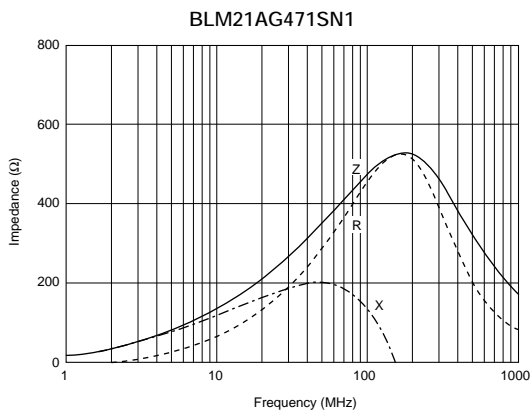
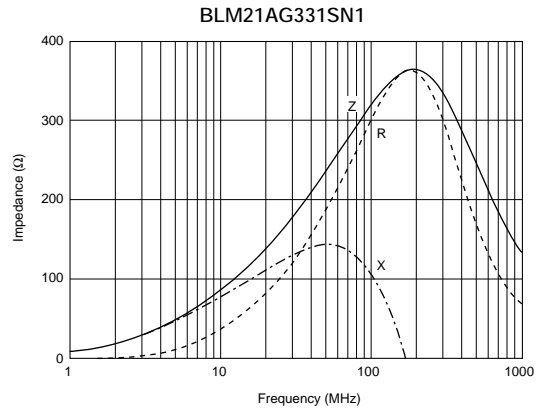
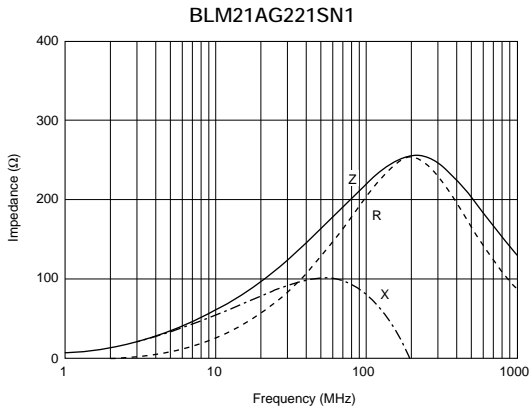
BLM21AG151SN1



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Impedance - Frequency Characteristics



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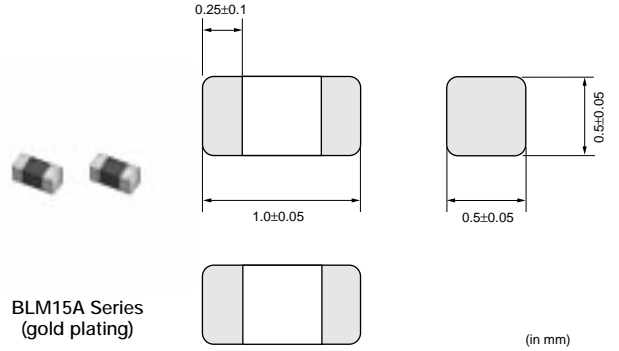
BLM15A Series Gold Plating (0402 Size)

■ Features

1. Au plating for wire bonding mounting
2. BLM_A series generates an impedance from the relatively low frequencies. Therefore BLM_A series is effective in noise suppression in a wide frequency range (30MHz to several hundred MHz).

■ Applications

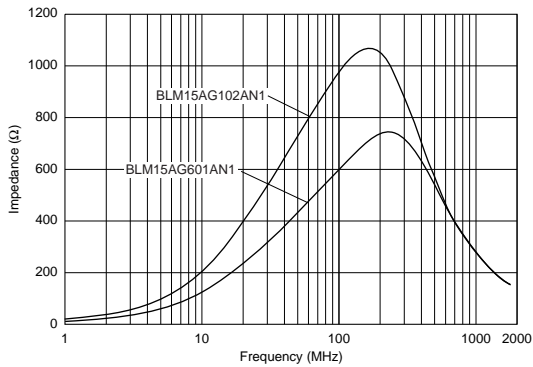
1. Optical transceiver modules
2. Optical pickup modules



Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15AG601AN1	600 ±25%	300	0.6	-55 to +125
BLM15AG102AN1	1000 ±25%	200	1.0	-55 to +125

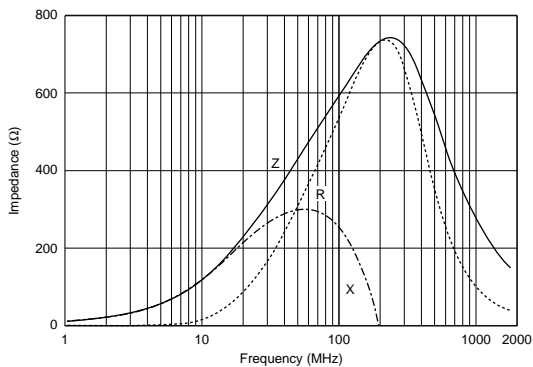
■ Impedance - Frequency (Typical)

BLM15A Series (gold plating)

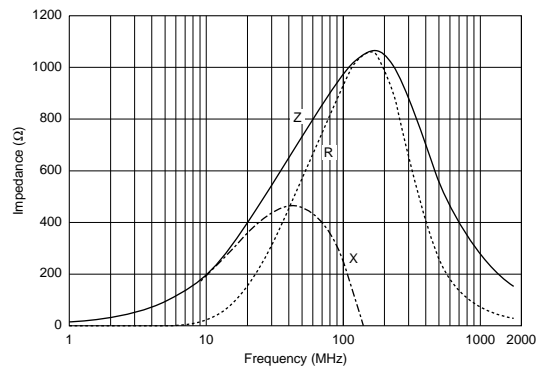


■ Impedance - Frequency Characteristics

BLM15AG601AN1



BLM15AG102AN1



BLM18T Series (0603 Size)

■ Features

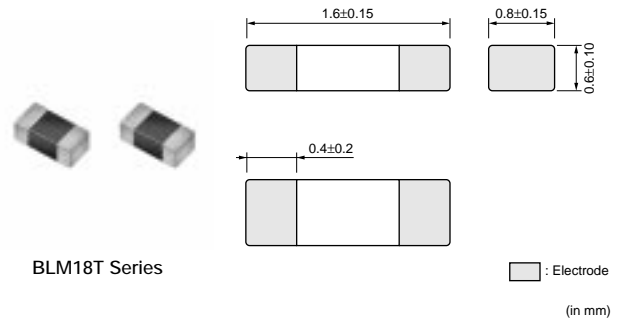
The chip ferrite beads BLM series is designed to function nearly as a resistor at noise frequencies, which greatly reduces the possibility of resonance and leaves signal wave forms undistorted.

BLM series is effective in circuits without stable ground lines because BLM series does not need a connection to ground.

The nickel barrier structure of the external electrodes provides excellent solder heat resistance.

BLM_T series generates an impedance from the relatively low frequencies. Therefore BLM_T series is effective in noise suppression in a wide frequency range (10MHz to several hundred MHz).

BLM_T series contributes further to miniaturizing portable equipment.

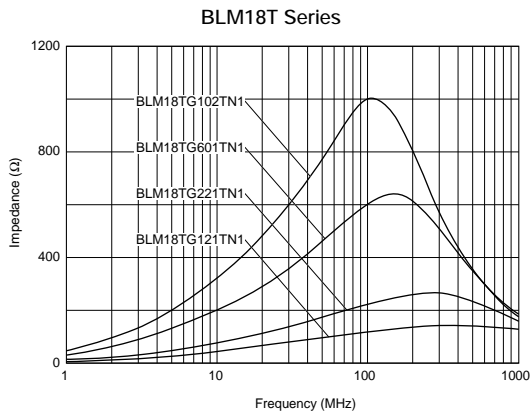


BLM18T Series

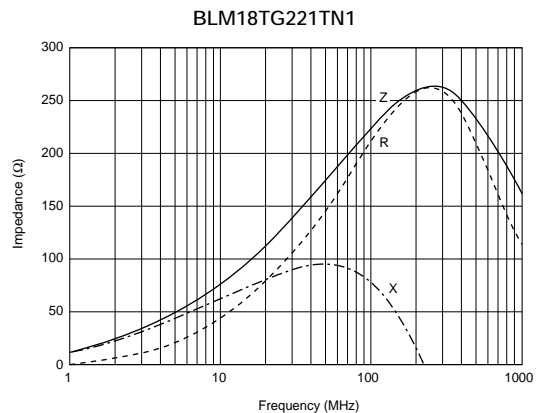
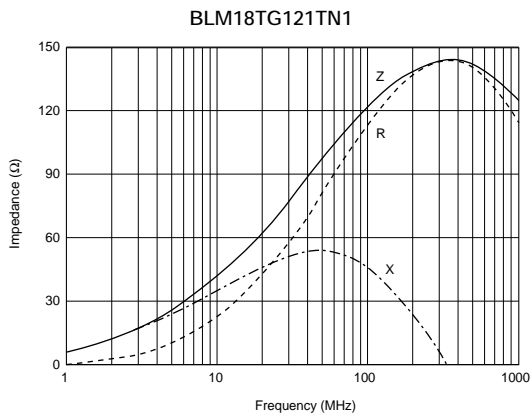
□ : Electrode
(in mm)

Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18TG121TN1	120 ±25%	200	0.25	-55 to +125
BLM18TG221TN1	220 ±25%	200	0.30	-55 to +125
BLM18TG601TN1	600 ±25%	200	0.45	-55 to +125
BLM18TG102TN1	1000 ±25%	100	0.60	-55 to +125

■ Impedance - Frequency (Typical)



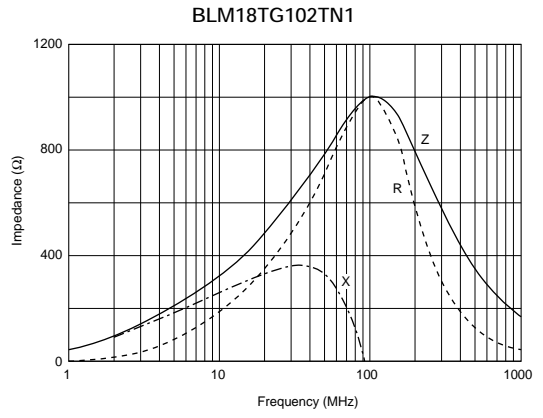
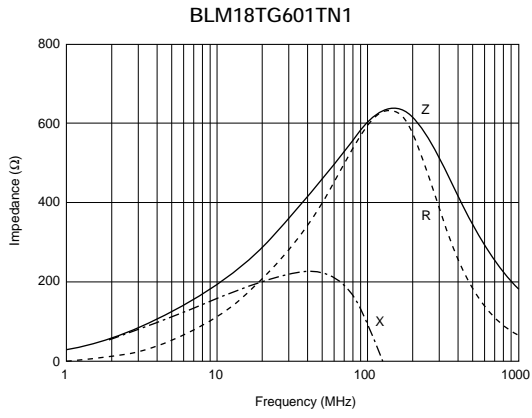
■ Impedance - Frequency Characteristics



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■ Impedance - Frequency Characteristics



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■ Features (BLM_B Series)

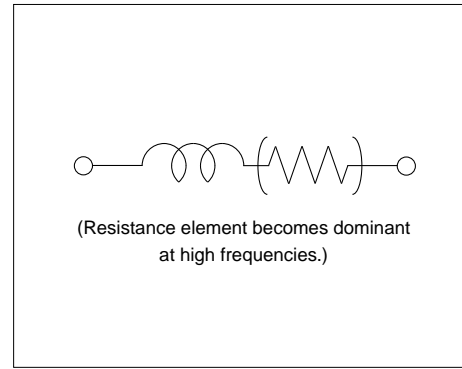
The chip ferrite beads BLM series is designed to function nearly as a resistor at noise frequencies, which greatly reduces the possibility of resonance and leaves signal wave forms undistorted.

BLM series is effective in circuits without stable ground lines because BLM series does not need a connection to ground.

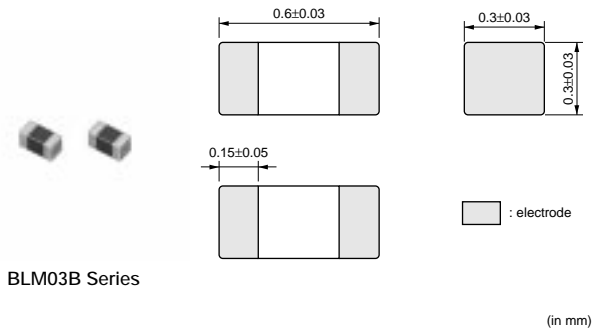
The nickel barrier structure of the external electrodes provides excellent solder heat resistance. BLM_B series can minimize attenuation of the signal waveform due to its sharp impedance characteristics. Various impedances are available to match signal frequency.

The small size of BLM03B series (0.6x0.3mm) is suitable for advanced high-density mounting, and is followed on a miniaturization of digital equipment, or module of a functional portion.

■ Equivalent Circuit

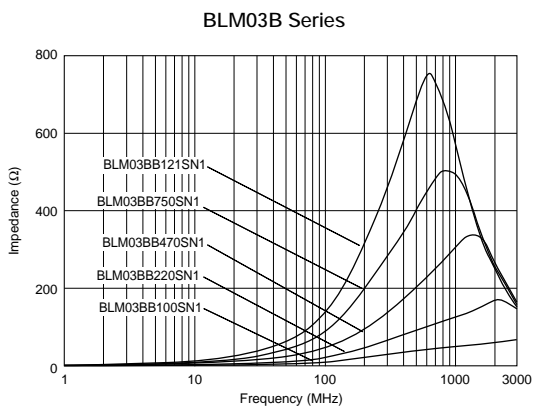


BLM03B Series (0201 Size)

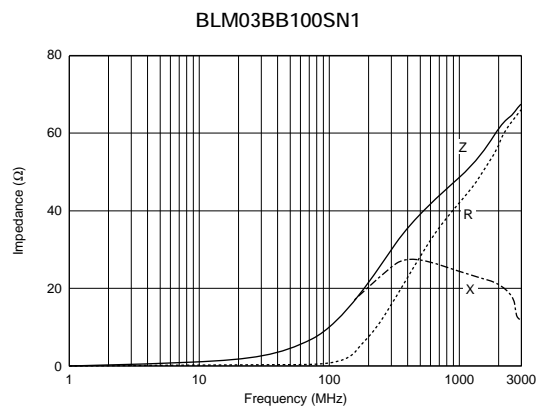


Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM03BB100SN1	10 ±25%	300	0.4	-55 to +125
BLM03BB220SN1	22 ±25%	200	0.5	-55 to +125
BLM03BB470SN1	47 ±25%	200	0.7	-55 to +125
BLM03BB750SN1	75 ±25%	200	1.0	-55 to +125
BLM03BB121SN1	120 ±25%	100	1.5	-55 to +125

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

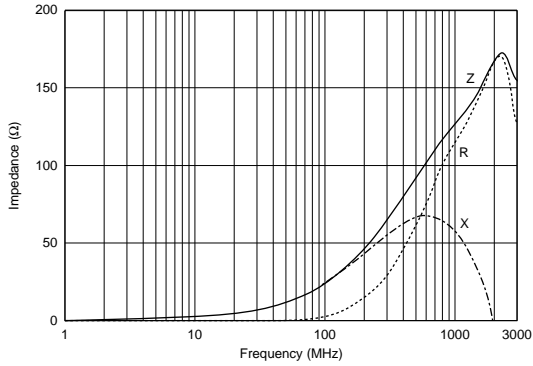


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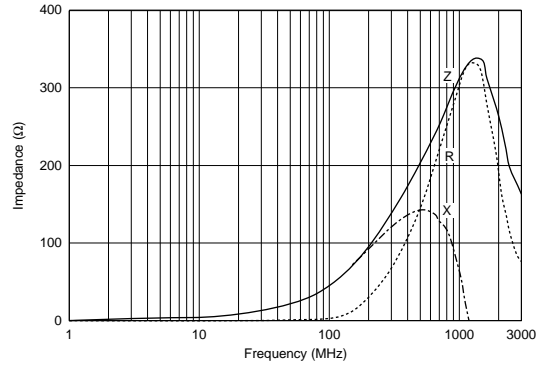
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Impedance - Frequency Characteristics

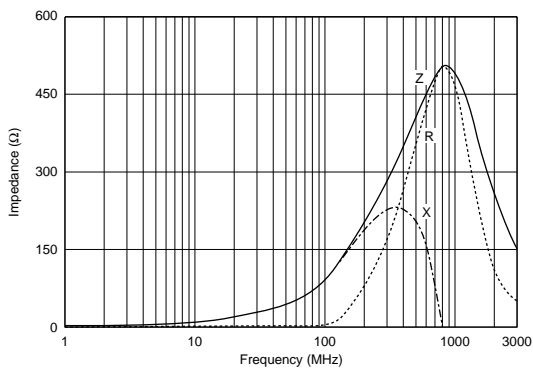
BLM03BB220SN1



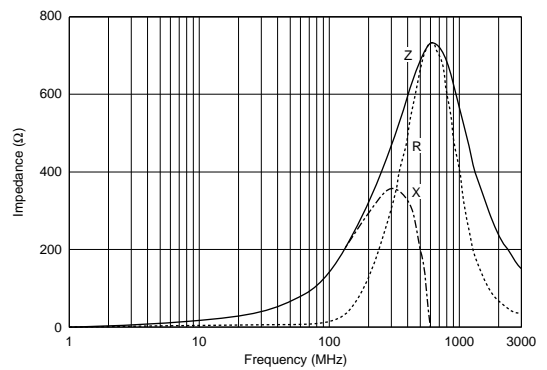
BLM03BB470SN1



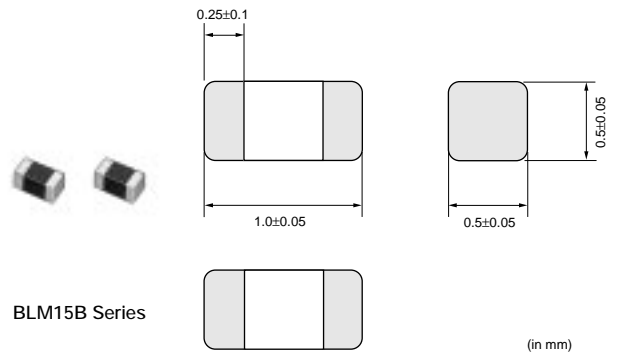
BLM03BB750SN1



BLM03BB121SN1



BLM15B Series (0402 Size)



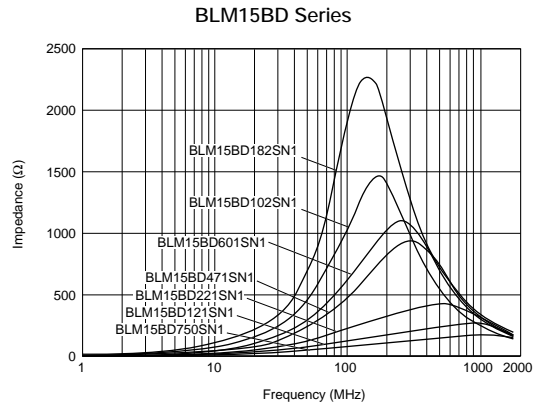
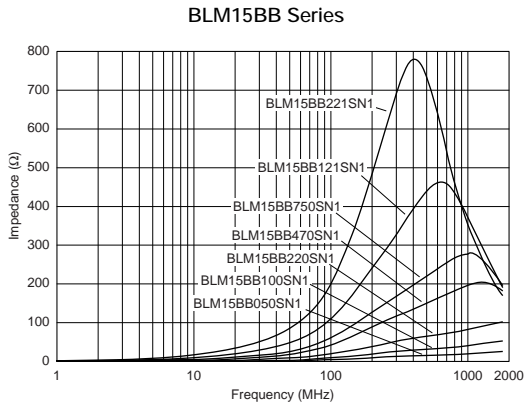
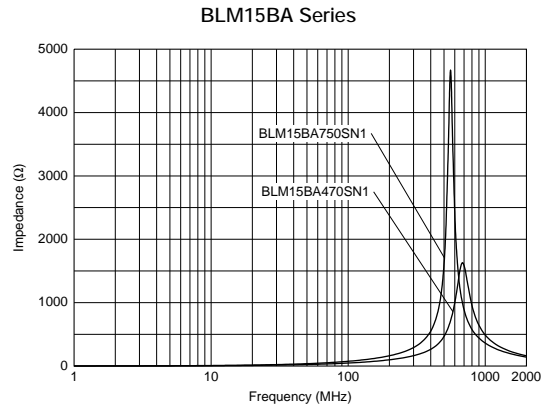
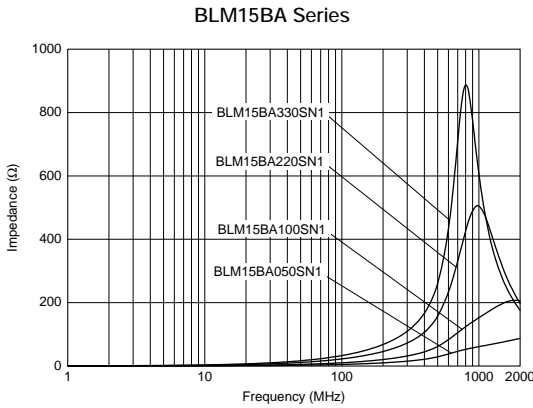
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15BA050SN1	5 ±25%	300	0.10	-55 to +125
BLM15BB050SN1	5 ±25%	500	0.08	-55 to +125
BLM15BA100SN1	10 ±25%	300	0.20	-55 to +125
BLM15BB100SN1	10 ±25%	300	0.10	-55 to +125
BLM15BA220SN1	22 ±25%	300	0.30	-55 to +125
BLM15BB220SN1	22 ±25%	300	0.20	-55 to +125
BLM15BA330SN1	33 ±25%	300	0.40	-55 to +125
BLM15BA470SN1	47 ±25%	200	0.60	-55 to +125
BLM15BB470SN1	47 ±25%	300	0.35	-55 to +125
BLM15BA750SN1	75 ±25%	200	0.80	-55 to +125
BLM15BB750SN1	75 ±25%	300	0.40	-55 to +125
BLM15BD750SN1	75 ±25%	300	0.20	-55 to +125
BLM15BB121SN1	120 ±25%	300	0.55	-55 to +125

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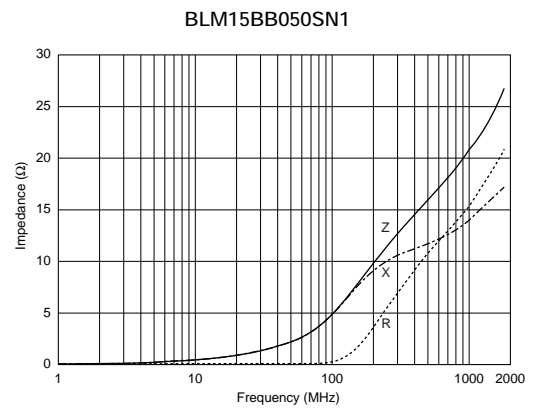
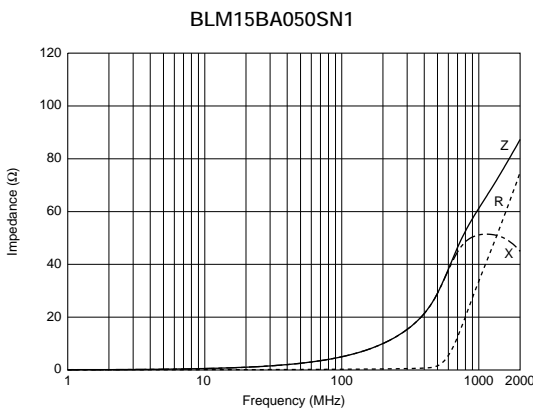
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Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15BD121SN1	120 ±25%	300	0.30	-55 to +125
BLM15BB221SN1	220 ±25%	200	0.80	-55 to +125
BLM15BD221SN1	220 ±25%	300	0.40	-55 to +125
BLM15BD471SN1	470 ±25%	200	0.60	-55 to +125
BLM15BD601SN1	600 ±25%	200	0.65	-55 to +125
BLM15BD102SN1	1000 ±25%	200	0.90	-55 to +125
BLM15BD182SN1	1800 ±25%	100	1.40	-55 to +125

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

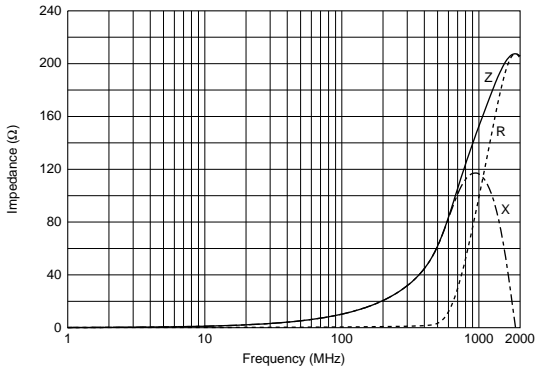


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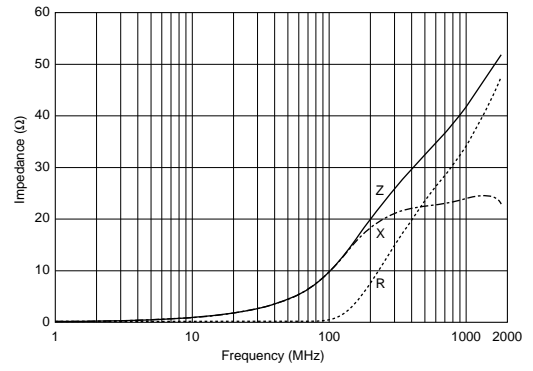
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Impedance - Frequency Characteristics

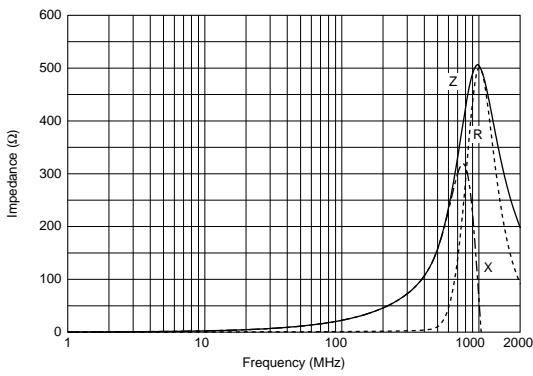
BLM15BA100SN1



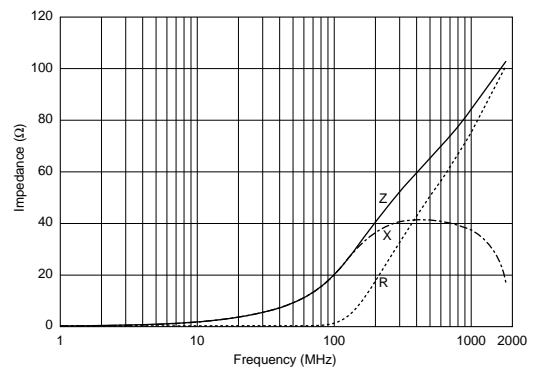
BLM15BB100SN1



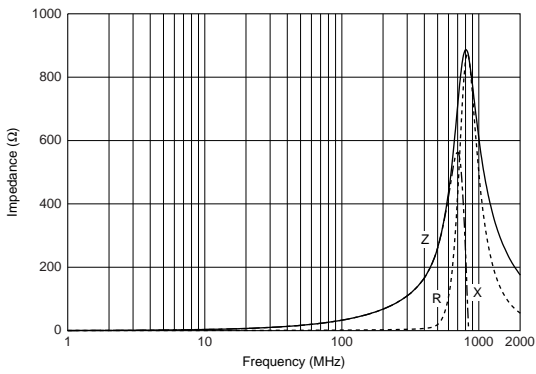
BLM15BA220SN1



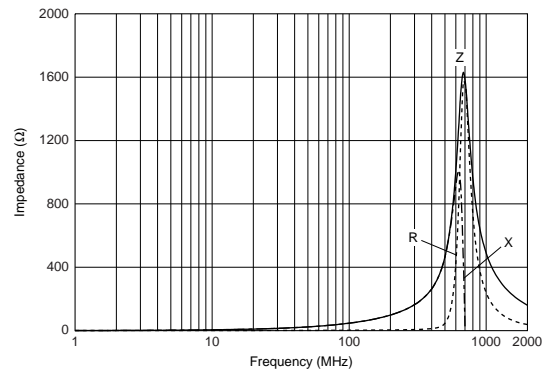
BLM15BB220SN1



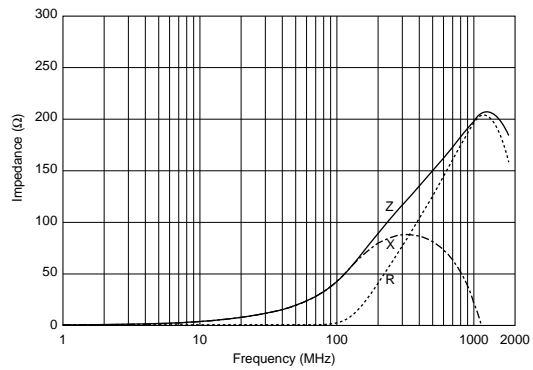
BLM15BA330SN1



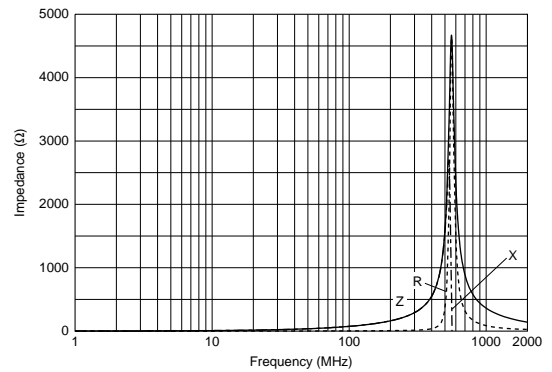
BLM15BA470SN1



BLM15BB470SN1



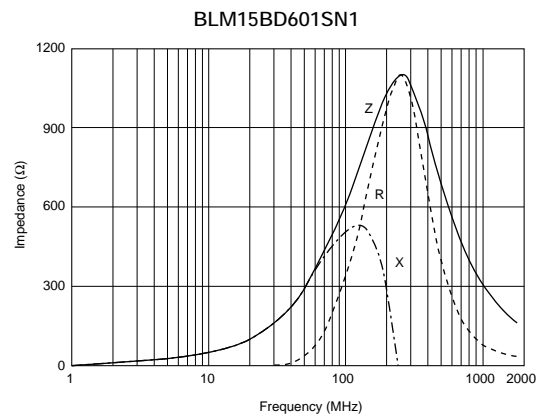
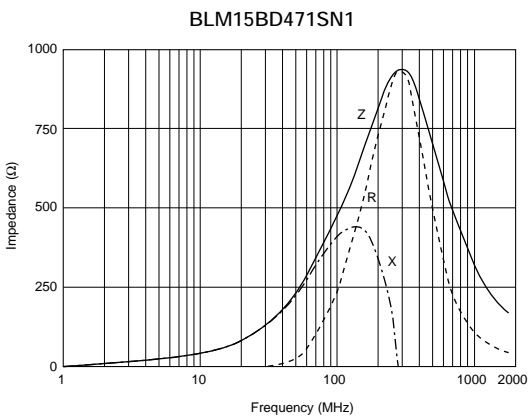
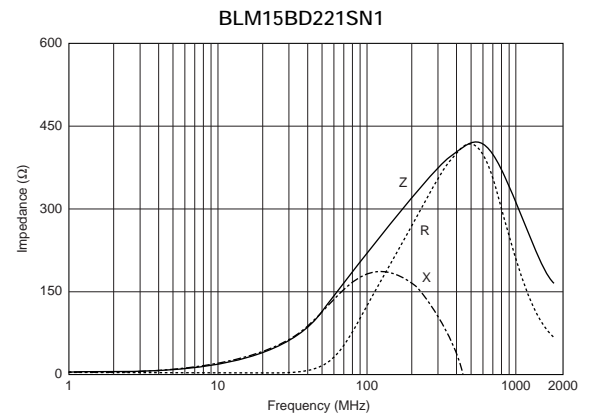
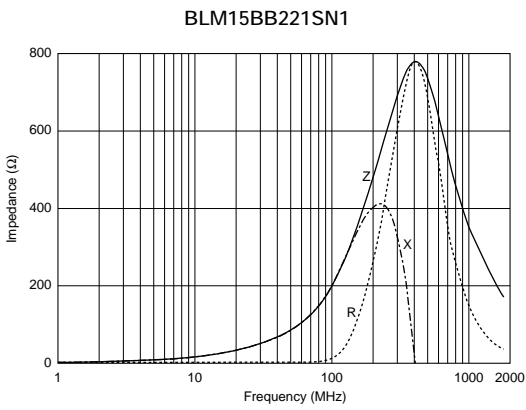
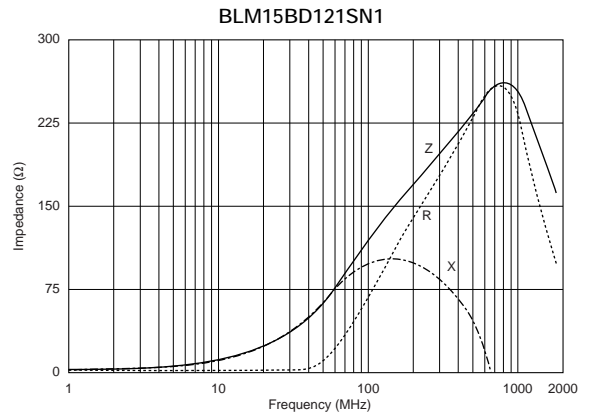
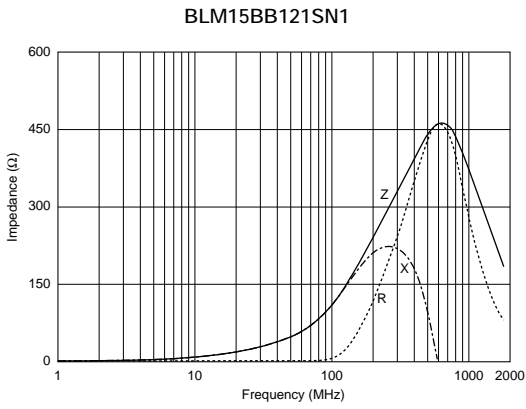
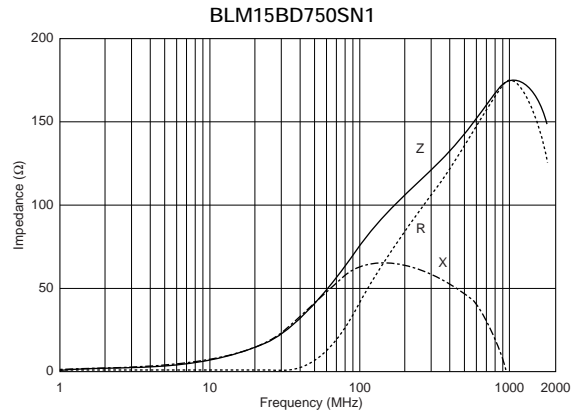
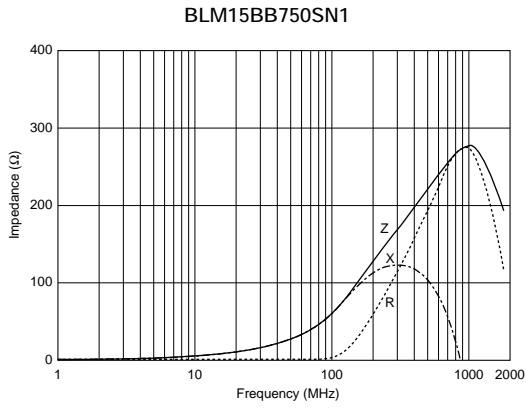
BLM15BA750SN1



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Impedance - Frequency Characteristics

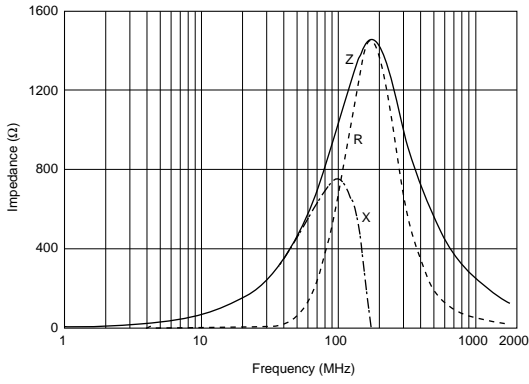


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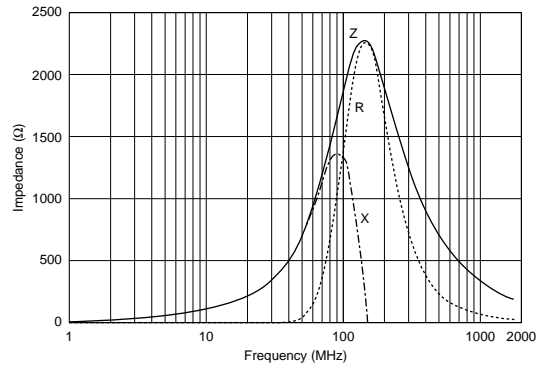
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■ Impedance - Frequency Characteristics

BLM15BD102SN1

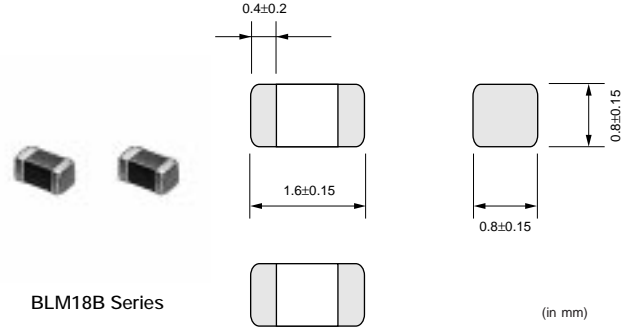


BLM15BD182SN1



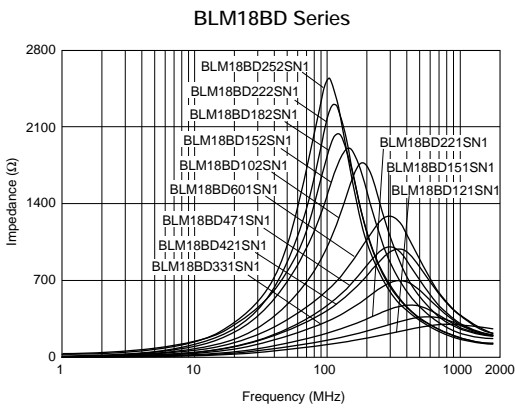
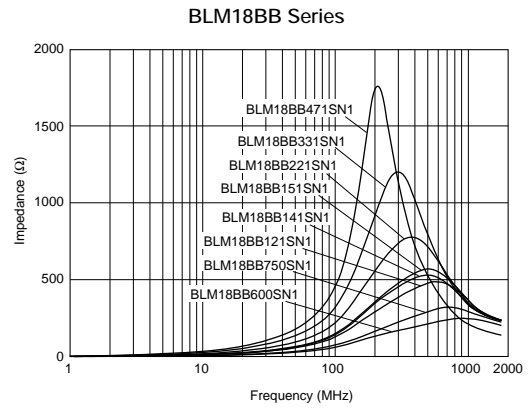
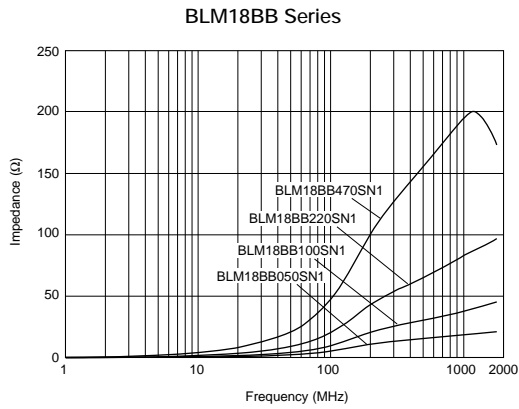
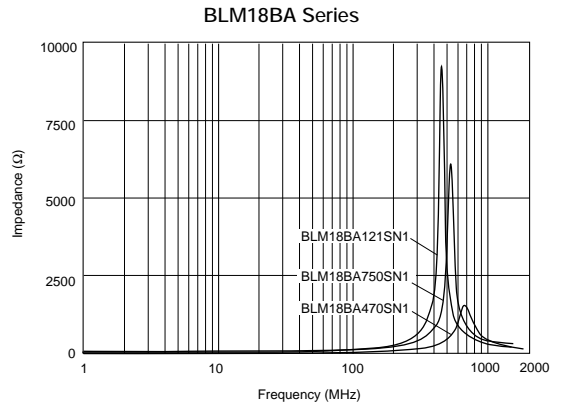
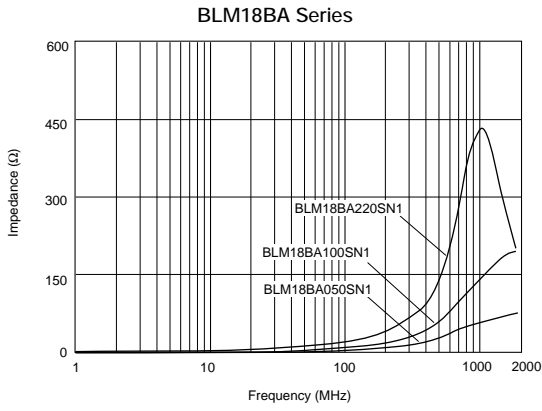
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BLM18B Series (0603 Size)

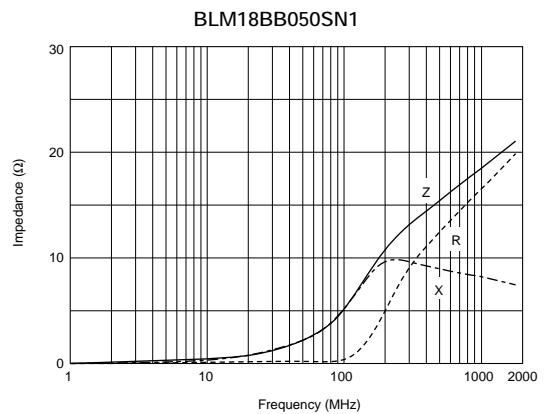
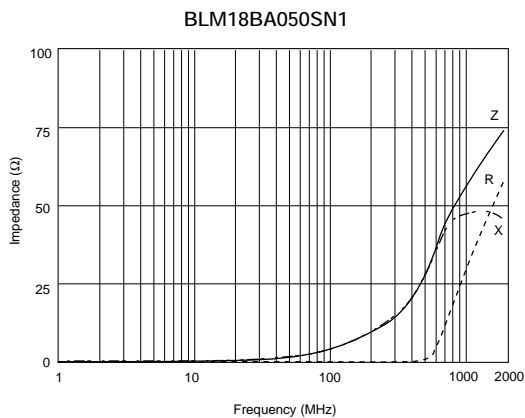


Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18BA050SN1	5 ±25%	500	0.20	-55 to +125
BLM18BB050SN1	5 ±25%	700	0.10	-55 to +125
BLM18BA100SN1	10 ±25%	500	0.25	-55 to +125
BLM18BB100SN1	10 ±25%	500	0.15	-55 to +125
BLM18BA220SN1	22 ±25%	500	0.35	-55 to +125
BLM18BB220SN1	22 ±25%	500	0.25	-55 to +125
BLM18BA470SN1	47 ±25%	300	0.55	-55 to +125
BLM18BB470SN1	47 ±25%	500	0.30	-55 to +125
BLM18BB600SN1	60 ±25%	200	0.35	-55 to +125
BLM18BA750SN1	75 ±25%	300	0.70	-55 to +125
BLM18BB750SN1	75 ±25%	200	0.35	-55 to +125
BLM18BA121SN1	120 ±25%	200	0.90	-55 to +125
BLM18BB121SN1	120 ±25%	200	0.50	-55 to +125
BLM18BD121SN1	120 ±25%	200	0.40	-55 to +125
BLM18BB141SN1	140 ±25%	200	0.55	-55 to +125
BLM18BB151SN1	150 ±25%	200	0.55	-55 to +125
BLM18BD151SN1	150 ±25%	200	0.40	-55 to +125
BLM18BB221SN1	220 ±25%	200	0.65	-55 to +125
BLM18BD221SN1	220 ±25%	200	0.45	-55 to +125
BLM18BB331SN1	330 ±25%	200	0.75	-55 to +125
BLM18BD331SN1	330 ±25%	200	0.50	-55 to +125
BLM18BD421SN1	420 ±25%	200	0.55	-55 to +125
BLM18BB471SN1	470 ±25%	50	1.00	-55 to +125
BLM18BD471SN1	470 ±25%	200	0.55	-55 to +125
BLM18BD601SN1	600 ±25%	200	0.65	-55 to +125
BLM18BD102SN1	1000 ±25%	100	0.85	-55 to +125
BLM18BD152SN1	1500 ±25%	50	1.20	-55 to +125
BLM18BD182SN1	1800 ±25%	50	1.50	-55 to +125
BLM18BD222SN1	2200 ±25%	50	1.50	-55 to +125
BLM18BD252SN1	2500 ±25%	50	1.50	-55 to +125

■ Impedance - Frequency (Typical)



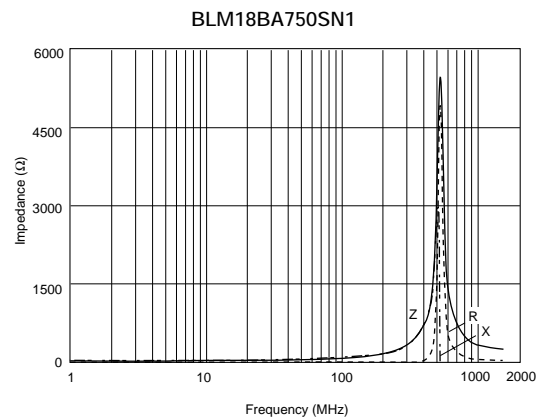
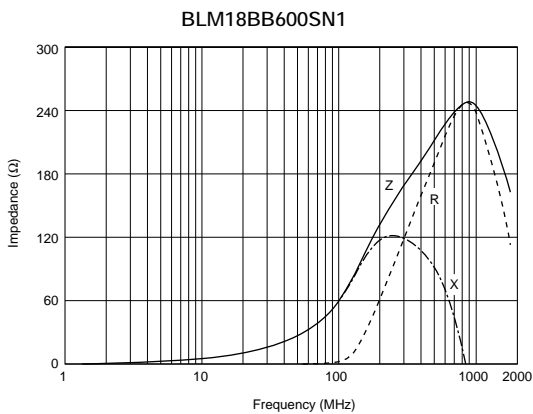
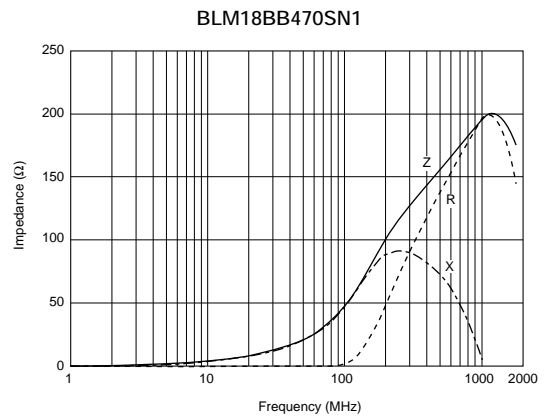
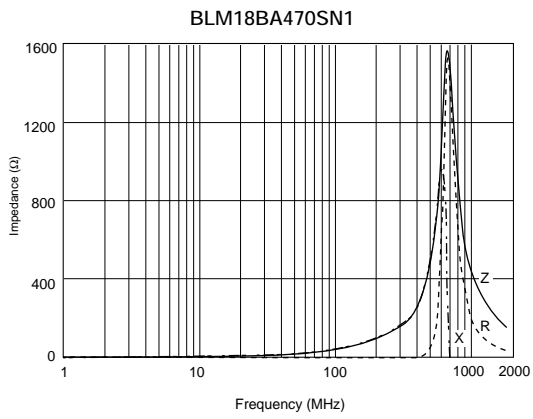
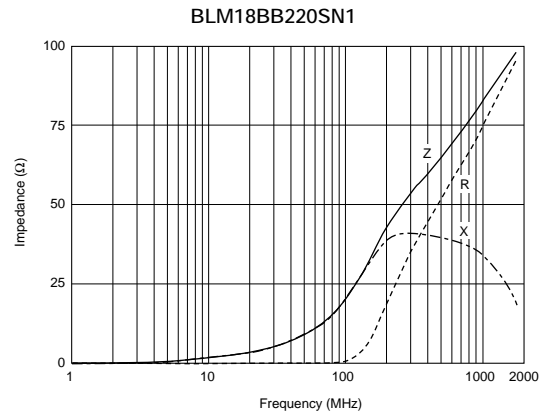
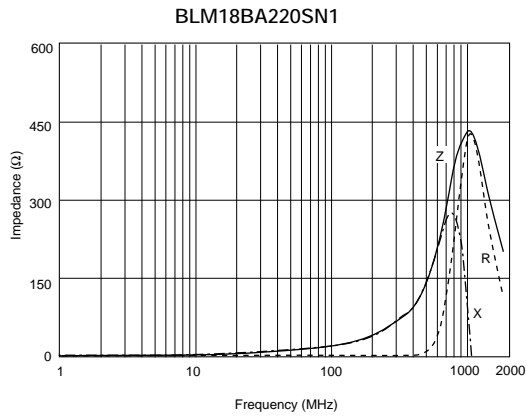
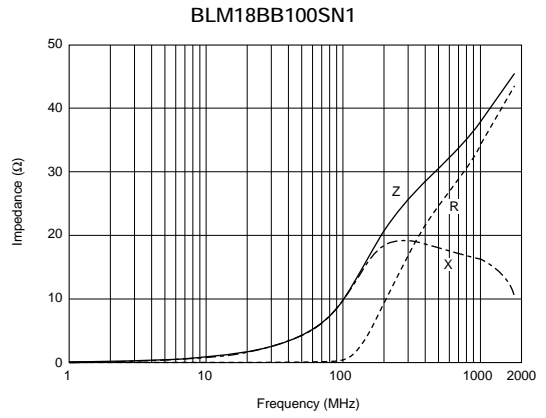
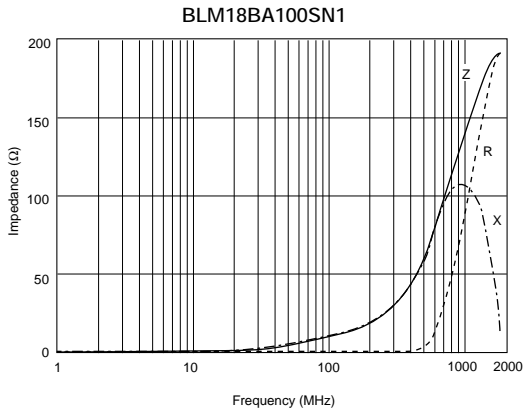
■ Impedance - Frequency Characteristics



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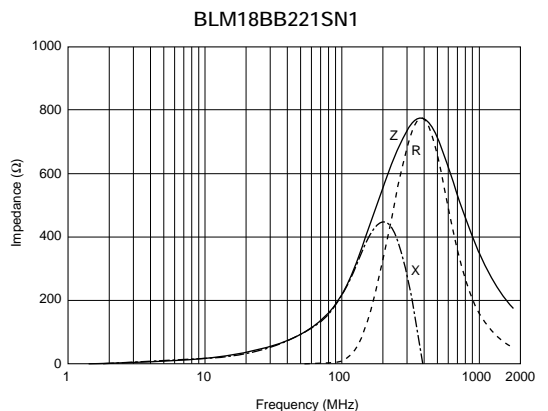
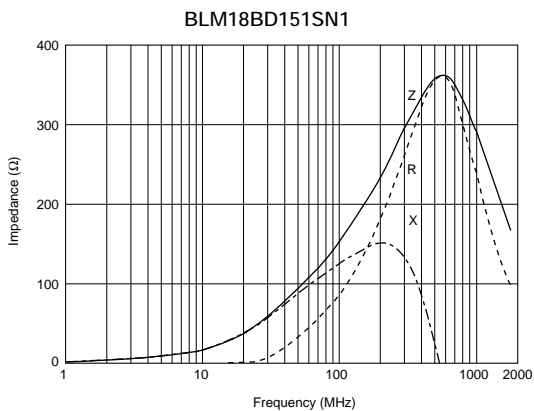
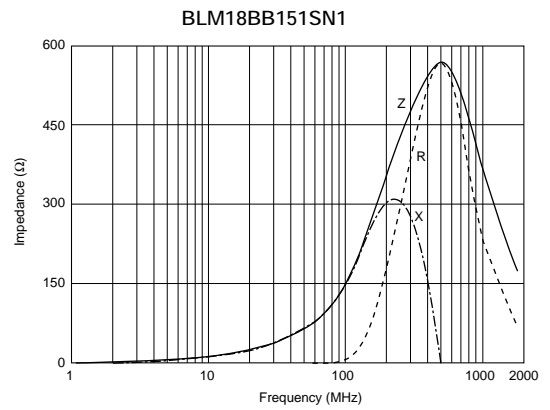
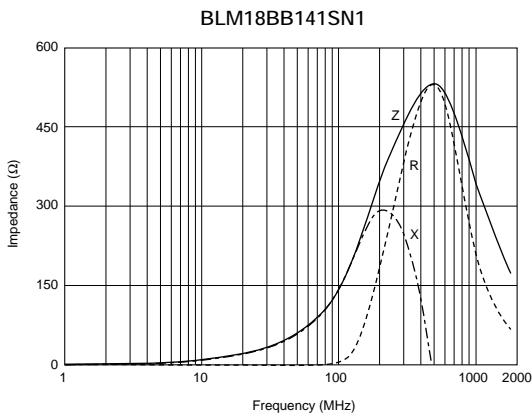
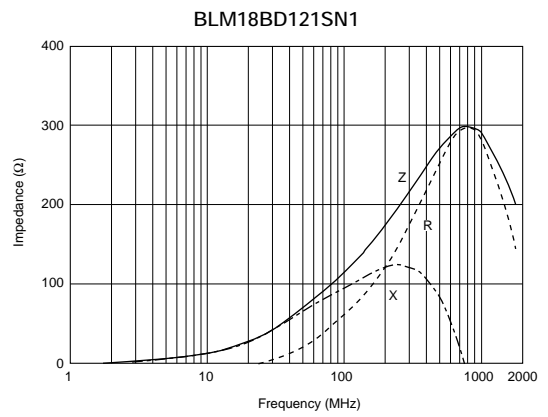
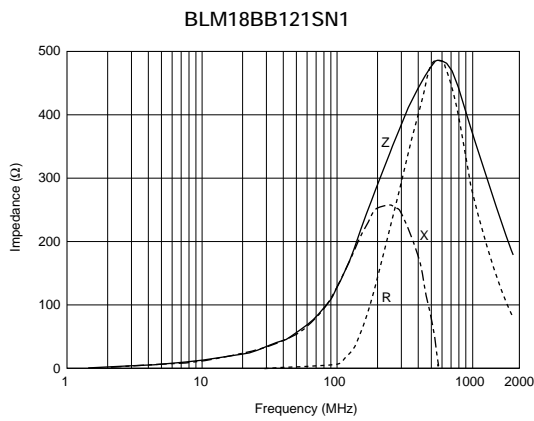
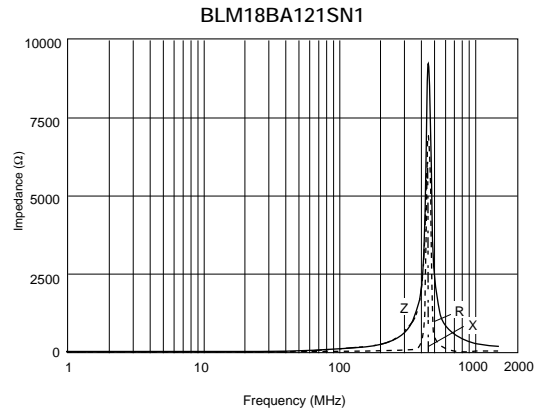
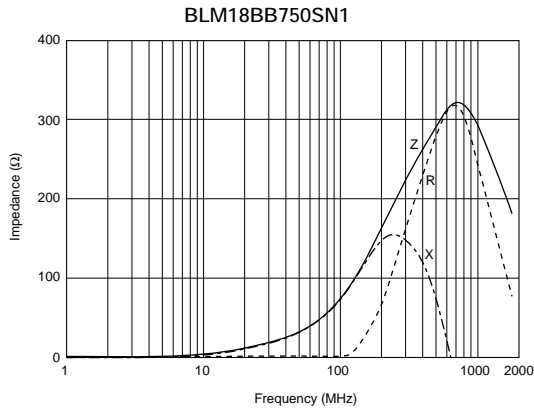
Impedance - Frequency Characteristics



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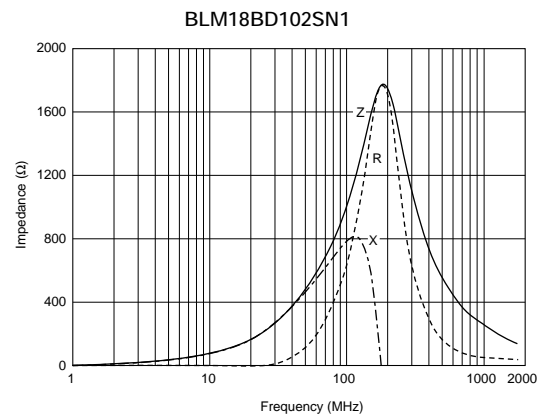
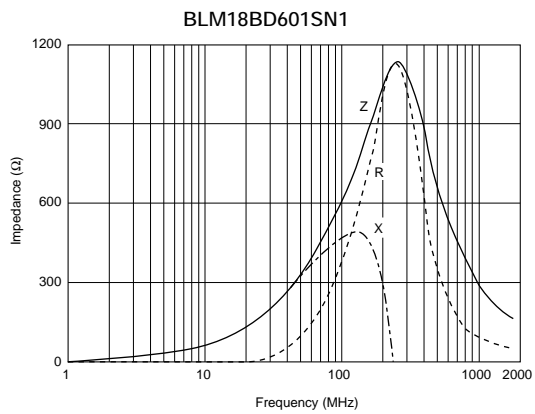
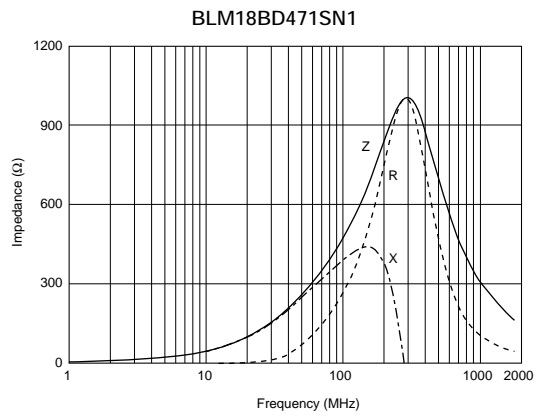
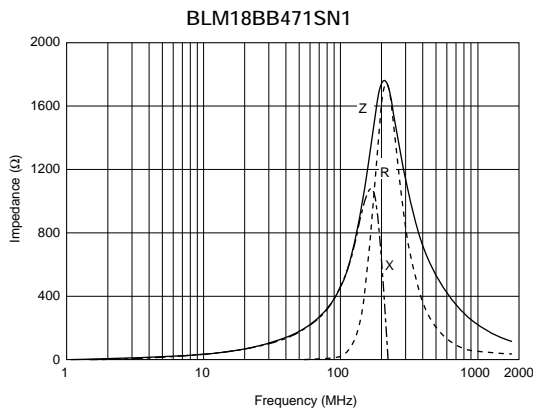
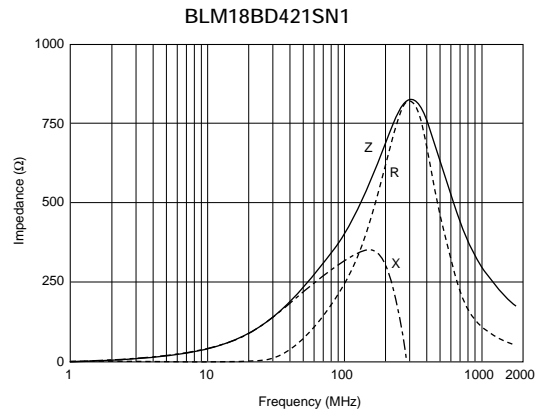
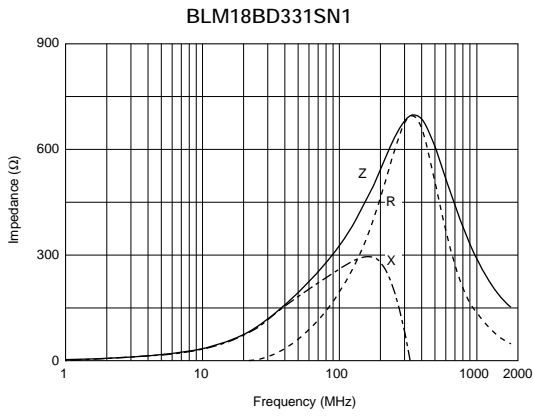
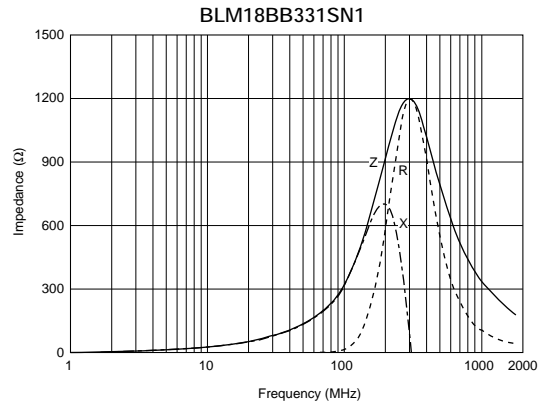
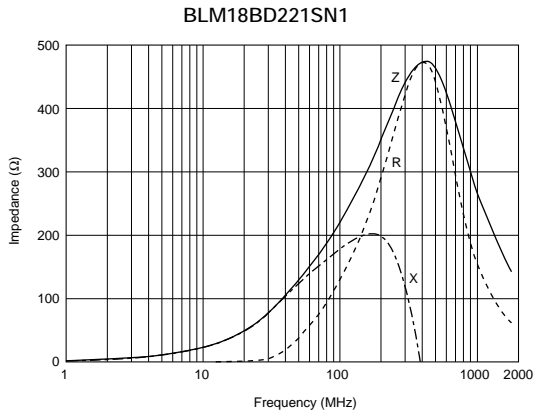
Impedance - Frequency Characteristics



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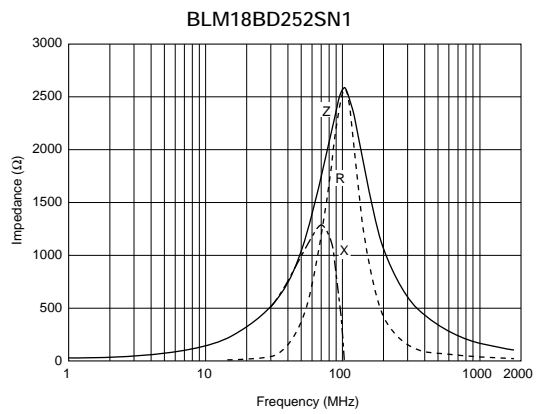
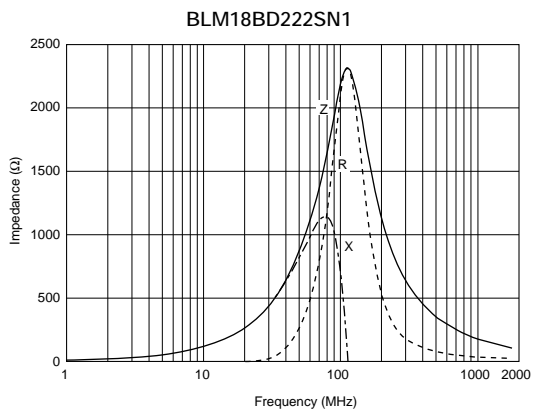
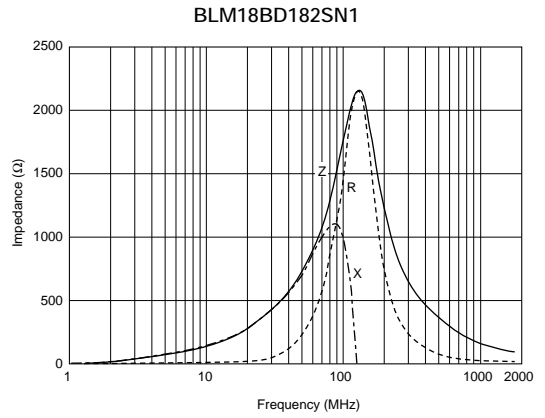
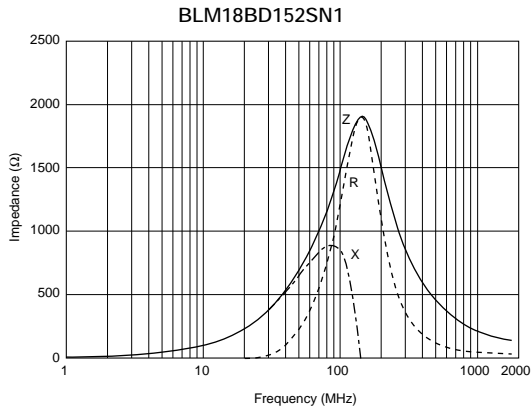
Impedance - Frequency Characteristics



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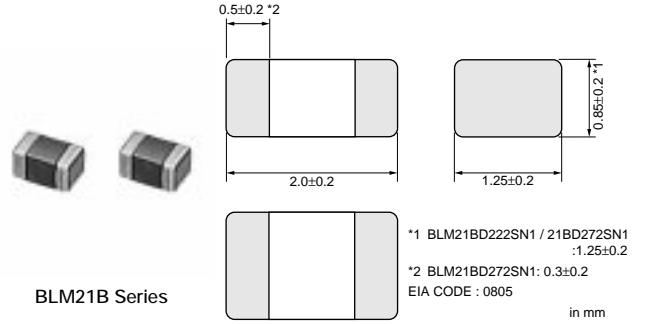
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■ Impedance - Frequency Characteristics



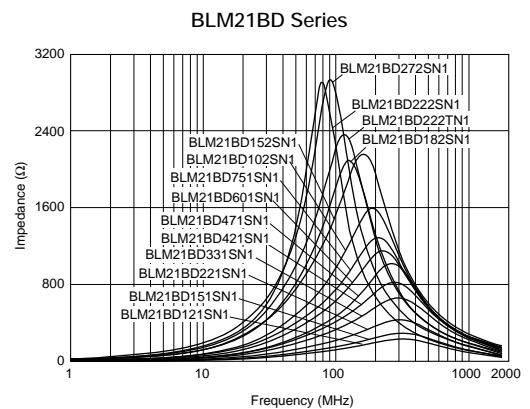
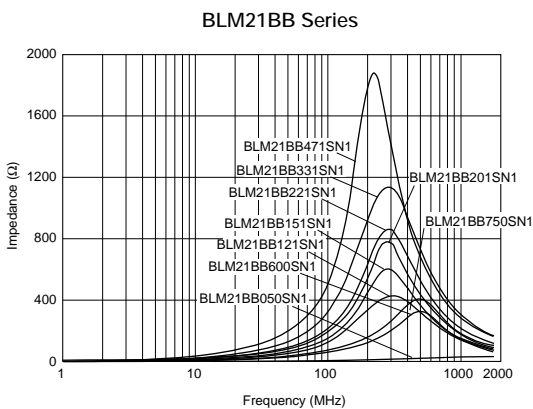
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BLM21B Series (0805 Size)



Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM21BB050SN1	5 ±25%	500	0.07	-55 to +125
BLM21BB600SN1	60 ±25%	200	0.20	-55 to +125
BLM21BB750SN1	75 ±25%	200	0.25	-55 to +125
BLM21BB121SN1	120 ±25%	200	0.25	-55 to +125
BLM21BD121SN1	120 ±25%	200	0.25	-55 to +125
BLM21BB151SN1	150 ±25%	200	0.25	-55 to +125
BLM21BD151SN1	150 ±25%	200	0.25	-55 to +125
BLM21BB201SN1	200 ±25%	200	0.35	-55 to +125
BLM21BB221SN1	220 ±25%	200	0.35	-55 to +125
BLM21BD221SN1	220 ±25%	200	0.25	-55 to +125
BLM21BB331SN1	330 ±25%	200	0.40	-55 to +125
BLM21BD331SN1	330 ±25%	200	0.30	-55 to +125
BLM21BD421SN1	420 ±25%	200	0.30	-55 to +125
BLM21BB471SN1	470 ±25%	200	0.45	-55 to +125
BLM21BD471SN1	470 ±25%	200	0.35	-55 to +125
BLM21BD601SN1	600 ±25%	200	0.35	-55 to +125
BLM21BD751SN1	750 ±25%	200	0.40	-55 to +125
BLM21BD102SN1	1000 ±25%	200	0.40	-55 to +125
BLM21BD152SN1	1500 ±25%	200	0.45	-55 to +125
BLM21BD182SN1	1800 ±25%	200	0.50	-55 to +125
BLM21BD222TN1	2200 ±25%	200	0.60	-55 to +125
BLM21BD222SN1	2250 (Typ.)	200	0.60	-55 to +125
BLM21BD272SN1	2700 ±25%	200	0.80	-55 to +125

■ Impedance - Frequency (Typical)

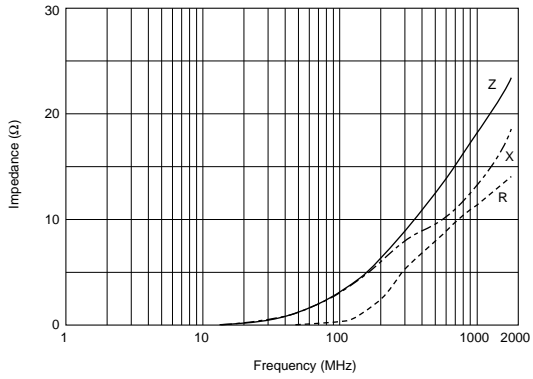


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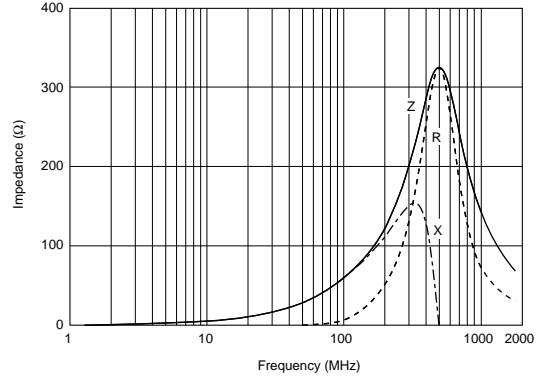
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Impedance - Frequency Characteristics

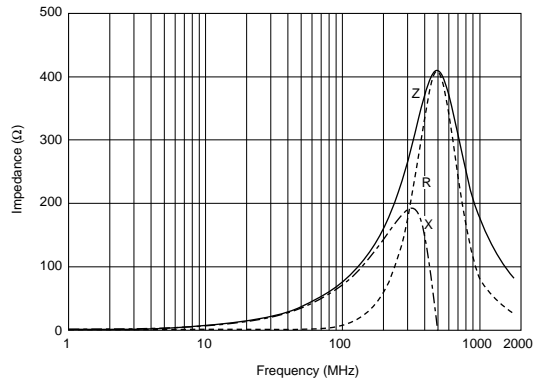
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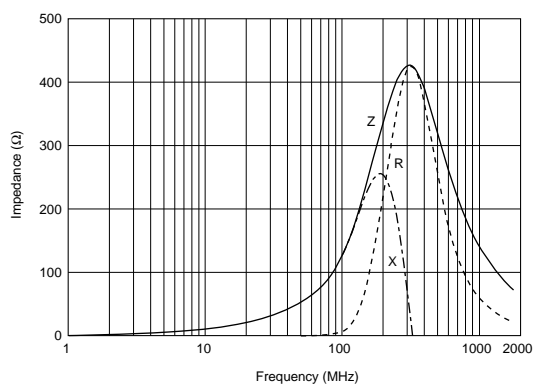
BLM21BB600SN1



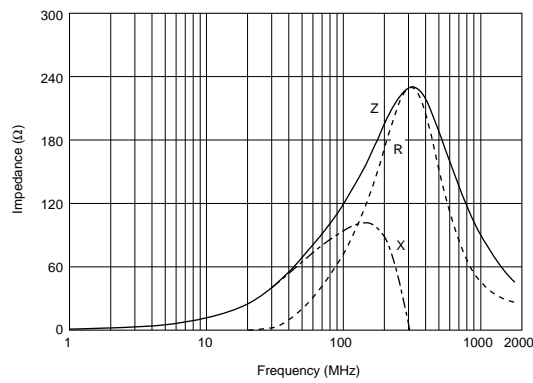
BLM21BB750SN1



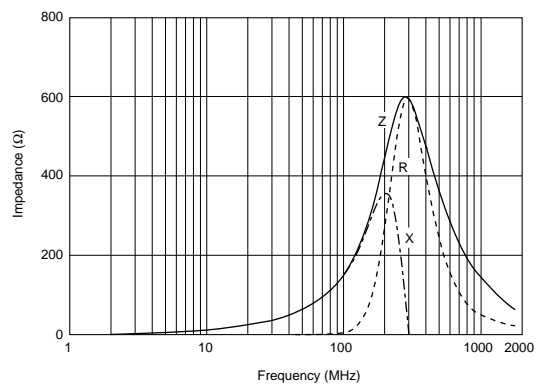
BLM21BB121SN1



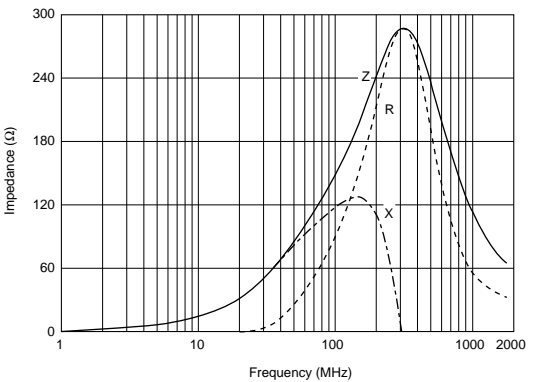
BLM21BD121SN1



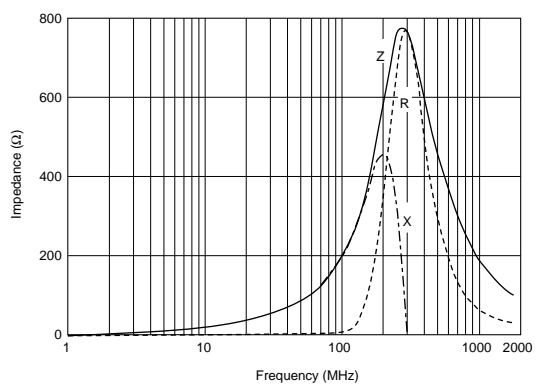
BLM21BB151SN1



BLM21BD151SN1



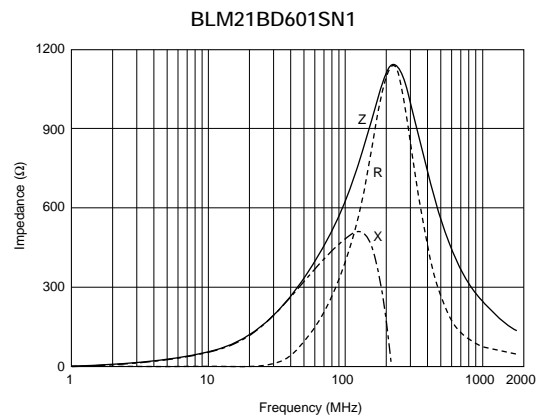
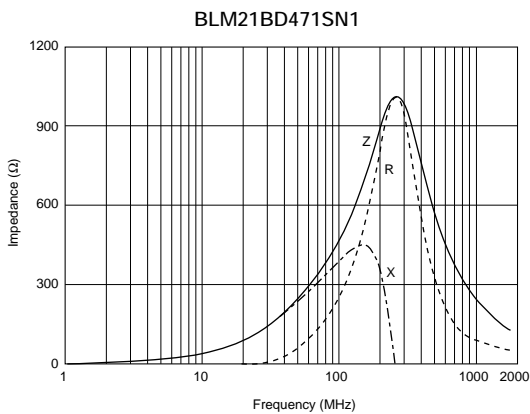
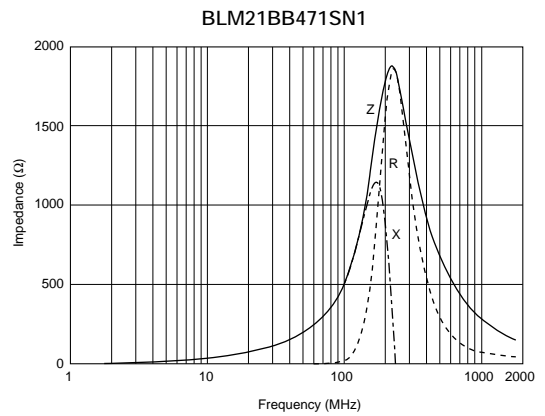
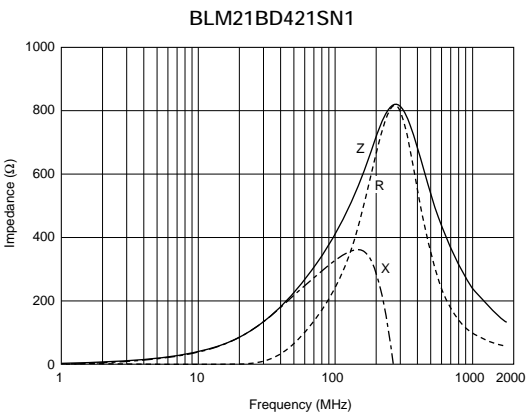
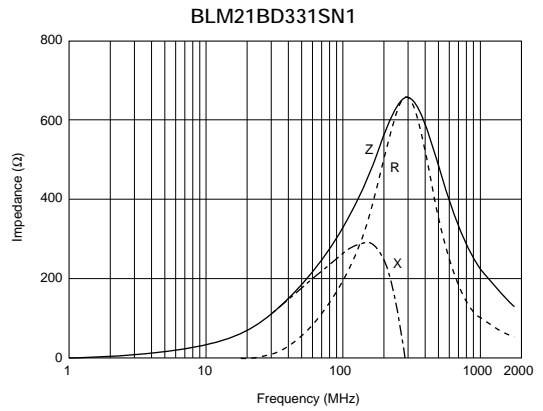
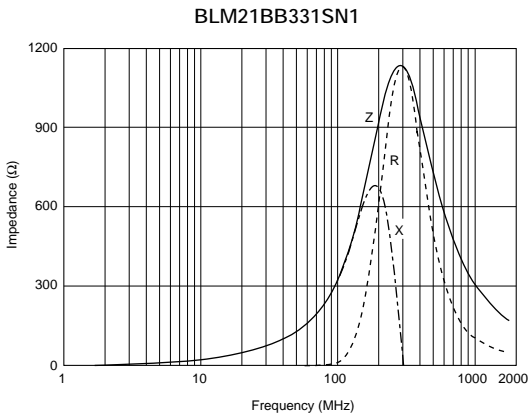
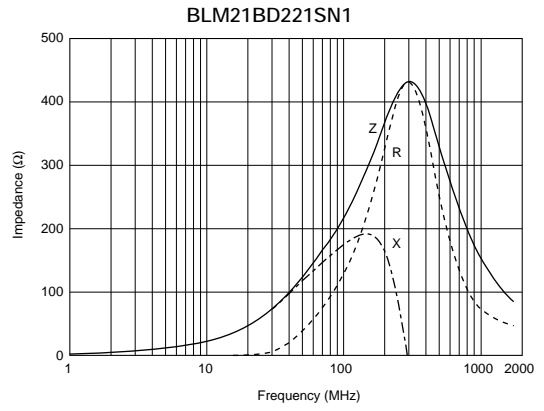
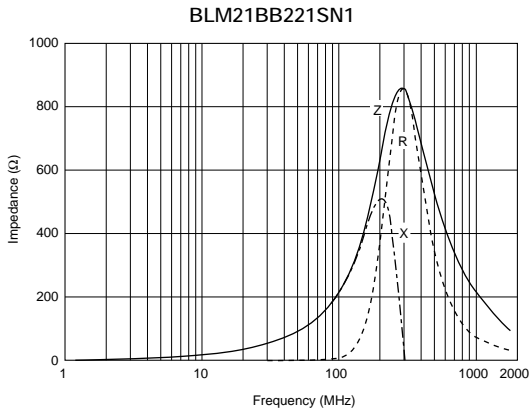
BLM21BB201SN1



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■ Impedance - Frequency Characteristics

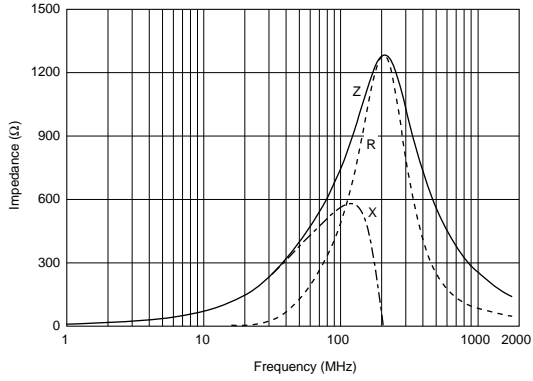


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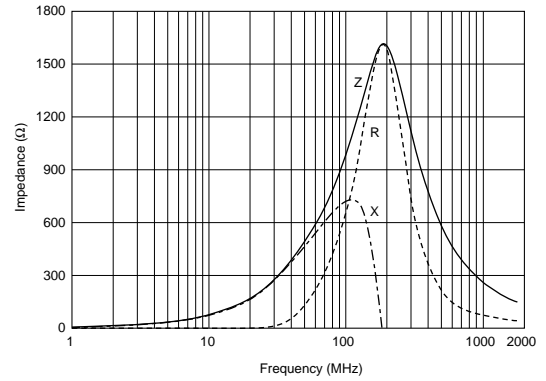
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Impedance - Frequency Characteristics

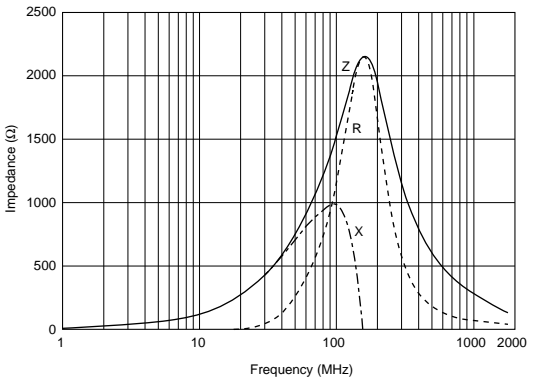
BLM21BD751SN1



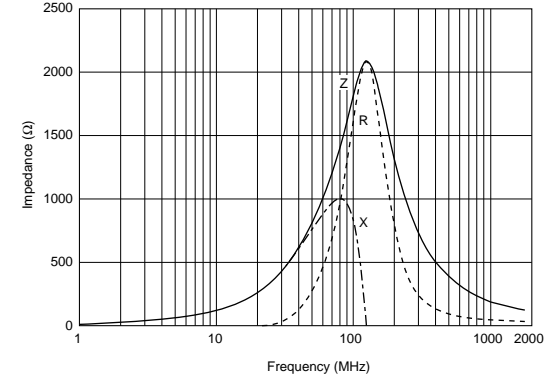
BLM21BD102SN1



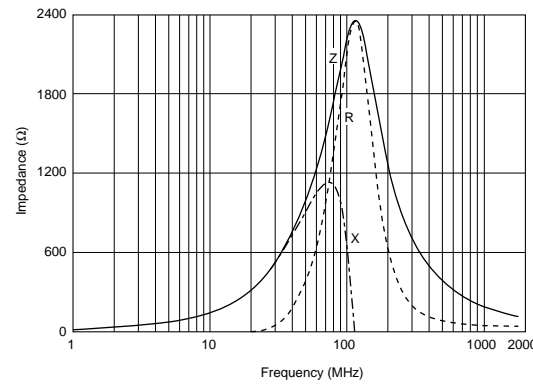
BLM21BD152SN1



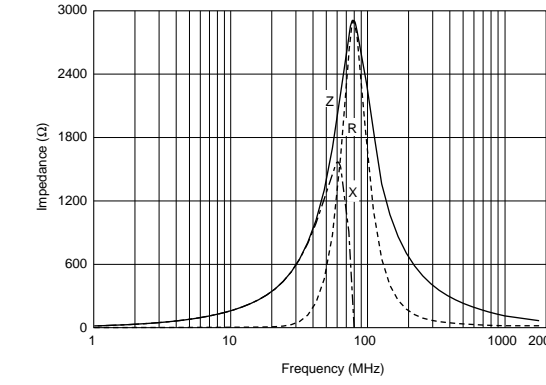
BLM21BD182SN1



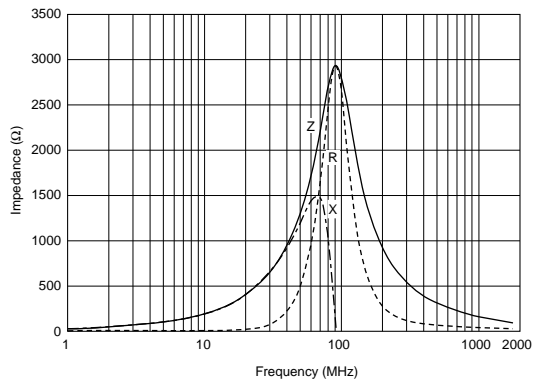
BLM21BD222TN1



BLM21BD222SN1



BLM21BD272SN1



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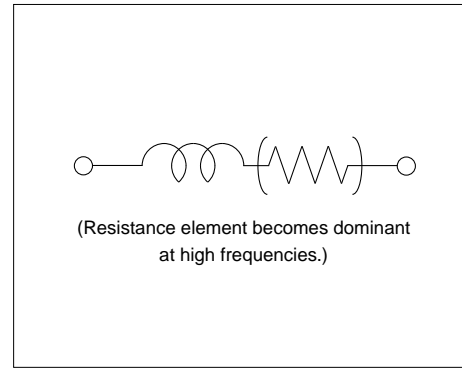
■ Features (BLM_R Series)

The chip ferrite beads BLM series is designed to function nearly as a resistor at noise frequencies, which greatly reduces the possibility of resonance and leaves signal wave forms undistorted.

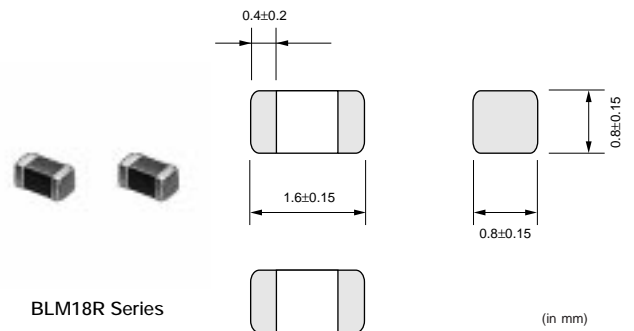
BLM series is effective in circuits without stable ground lines because BLM series does not need a connection to ground.

The nickel barrier structure of the external electrodes provides excellent solder heat resistance. BLM_R series can be used in a digital Interface. Resistance of BLM_R series especially grows in the lower frequency range. Therefore BLM_R series is less effective for digital signal waveform at low frequency range and can suppress the ringing.

■ Equivalent Circuit

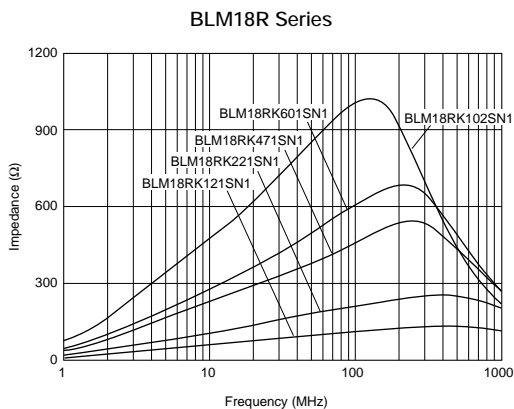


BLM18R Series (0603 Size)



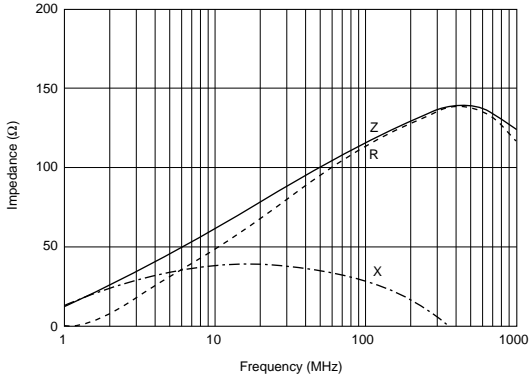
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18RK121SN1	120 ±25%	200	0.25	-55 to +125
BLM18RK221SN1	220 ±25%	200	0.30	-55 to +125
BLM18RK471SN1	470 ±25%	200	0.50	-55 to +125
BLM18RK601SN1	600 ±25%	200	0.60	-55 to +125
BLM18RK102SN1	1000 ±25%	200	0.80	-55 to +125

■ Impedance - Frequency (Typical)

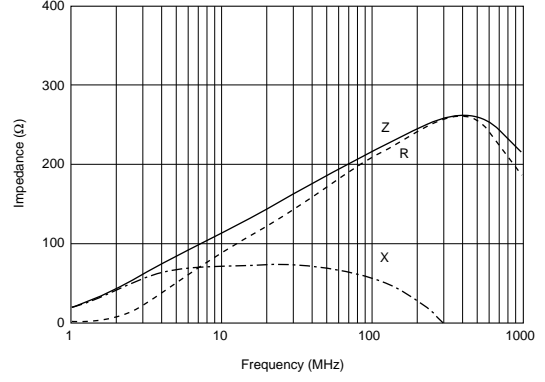


■ Impedance - Frequency Characteristics

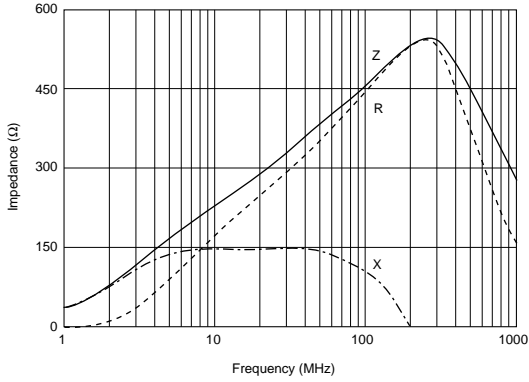
BLM18RK121SN1



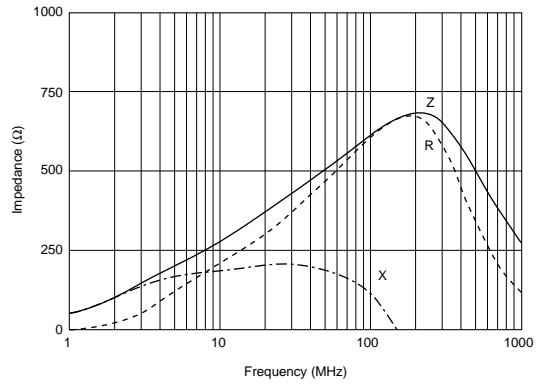
BLM18RK221SN1



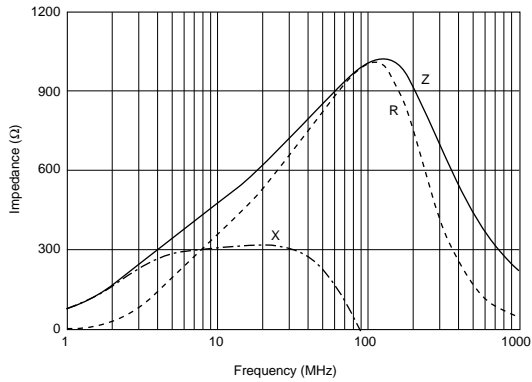
BLM18RK471SN1



BLM18RK601SN1

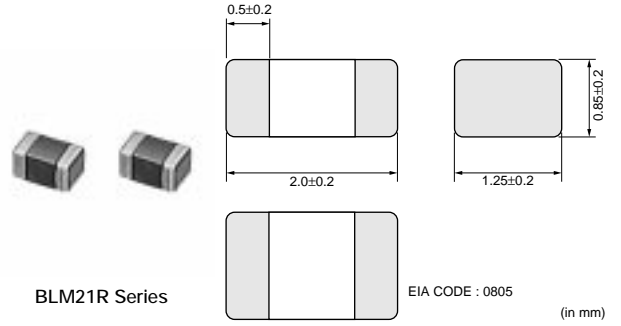


BLM18RK102SN1



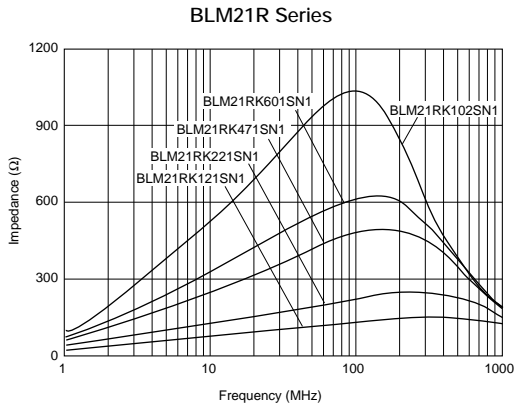
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BLM21R Series (0805 Size)

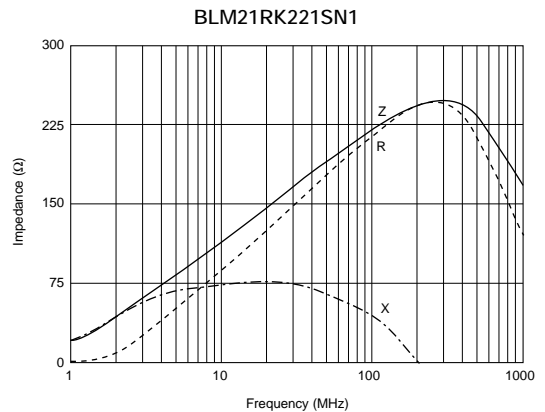
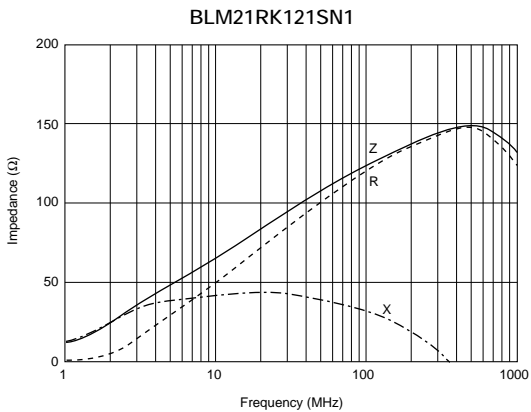


Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM21RK121SN1	120 ±25%	200	0.15	-55 to +125
BLM21RK221SN1	220 ±25%	200	0.20	-55 to +125
BLM21RK471SN1	470 ±25%	200	0.25	-55 to +125
BLM21RK601SN1	600 ±25%	200	0.30	-55 to +125
BLM21RK102SN1	1000 ±25%	200	0.50	-55 to +125

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

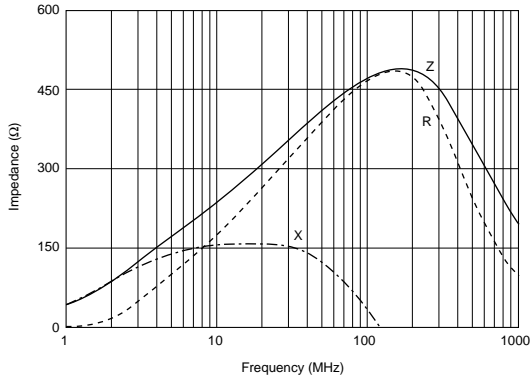


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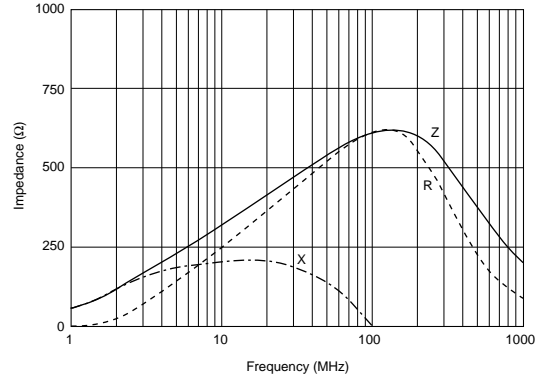
Continued from the preceding page.

■ Impedance - Frequency Characteristics

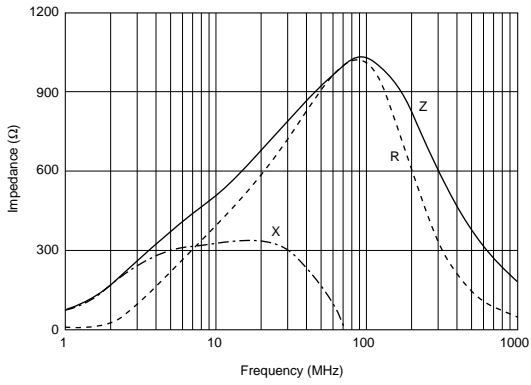
BLM21RK471SN1



BLM21RK601SN1



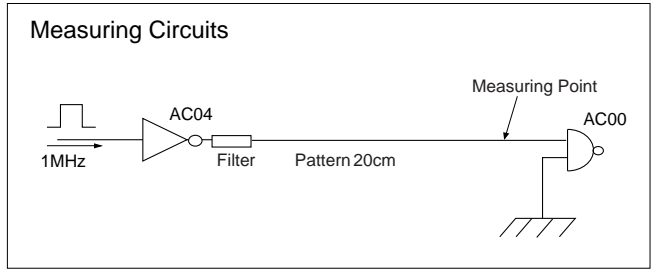
BLM21RK102SN1



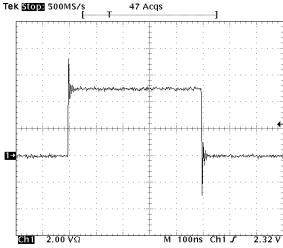
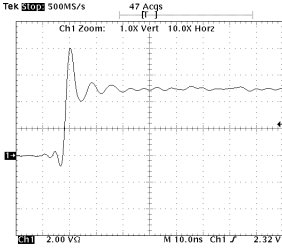
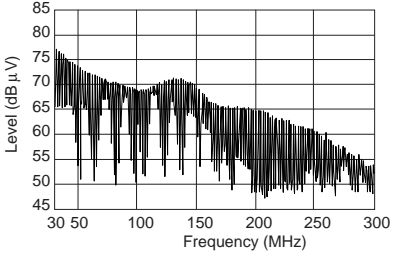
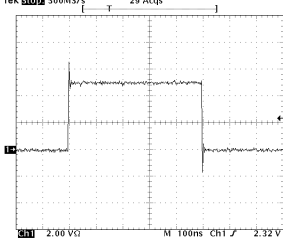
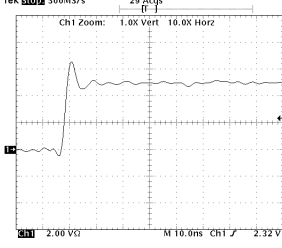
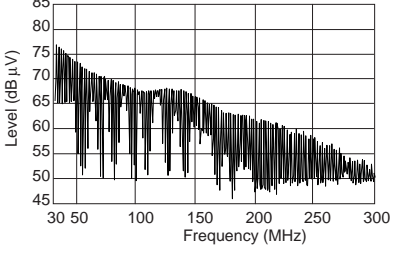
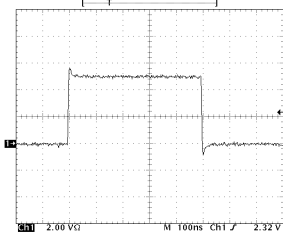
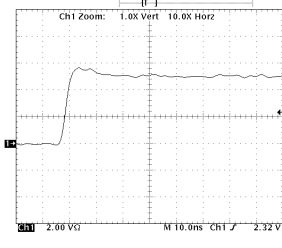
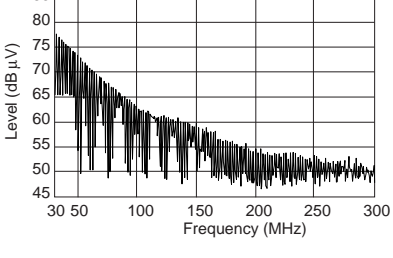
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Noise Suppression Effect of BLM_R Series

Waveform Distortion Suppressing Performance of BLM□□R Series



1

Type of Filter	EMI Suppression Effect / Description		
<p>Initial (No filter)</p>	<p>Signal waveform (100nsec/div, 2V/div)</p>  <p>Expand (10nsec/div, 2V/div)</p> 	<p>Spectrum</p>  <p>Level (dB μV)</p> <p>Frequency (MHz)</p> <p>Ringing is caused on the signal waveform. Such ringing contains several hundred MHz harmonic components and generates noise.</p>	
<p>Resister (47Ω) is used</p>	<p>Signal waveform (100nsec/div, 2V/div)</p>  <p>Expand (10nsec/div, 2V/div)</p> 	<p>Spectrum</p>  <p>Level (dB μV)</p> <p>Frequency (MHz)</p> <p>Comparing initial waveform, ringing is suppressed a little. However there still remains high level waveform distortion.</p>	
<p>BLM18RK221SN1 (220Ω at 100MHz) is used</p>	<p>Signal waveform (100nsec/div, 2V/div)</p>  <p>Expand (10nsec/div, 2V/div)</p> 	<p>Spectrum</p>  <p>Level (dB μV)</p> <p>Frequency (MHz)</p> <p>BLM18R has excellent performance for noise suppression and waveform distortion suppression. BLM18R suppresses drastically not only spectrum level in more than 100MHz range but waveform distortion.</p>	

■ Features (BLM_P Series)

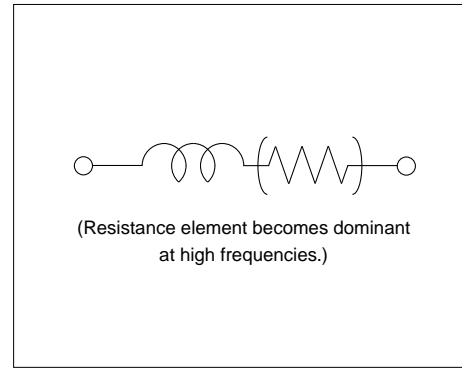
The chip ferrite beads BLM series is designed to function nearly as a resistor at noise frequencies, which greatly reduces the possibility of resonance and leaves signal wave forms undistorted.

BLM series is effective in circuits without stable ground lines because BLM series does not need a connection to ground.

The nickel barrier structure of the external electrodes provides excellent solder heat resistance. BLM_P series can be used in high current circuits due to its low DC resistance. It can match power lines to a maximum of 6A DC.

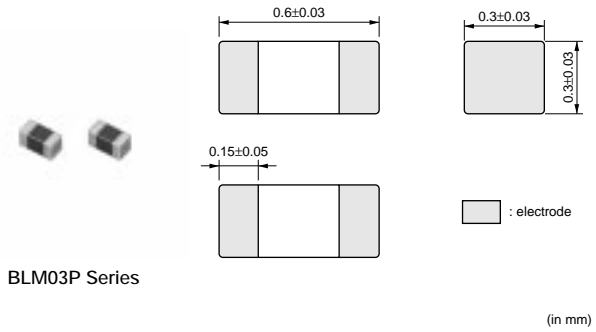
The small size of BLM03A series (0.6x0.3mm) is suitable for noise suppression in small equipment such as PA modules for cellular phones.

■ Equivalent Circuit



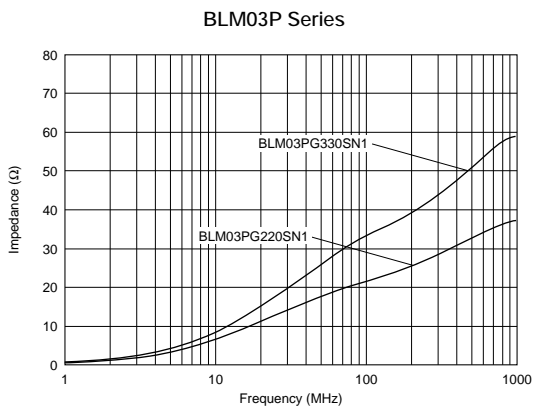
1

BLM03P Series (0201 Size)



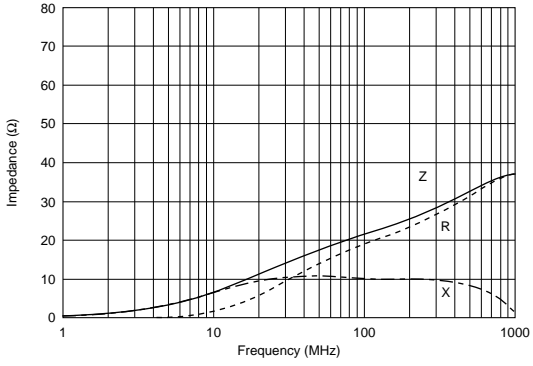
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM03PG220SN1	22 ±25%	900	0.065	-55 to +125
BLM03PG330SN1	33 ±25%	750	0.090	-55 to +125

■ Impedance - Frequency (Typical)

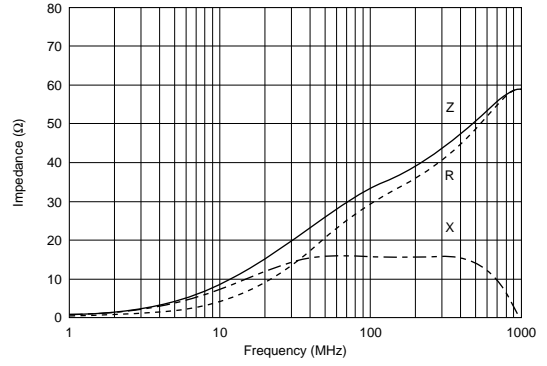


■ Impedance - Frequency Characteristics

BLM03PG220SN1

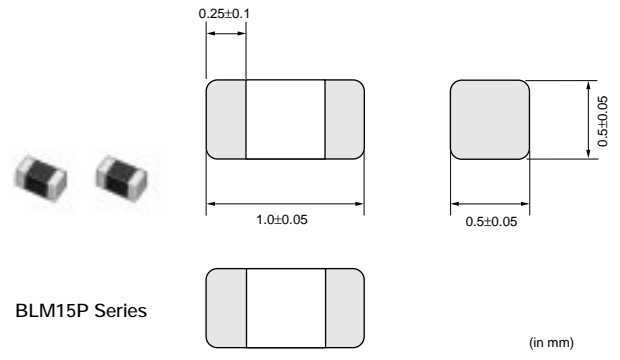


BLM03PG330SN1



1

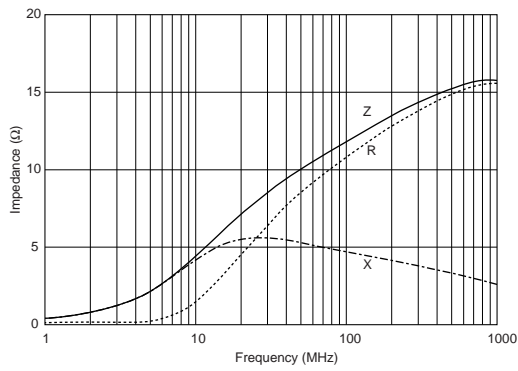
BLM15P Series (0402 Size)



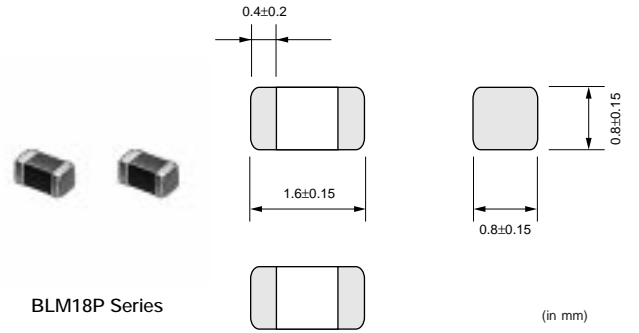
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15PG100SN1	10 (Typ.)	1000	0.05	-55 to +125

■ Impedance - Frequency Characteristics

BLM15PG100SN1



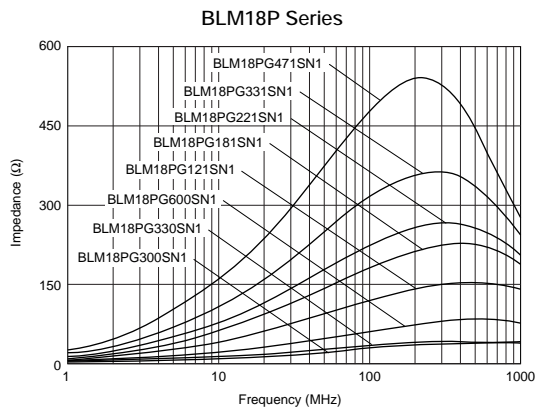
BLM18P Series (0603 Size)



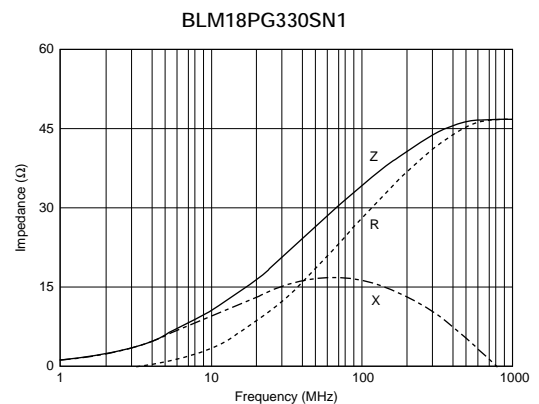
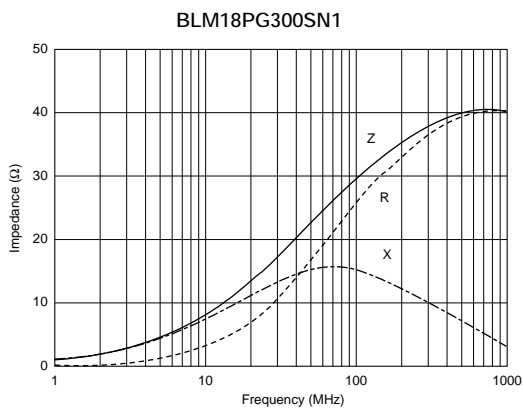
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18PG300SN1	30 (Typ.)	1000	0.05	-55 to +125
BLM18PG330SN1	33 ±25%	3000	0.025	-55 to +125
BLM18PG600SN1	60 (Typ.)	500	0.10	-55 to +125
BLM18PG121SN1	120 ±25%	2000	0.05	-55 to +125
BLM18PG181SN1	180 ±25%	1500	0.09	-55 to +125
BLM18PG221SN1	220 ±25%	1400	0.10	-55 to +125
BLM18PG331SN1	330 ±25%	1200	0.15	-55 to +125
BLM18PG471SN1	470 ±25%	1000	0.20	-55 to +125

At rated current higher than 1200mA, derating is required.
Please refer to p.63, "Derating of Rated Current".

■ Impedance - Frequency (Typical)



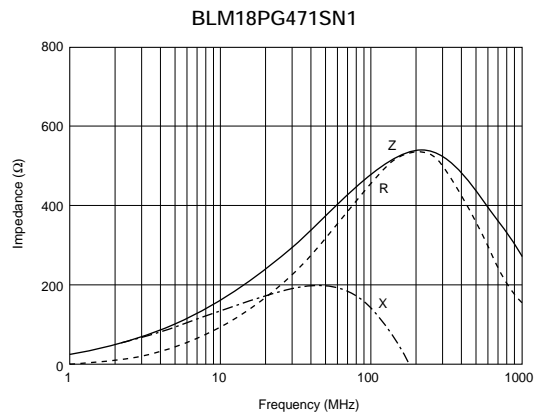
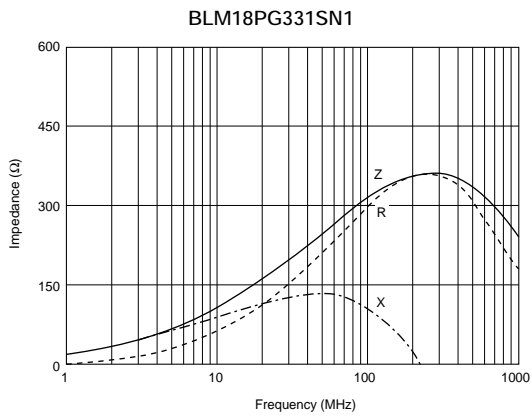
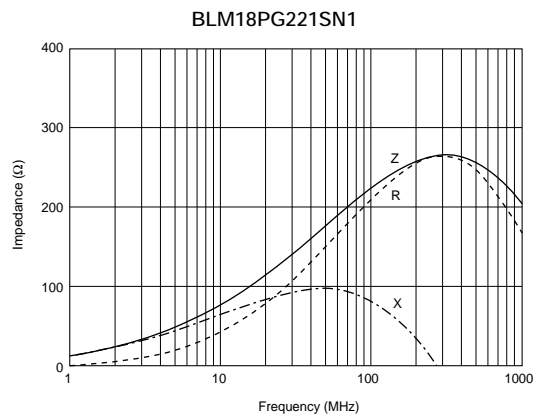
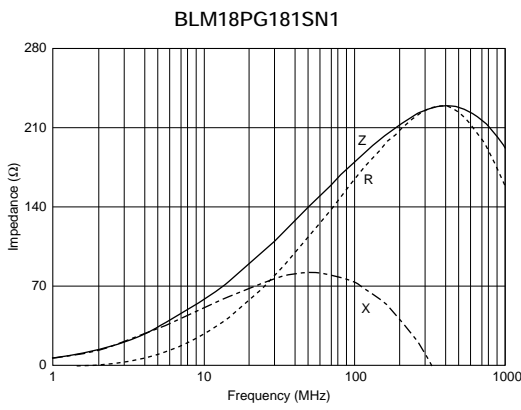
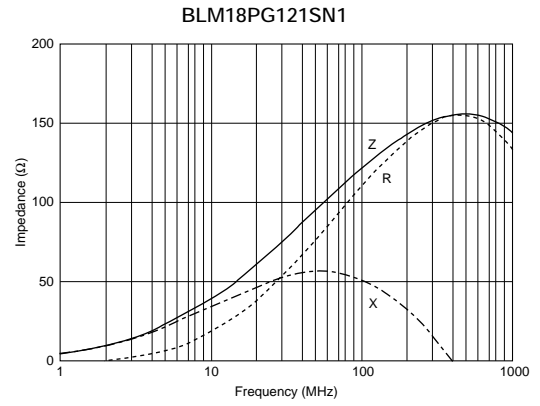
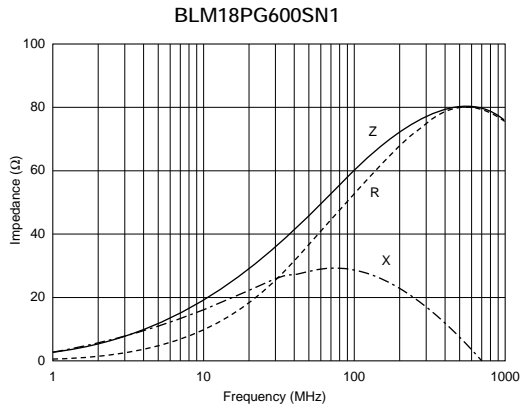
■ Impedance - Frequency Characteristics



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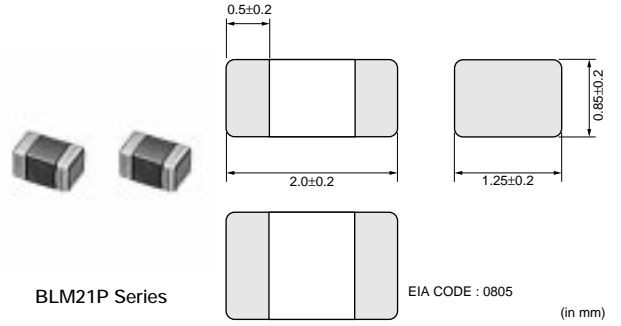
Continued from the preceding page.

Impedance - Frequency Characteristics



1

BLM21P Series (0805 Size)

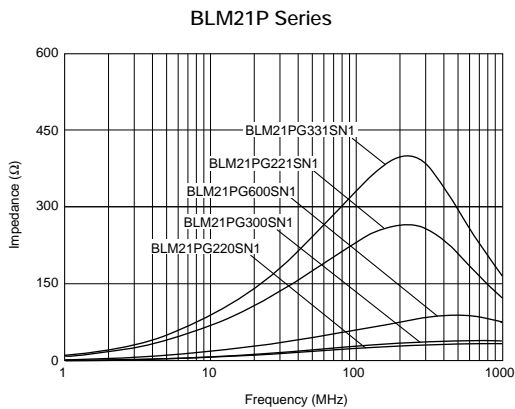


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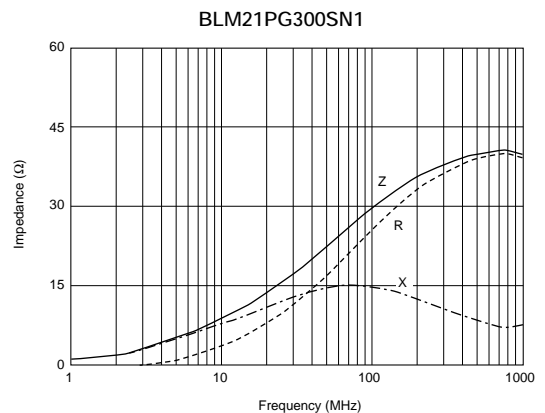
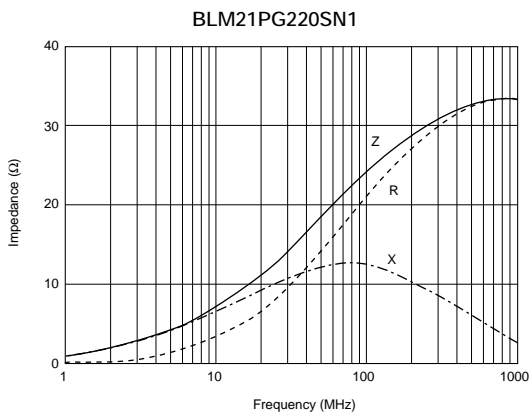
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM21PG220SN1	22 ±25%	6000	0.01	-55 to +125
BLM21PG300SN1	30 (Typ.)	3000	0.015	-55 to +125
BLM21PG600SN1	60 ±25%	3000	0.025	-55 to +125
BLM21PG221SN1	220 ±25%	2000	0.050	-55 to +125
BLM21PG331SN1	330 ±25%	1500	0.09	-55 to +125

At rated current higher than 1500mA, derating is required.
Please refer to p.63, "Derating of Rated Current".

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

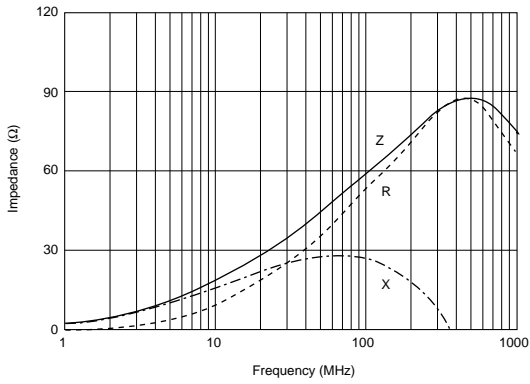


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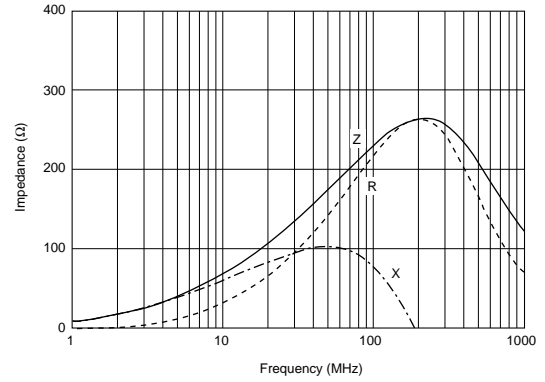
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■ Impedance - Frequency Characteristics

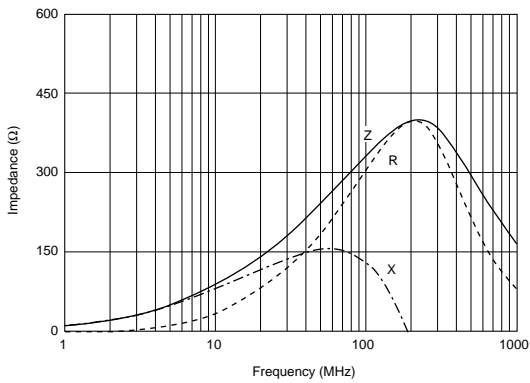
BLM21PG600SN1



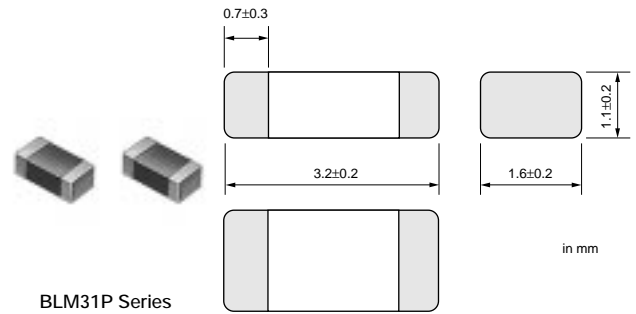
BLM21PG221SN1



BLM21PG331SN1



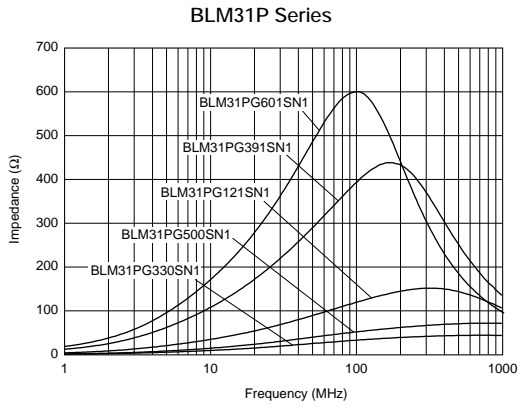
BLM31P Series (1206 Size)



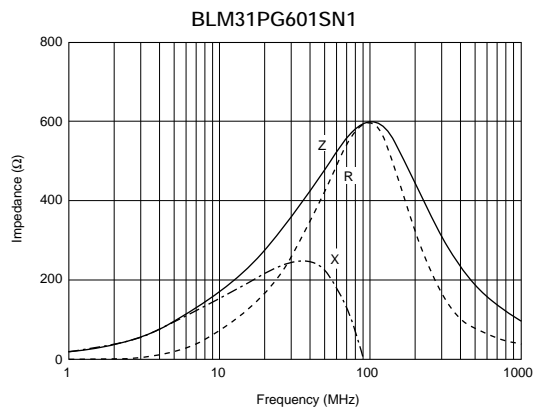
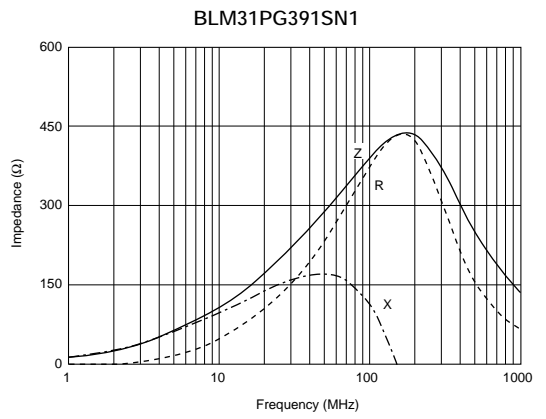
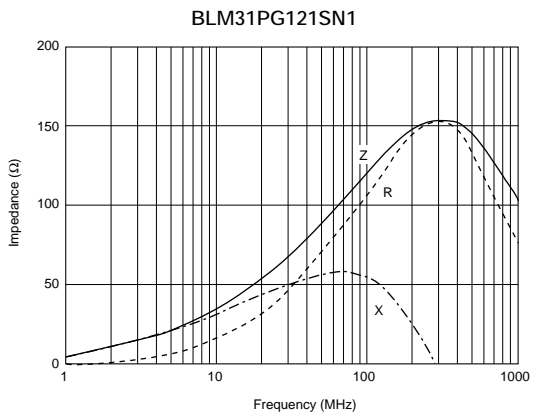
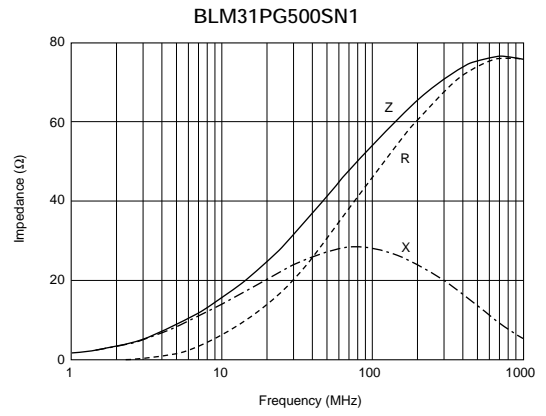
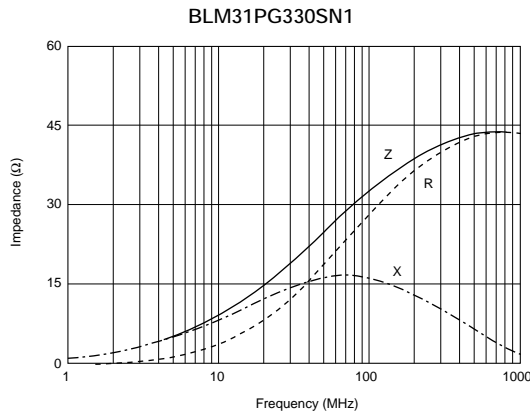
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM31PG330SN1	33 ±25%	6000	0.01	-55 to +125
BLM31PG500SN1	50 (Typ.)	3000	0.025	-55 to +125
BLM31PG121SN1	120 ±25%	3000	0.025	-55 to +125
BLM31PG391SN1	390 ±25%	2000	0.05	-55 to +125
BLM31PG601SN1	600 ±25%	1500	0.09	-55 to +125

At rated current higher than 1500mA, derating is required.
Please refer to p.63, "Derating of Rated Current".

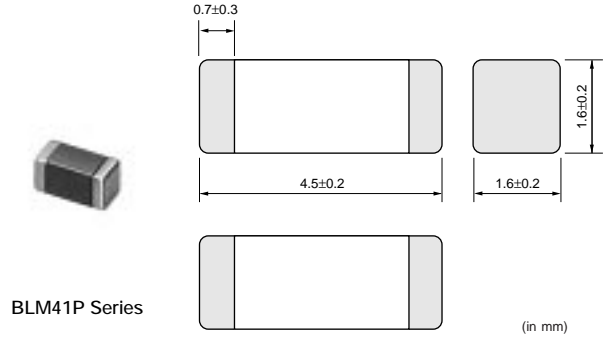
■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics



BLM41P Series (1806 Size)

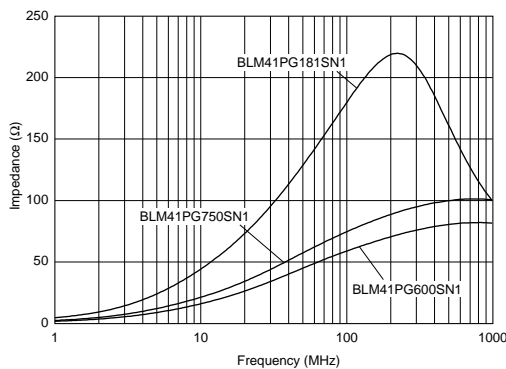


Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM41PG600SN1	60 (Typ.)	6000	0.01	-55 to +125
BLM41PG750SN1	75 (Typ.)	3000	0.025	-55 to +125
BLM41PG181SN1	180 ±25%	3000	0.025	-55 to +125
BLM41PG471SN1	470 ±25%	2000	0.05	-55 to +125
BLM41PG102SN1	1000 ±25%	1500	0.09	-55 to +125

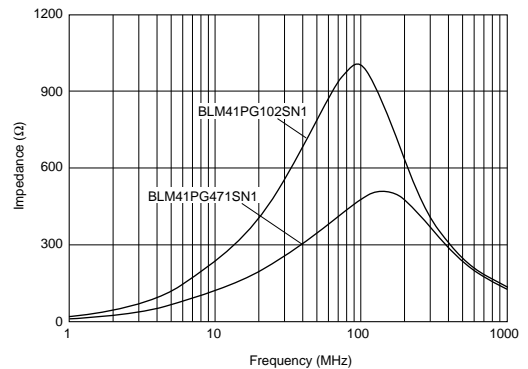
At rated current higher than 1500mA, derating is required.
Please refer to p.63, "Derating of Rated Current".

■ Impedance - Frequency (Typical)

BLM41P Series (60-180ohm)

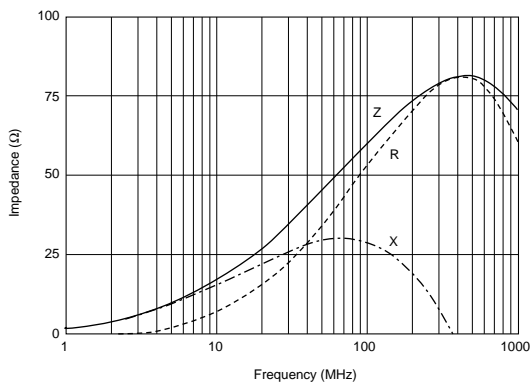


BLM41P Series (470-1000ohm)

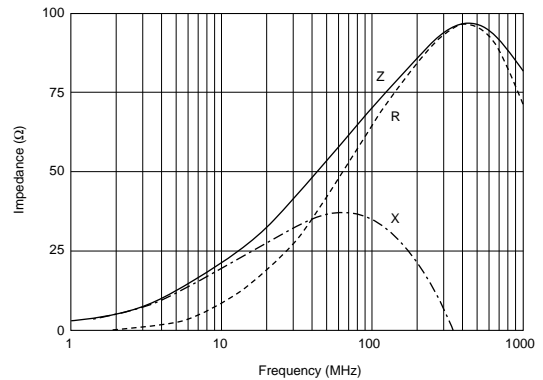


■ Impedance - Frequency Characteristics

BLM41PG600SN1



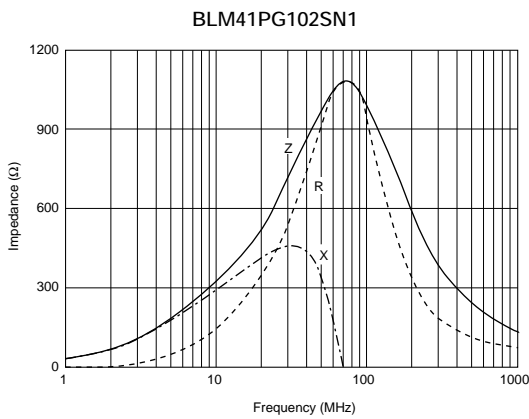
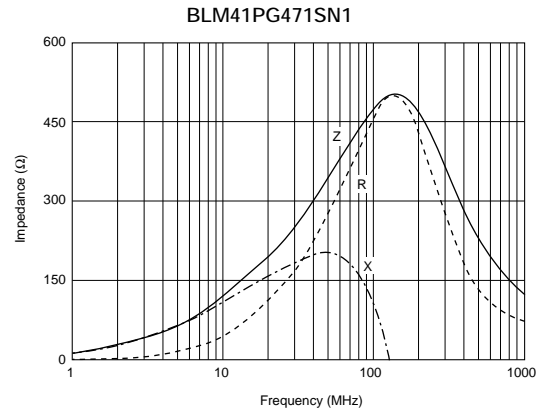
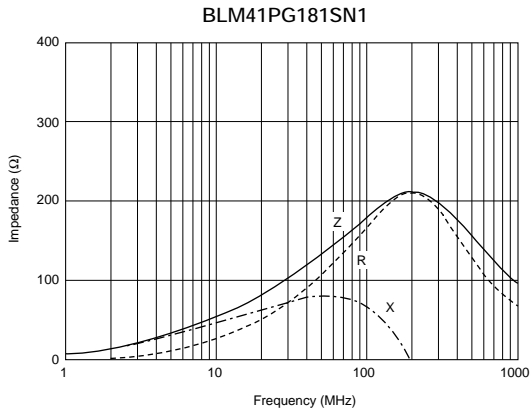
BLM41PG750SN1



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■ Impedance - Frequency Characteristics



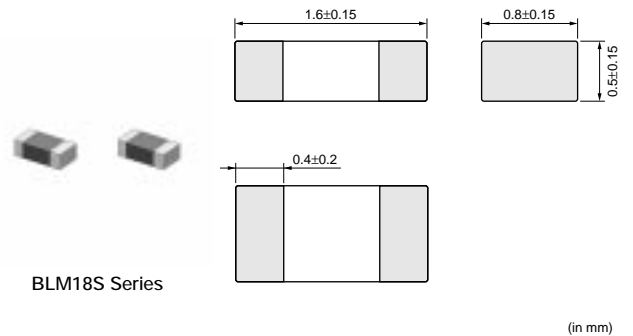
BLM18S Series (0603 Size)

■ Features

1. Low DC Resistance/Large Rated Current
2. BLM18S series can be used in high current circuits due to its low DC resistance.
It can match power lines to a maximum of 6A DC.
3. Ni+Sn plating structure of the external electrodes provides excellent solder heat resistance.

■ Applications

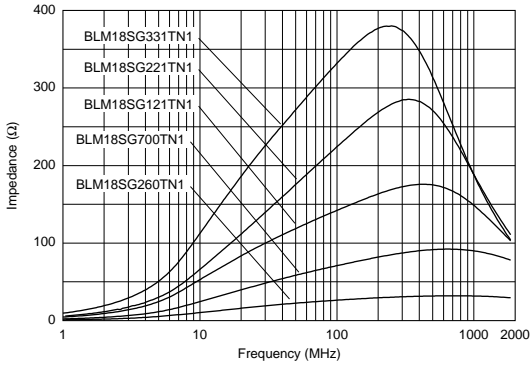
EMI suppression for DC power line



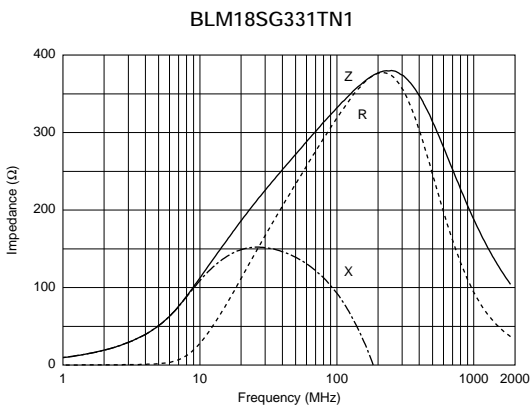
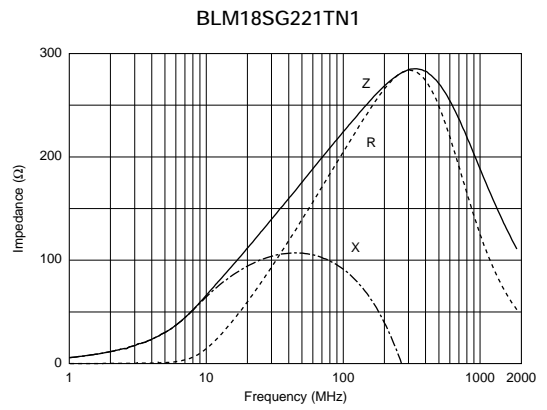
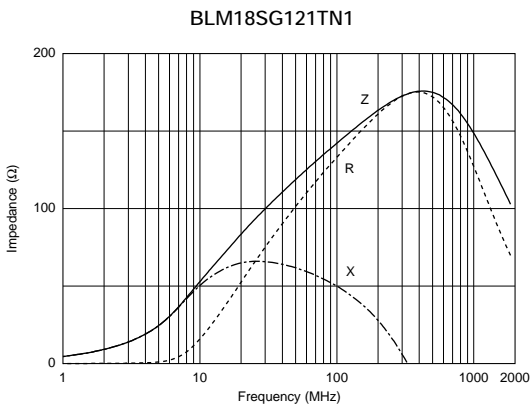
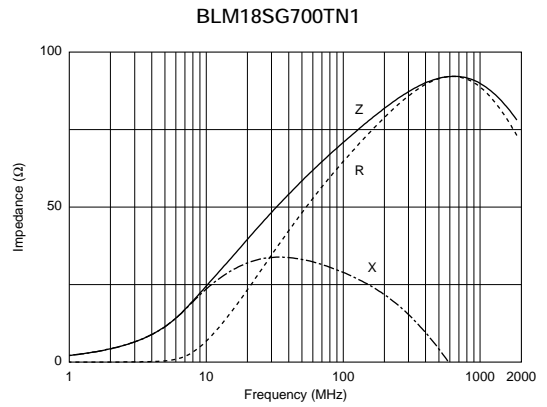
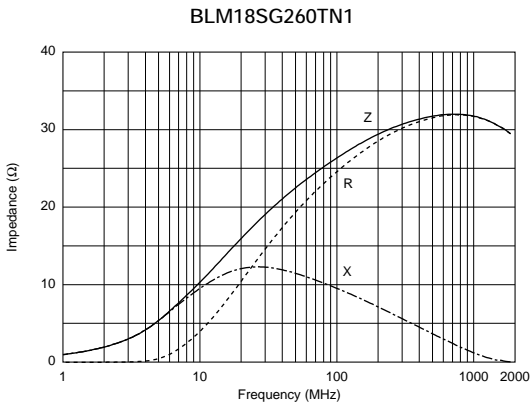
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18SG260TN1	26 ±25%	6000	0.007	-55 to +125
BLM18SG700TN1	70 ±25%	4000	0.020	-55 to +125
BLM18SG121TN1	120 ±25%	3000	0.025	-55 to +125
BLM18SG221TN1	220 ±25%	2500	0.040	-55 to +125
BLM18SG331TN1	330 ±25%	1500	0.070	-55 to +125

At rated current higher than 1500mA, derating is required.
Please refer to p.63, "Derating of Rated Current".

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

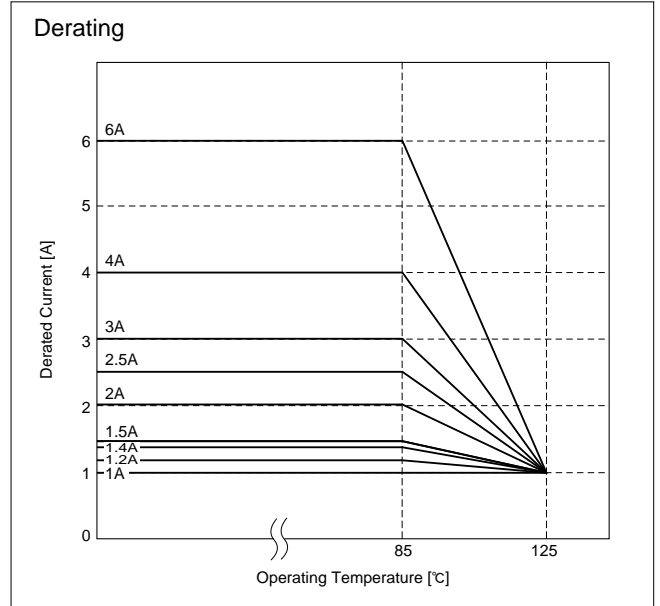


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Notice (Rating)

In operating temperatures exceeding +85°C, derating of current is necessary for chip Ferrite Beads for which rated current is 1200mA or over. Please apply the derating curve shown in chart according to the operating temperature.



On-Board Type (DC) EMI Suppression Filters (EMIFIL®)



GHz Noise Suppression Chip Ferrite Beads BLM15H/15E/18H/18E/18G Series

1

Excellent high frequency impedance characteristics with 0402 (EIA) size.

■ Equivalent Circuit

■ Features (BLM15HG/HD/EG Series)

1. Small size: 1.0x0.5mm (0402)
2. Suitable for noise suppression in 1GHz or higher frequency
3. Low DC Resistance/Large Rated Current (BLM15E)
4. No Lead production using Ni+Sn plating in termination

■ Applications

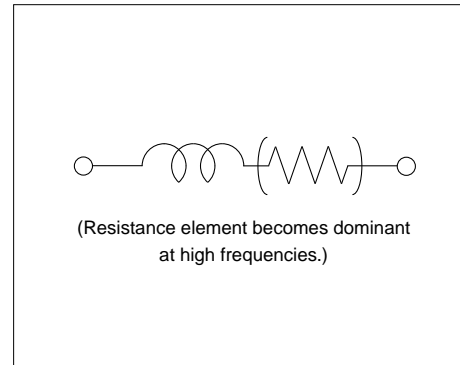
1. EMI suppression for Note PC and DSC
2. Noise suppression for data line in mobile phone
3. Prevention of erroneous operation caused by local oscillation signal in mobile phone
4. Optical pickup modules

■ Features (BLM15HB Series)

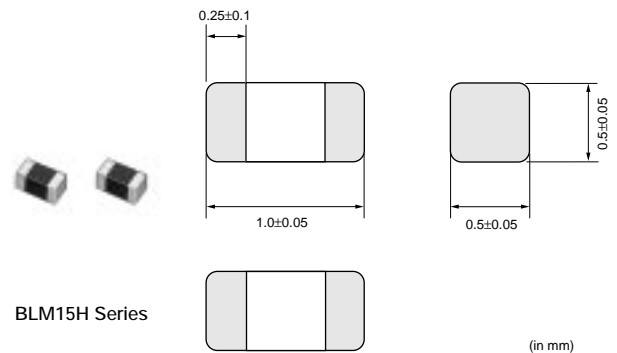
1. Small size: 1.0x0.5mm
2. Suitable for noise suppression in 1GHz or higher frequency
3. No Lead production using Ni+Sn plating in termination

■ Applications

1. EMI suppression for Note PC and DSC
2. Noise suppression for data line in mobile phone
3. Noise suppression for USB interface line in mobile phone
4. Prevention of erroneous operation caused by local oscillation signal in mobile phone



BLM15H Series (0402 Size)



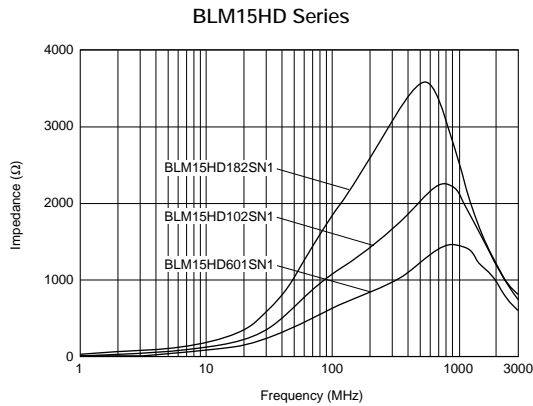
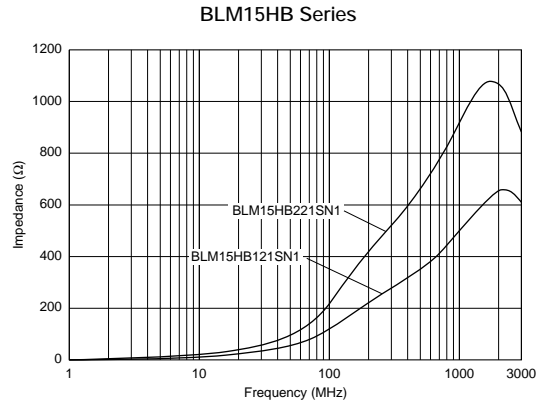
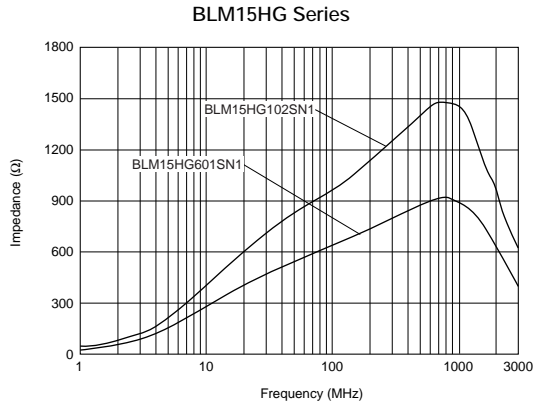
Part Number	Impedance (at 100MHz/20°C) (ohm)	Impedance (at 1GHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15HG601SN1	600 ±25%	1000 ±40%	300	0.7	-55 to +125
BLM15HG102SN1	1000 ±25%	1400 ±40%	250	1.1	-55 to +125
BLM15HB121SN1	120 ±25%	500 ±40%	300	0.7	-55 to +125

Continued on the following page.

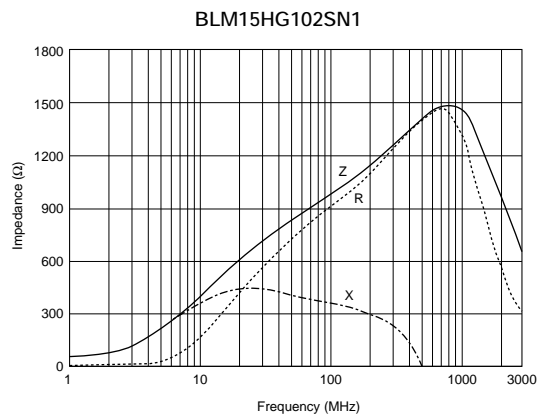
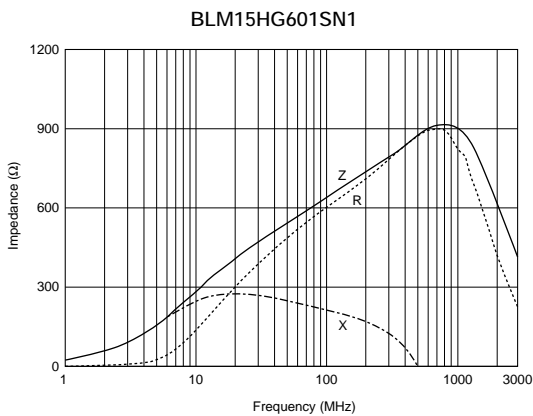
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Part Number	Impedance (at 100MHz/20°C) (ohm)	Impedance (at 1GHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15HB221SN1	220 ±25%	900 ±40%	250	1.0	-55 to +125
BLM15HD601SN1	600 ±25%	1400 ±40%	300	0.85	-55 to +125
BLM15HD102SN1	1000 ±25%	2000 ±40%	250	1.25	-55 to +125
BLM15HD182SN1	1800 ±25%	2700 ±40%	200	2.2	-55 to +125

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

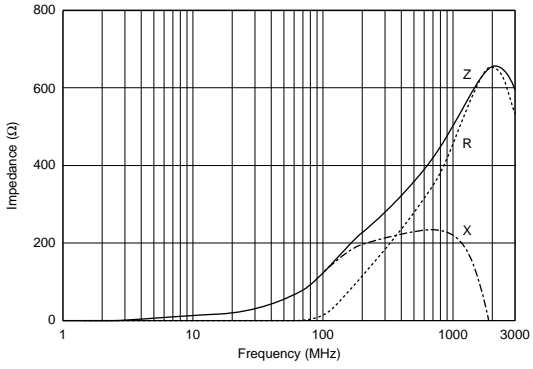


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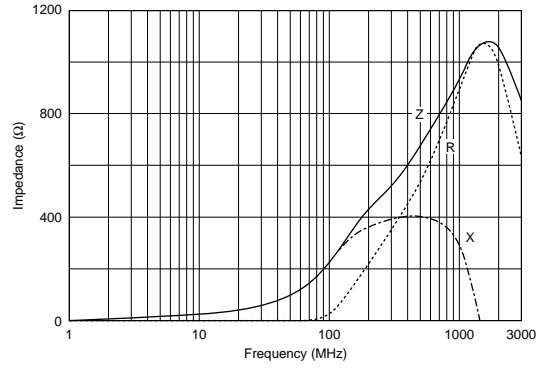
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Impedance - Frequency Characteristics

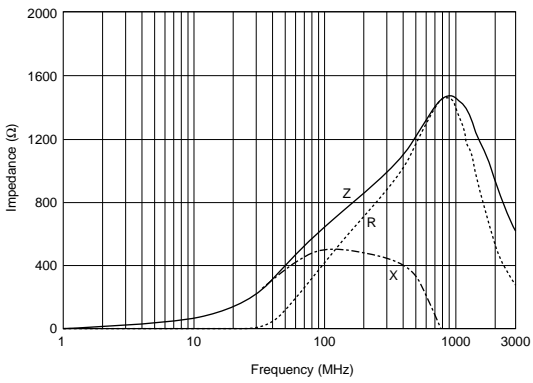
BLM15HB121SN1



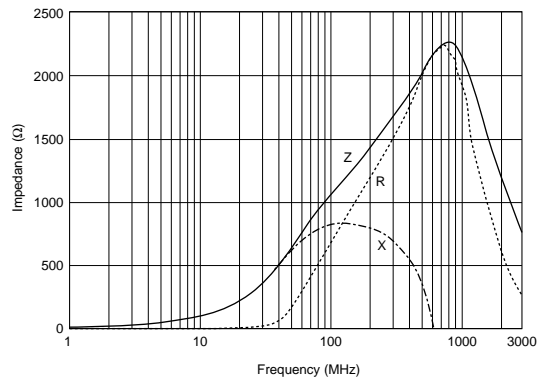
BLM15HB221SN1



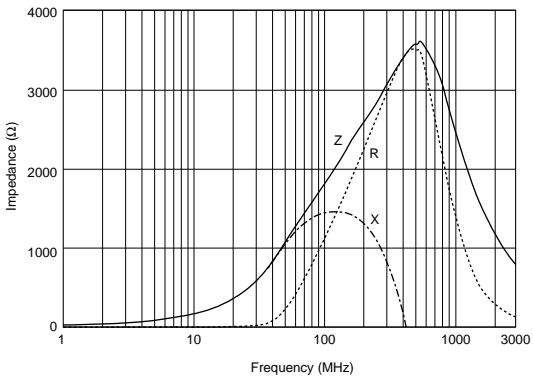
BLM15HD601SN1



BLM15HD102SN1

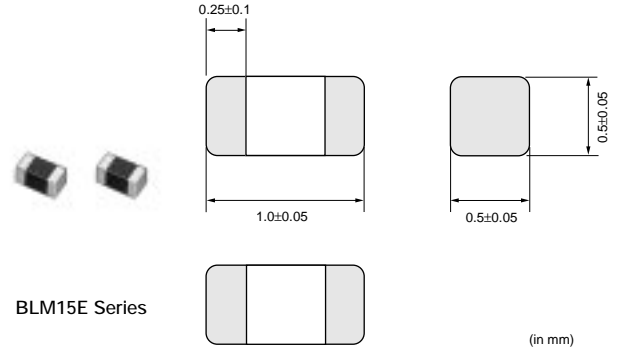


BLM15HD182SN1



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BLM15E Series (0402 Size)

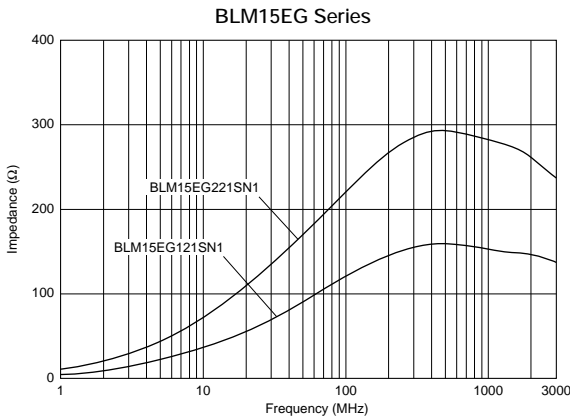


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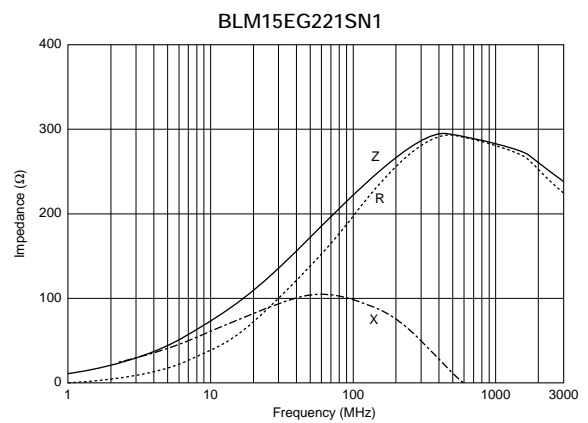
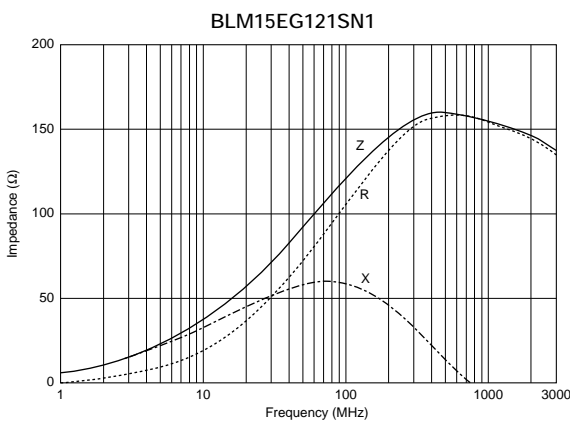
Part Number	Impedance (at 100MHz/20°C) (ohm)	Impedance (at 1GHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM15EG121SN1	120 ±25%	145 (Typ.)	1500	0.095	-55 to +125
BLM15EG221SN1	220 ±25%	270 (Typ.)	700	0.28	-55 to +125

In operating temperature exceeding +85°C, derating of current is necessary for BLM15E series. Please refer to p.68, "Derating of Rated Current".

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics



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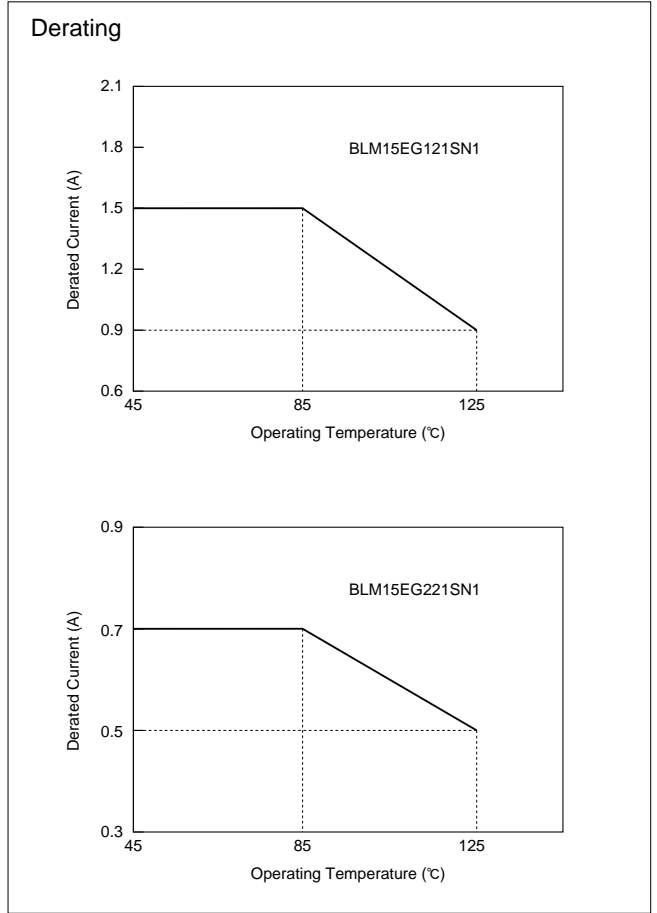
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■ Notice (Rating)

In operating temperature exceeding +85°C, derating of current is necessary for BLM15E series.

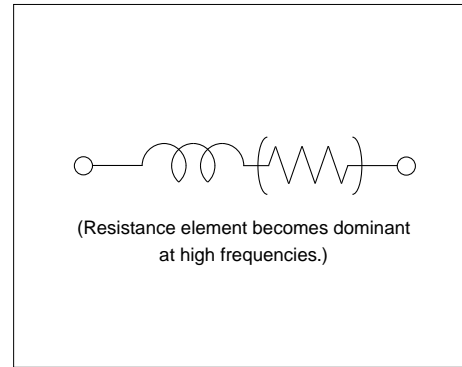
Please apply the derating curve shown in chart according to the operating temperature.

1



BLM18H/BLM18E series has a modified internal electrode structure, that minimizes stray capacitance and increases the effective frequency range.

■ Equivalent Circuit



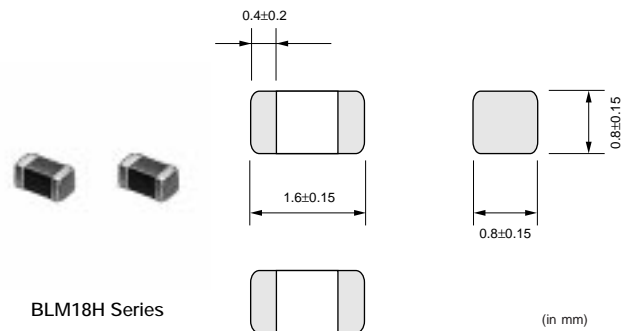
■ Features (BLM18H series)

1. BLM18H series realizes high impedance at 1GHz and is suitable for noise suppression from 500MHz to GHz range. The impedance value of HG/HD-type is about three times as large as that of A/B-type at 1GHz, though the impedance characteristic of HG/HD-type is similar to A/B-type at 100MHz or less.
2. HG-type is effective in noise suppression in wide frequency range (several MHz to several GHz). HB/HD-type for high-speed signal line provides a sharper roll-off after the cut-off frequency. HK-type for digital interface is effective in suppressing the ringing because resistance especially grows in the lower frequency.
3. The magnetic shielded structure minimizes crosstalk.

■ Features (BLM18E series)

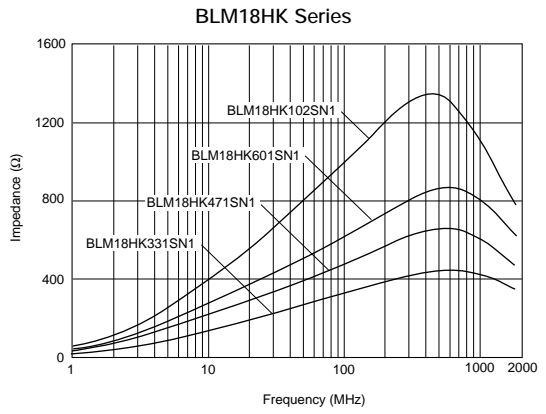
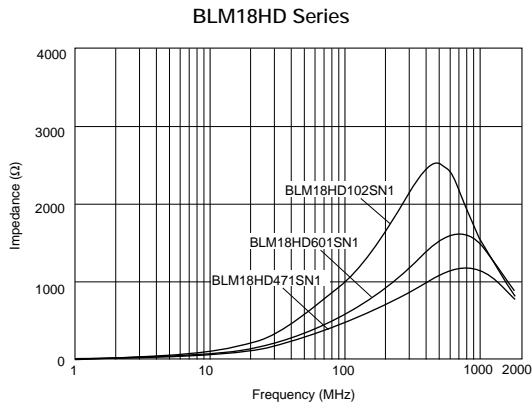
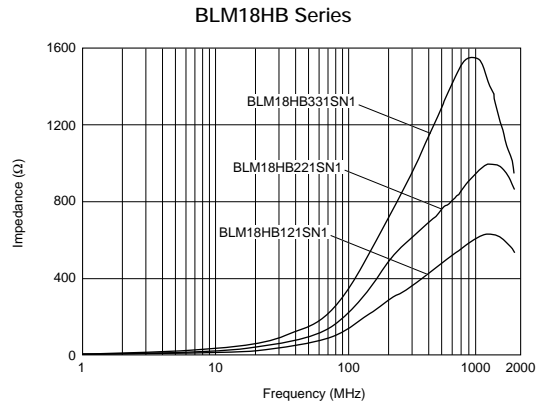
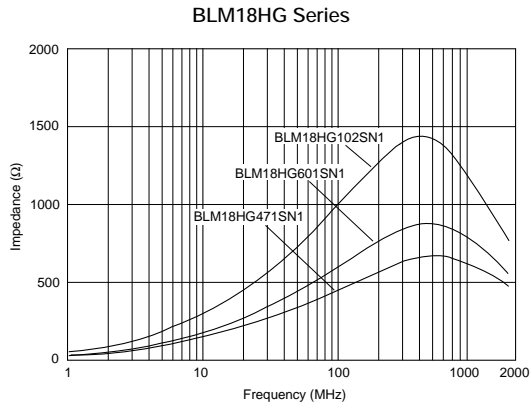
1. Low DC Resistance and a large Rated Current are suitable for noise suppression of the driver circuit.
2. Excellent direct current characteristics
3. Thin type (t=0.5mm) is suitable for small and low profile equipment such as DSC, cellular phones.

BLM18H Series (0603 Size)

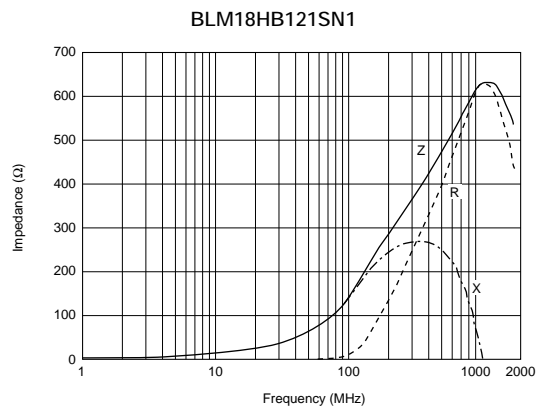
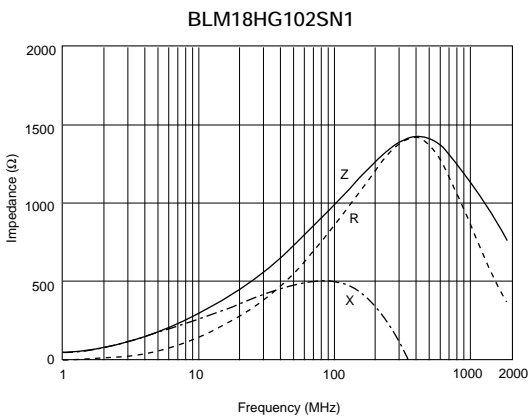
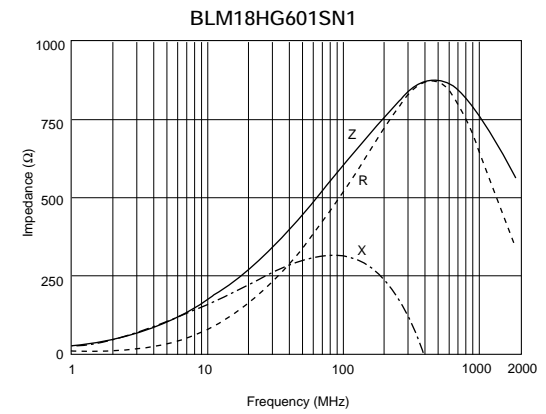
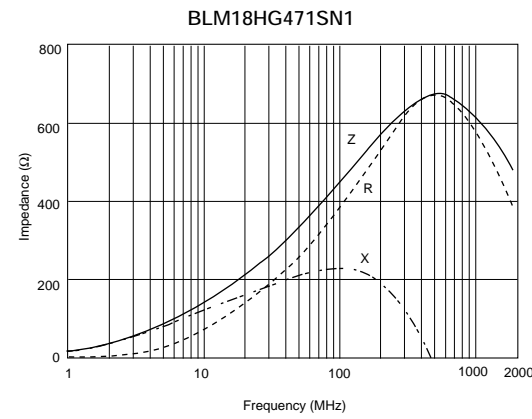


Part Number	Impedance (at 100MHz/20°C) (ohm)	Impedance (at 1GHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18HG471SN1	470 ±25%	600 (Typ.)	200	0.85	-55 to +125
BLM18HG601SN1	600 ±25%	700 (Typ.)	200	1.00	-55 to +125
BLM18HG102SN1	1000 ±25%	1000 (Typ.)	100	1.60	-55 to +125
BLM18HB121SN1	120 ±25%	500 ±40%	200	0.50	-55 to +125
BLM18HB221SN1	220 ±25%	1100 ±40%	100	0.80	-55 to +125
BLM18HB331SN1	330 ±25%	1600 ±40%	50	1.20	-55 to +125
BLM18HD471SN1	470 ±25%	1000 (Typ.)	100	1.20	-55 to +125
BLM18HD601SN1	600 ±25%	1200 (Typ.)	100	1.50	-55 to +125
BLM18HD102SN1	1000 ±25%	1700 (Typ.)	50	1.80	-55 to +125
BLM18HK331SN1	330 ±25%	400 ±40%	200	0.50	-55 to +125
BLM18HK471SN1	470 ±25%	600 ±40%	200	0.70	-55 to +125
BLM18HK601SN1	600 ±25%	700 ±40%	100	0.90	-55 to +125
BLM18HK102SN1	1000 ±25%	1200 ±40%	50	1.50	-55 to +125

■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

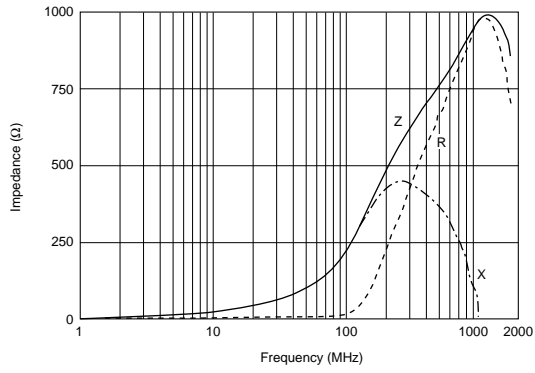


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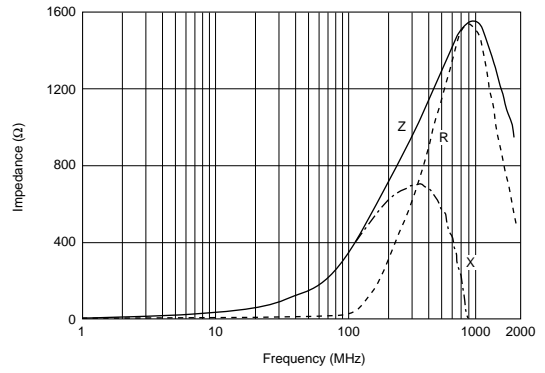
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Impedance - Frequency Characteristics

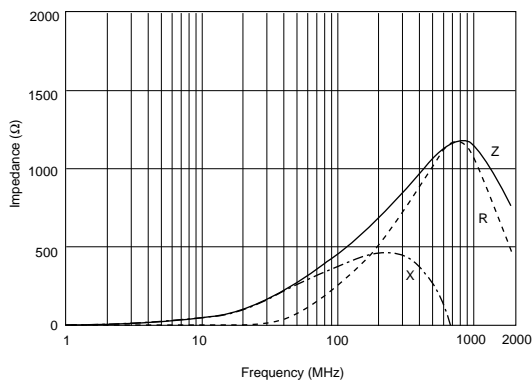
BLM18HB221SN1



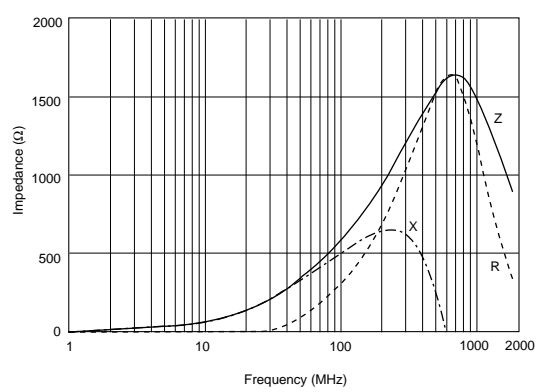
BLM18HB331SN1



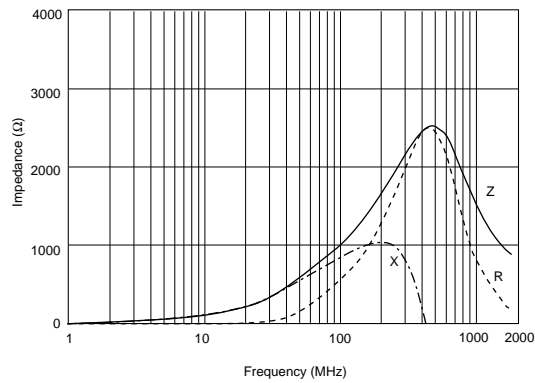
BLM18HD471SN1



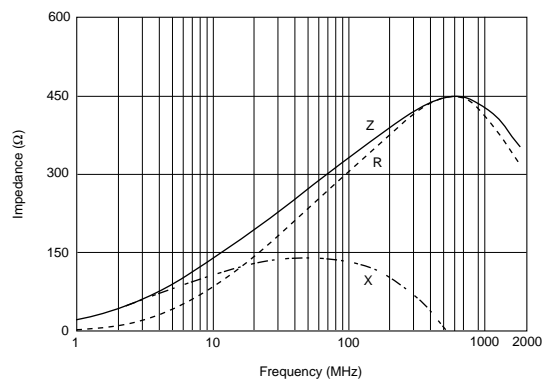
BLM18HD601SN1



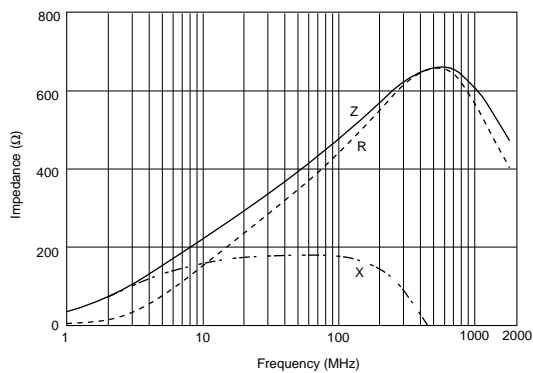
BLM18HD102SN1



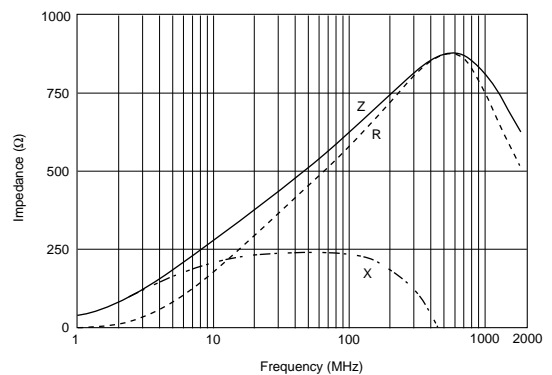
BLM18HK331SN1



BLM18HK471SN1



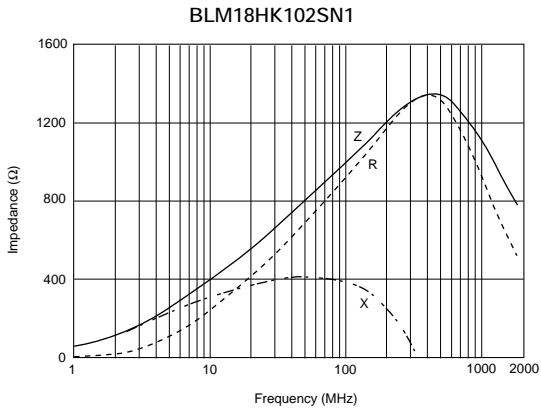
BLM18HK601SN1



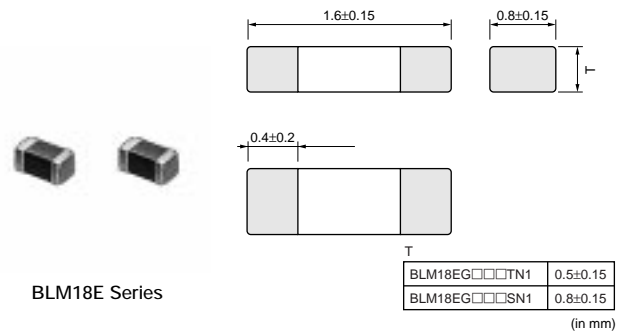
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Impedance - Frequency Characteristics



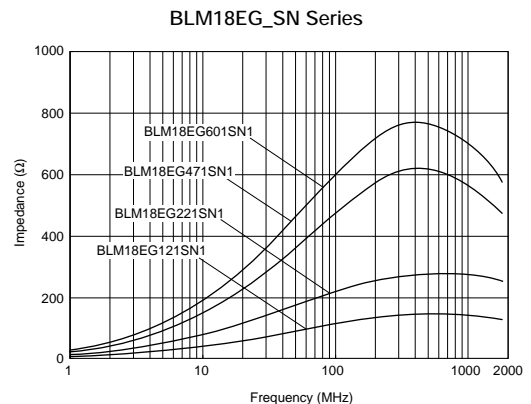
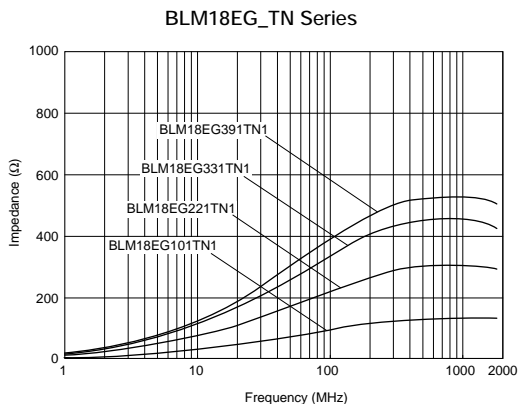
BLM18E Series (0603 Size)



Part Number	Impedance (at 100MHz/20°C) (ohm)	Impedance (at 1GHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18EG101TN1	100 ±25%	140 (Typ.)	2000	0.045	-55 to +125
BLM18EG121SN1	120 ±25%	145 (Typ.)	2000	0.04	-55 to +125
BLM18EG221SN1	220 ±25%	260 (Typ.)	2000	0.05	-55 to +125
BLM18EG221TN1	220 ±25%	300 (Typ.)	1000	0.15	-55 to +125
BLM18EG331TN1	330 ±25%	450 (Typ.)	500	0.21	-55 to +125
BLM18EG391TN1	390 ±25%	520 (Typ.)	500	0.3	-55 to +125
BLM18EG471SN1	470 ±25%	550 (Typ.)	500	0.21	-55 to +125
BLM18EG601SN1	600 ±25%	700 (Typ.)	500	0.35	-55 to +125

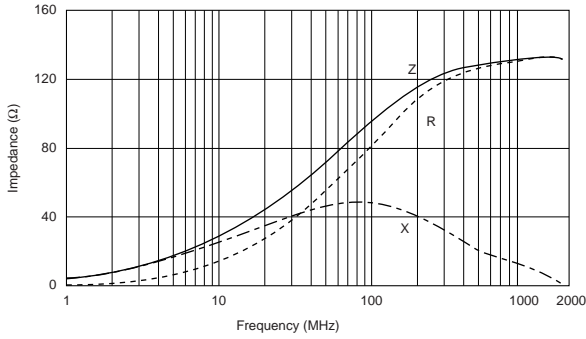
At rated current 2000mA, derating is required.
Please refer to p.74, "Derating of Rated Current".

Impedance - Frequency (Typical)

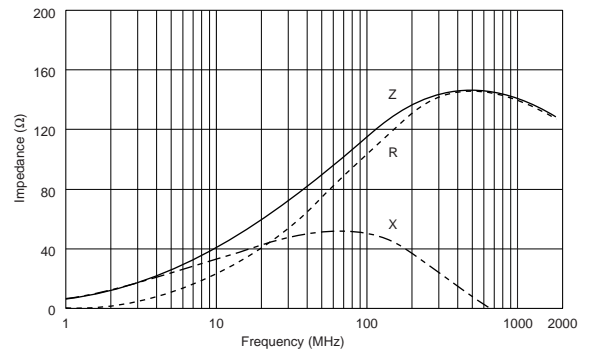


■ Impedance - Frequency Characteristics

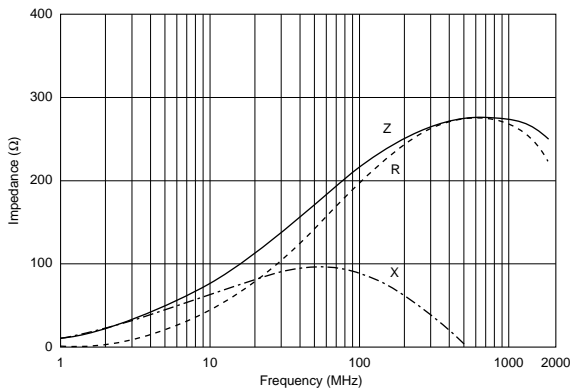
BLM18EG101TN1



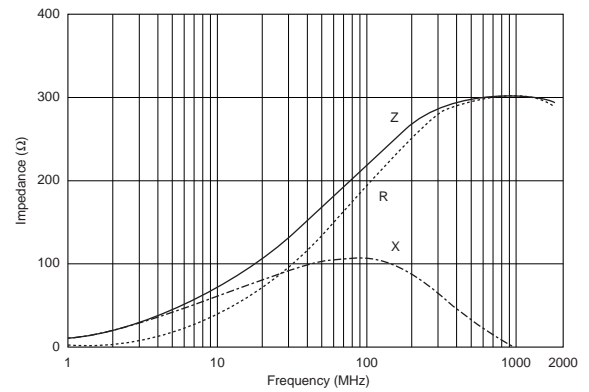
BLM18EG121SN1



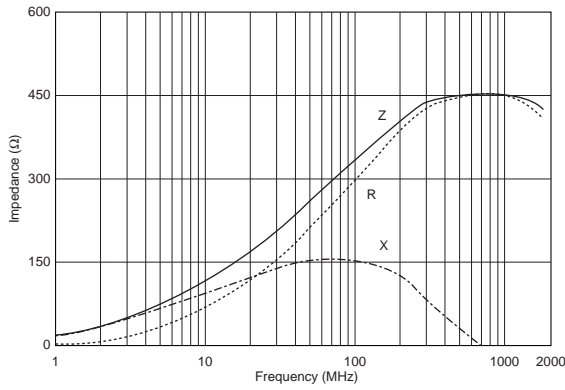
BLM18EG221SN1



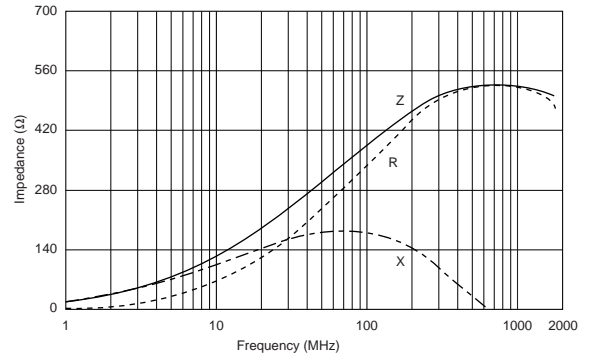
BLM18EG221TN1



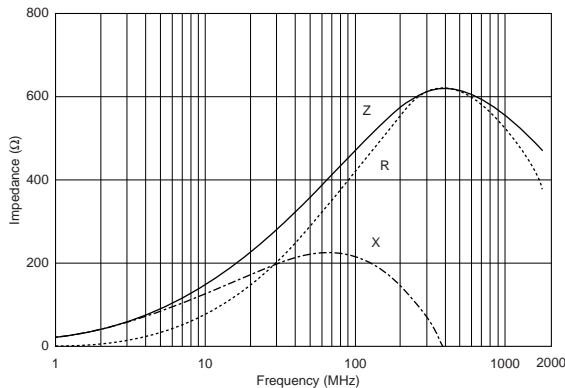
BLM18EG331TN1



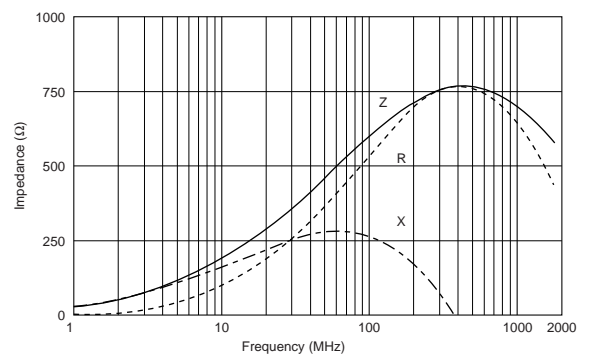
BLM18EG391TN1



BLM18EG471SN1



BLM18EG601SN1

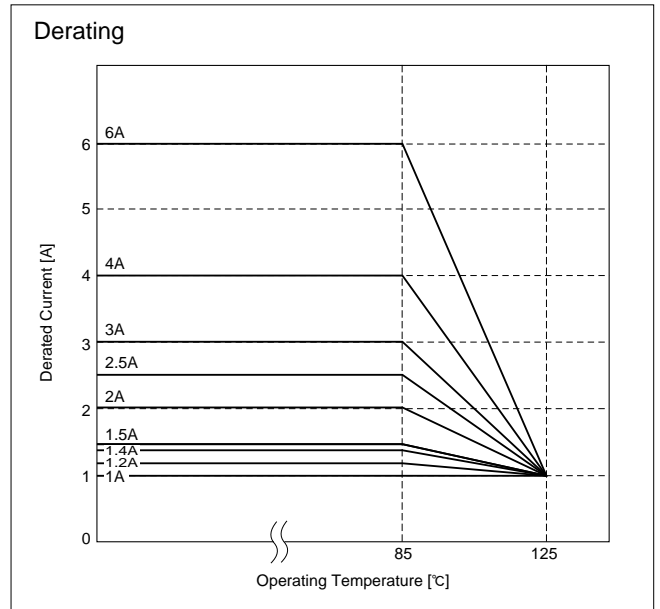


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Notice (Rating)

In operating temperatures exceeding +85°C, derating of current is necessary for chip Ferrite Beads for which rated current is 1200mA or over. Please apply the derating curve shown in chart according to the operating temperature.



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BLM18G Series (0603 Size)

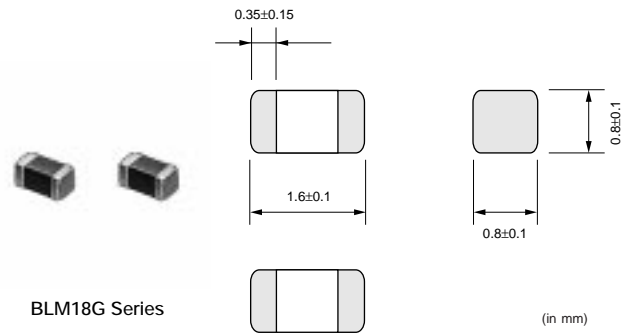
Chip ferrite beads for high frequency noise suppression over a wide frequency range.

Features

1. High impedance characteristic in 1GHz or higher frequency
2. High impedance characteristic over a wide frequency band range of 100MHz to 6GHz
3. Small decrease in impedance during current loading, resulting in small impedance fluctuation during equipment operation.
4. Reflow soldering only

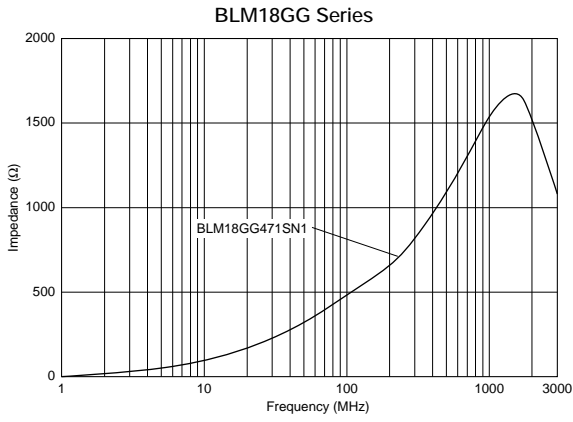
Applications

1. Noise suppression for PCs with high-speed CPU and high-speed bus, and for interface lines of peripheral equipment.
2. High harmonic noise suppression for digital equipment with several hundred MHz or higher clock speeds.
3. Prevention of erroneous operation caused by local oscillation signals in mobile phone and W-LAN module (ensuring self-immunity).
4. Bias Tee modules in optical transceivers

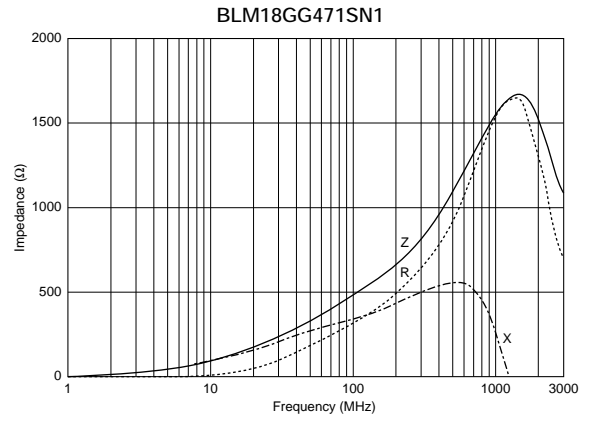


Part Number	Impedance (at 100MHz/20°C) (ohm)	Impedance (at 1GHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLM18GG471SN1	470 ±25%	1800 ±30%	200	1.30	-55 to +125

■ Impedance - Frequency (Typical)



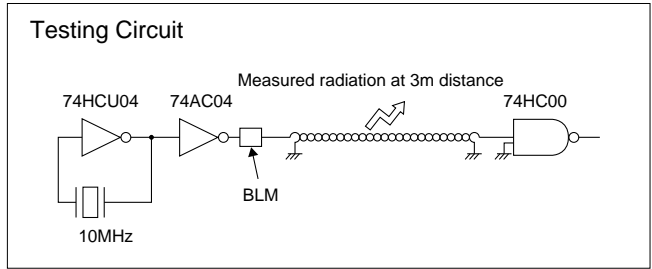
■ Impedance - Frequency Characteristics



1

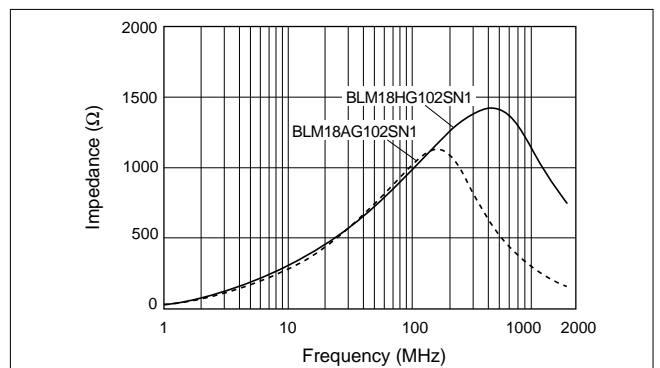
Noise Suppression Effect

Noise Suppression in UHF Range



Type of Filter	EMI Suppression Effect	Description
Initial (No filter)		
Conventional Type BLM18AG102SN1 (1000Ω at 100MHz)		Current BLM are effective in suppressing noise in the range between 300MHz and 700MHz.
for GHz Noise Suppression BLM18HG102SN1 (1000Ω at 100MHz)		In addition to the effectiveness of current BLM, BLM18HG suppresses noise in the range beyond 700MHz.

Comparison between BLM18HG102SN1 and BLM18AG102SN1 (Current Item)



On-Board Type (DC) EMI Suppression Filters (EMIFIL®)

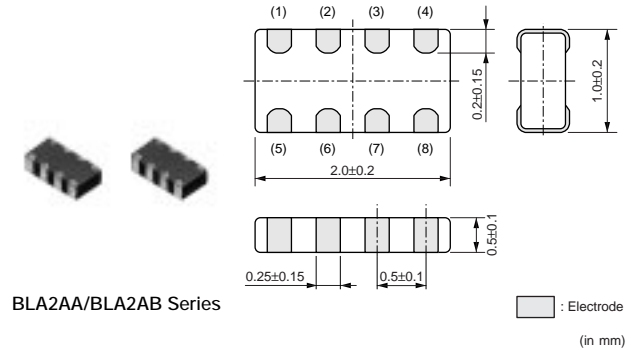


Chip Ferrite Beads Arrays BLA2AA/2AB/31A/31B Series

BLA2AA/BLA2AB Series

■ Features

1. BLA2AA/2AB series has 4 circuits in 2.0x1.0mm body with 0.5mm pitch.
2. Provides attenuation across a broad frequency range. Two types of impedance characteristics are available, one is for general signal line and the other is for high speed signal line.
3. Original inner electrode structure enables extra low crosstalk.
4. The nickel barrier structure of the external electrodes provides excellent solder heat resistance.



BLA2AA/BLA2AB Series

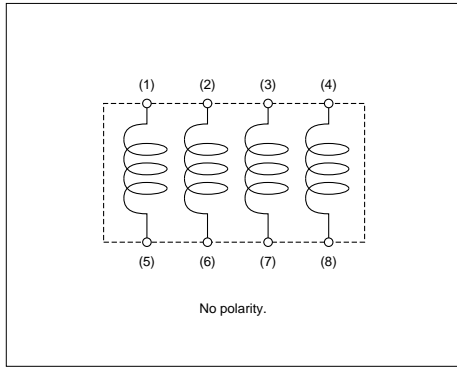
■ Applications

Notebook size PCs, PDAs and other compact size digital equipment

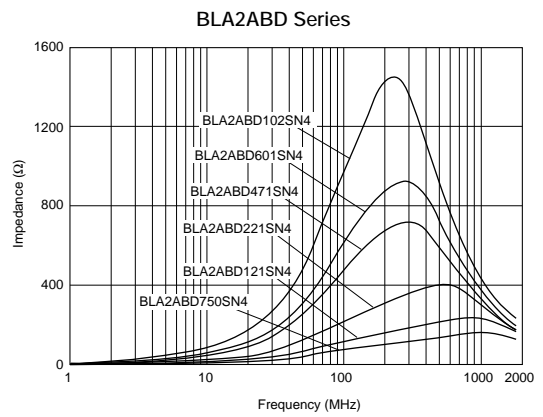
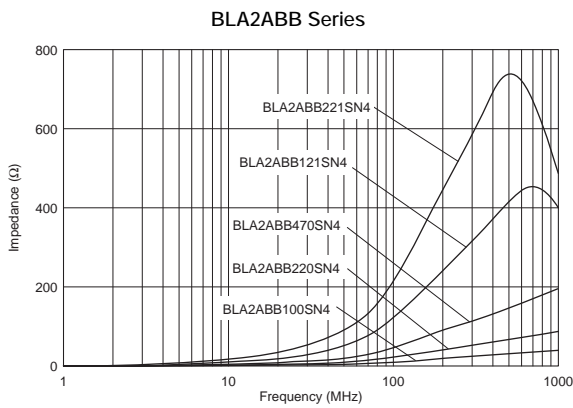
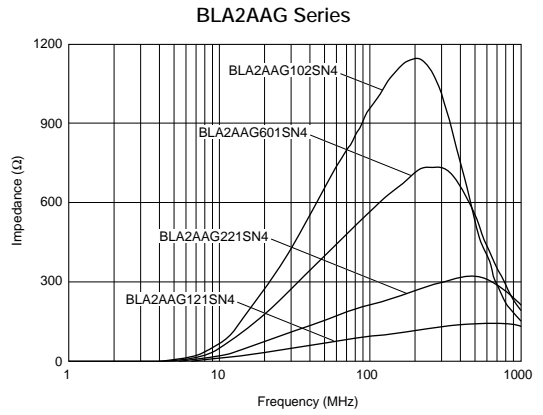
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLA2AAG121SN4	120 ±25%	100	0.50	-55 to +125
BLA2AAG221SN4	220 ±25%	50	0.70	-55 to +125
BLA2AAG601SN4	600 ±25%	50	1.10	-55 to +125
BLA2AAG102SN4	1000 ±25%	50	1.30	-55 to +125
BLA2ABB100SN4	10 ±25%	200	0.1	-55 to +125
BLA2ABB220SN4	22 ±25%	200	0.2	-55 to +125
BLA2ABB470SN4	47 ±25%	200	0.35	-55 to +125
BLA2ABB121SN4	120 ±25%	50	0.60	-55 to +125
BLA2ABB221SN4	220 ±25%	50	0.90	-55 to +125
BLA2ABD750SN4	75 ±25%	200	0.20	-55 to +125
BLA2ABD121SN4	120 ±25%	200	0.35	-55 to +125
BLA2ABD221SN4	220 ±25%	100	0.40	-55 to +125
BLA2ABD471SN4	470 ±25%	100	0.65	-55 to +125
BLA2ABD601SN4	600 ±25%	100	0.80	-55 to +125
BLA2ABD102SN4	1000 ±25%	50	1.00	-55 to +125

Number of Circuits: 4

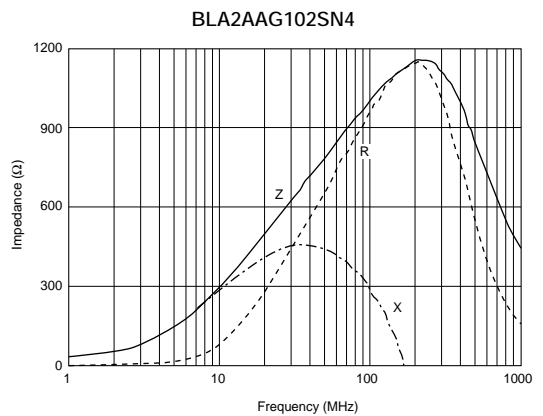
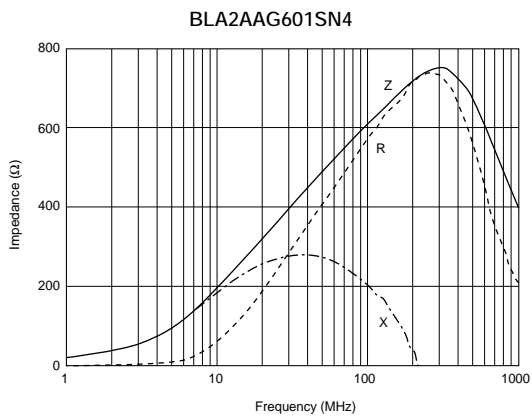
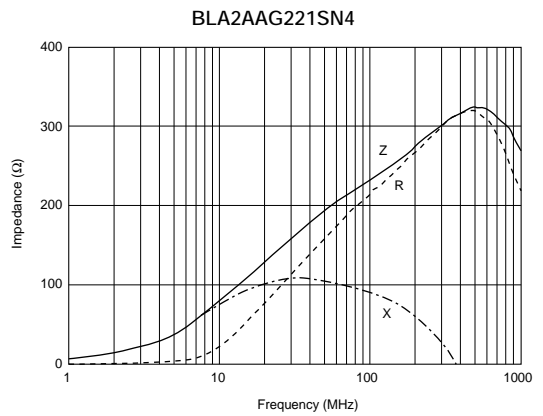
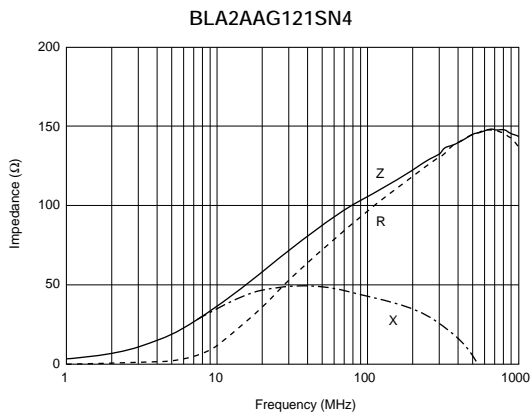
■ Equivalent Circuit



■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

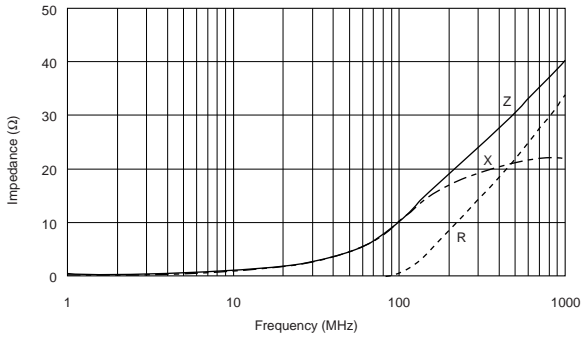


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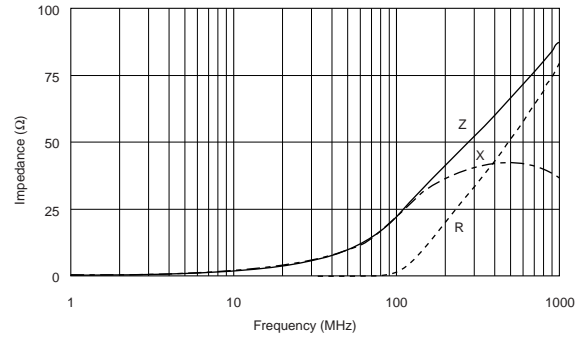
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Impedance - Frequency Characteristics

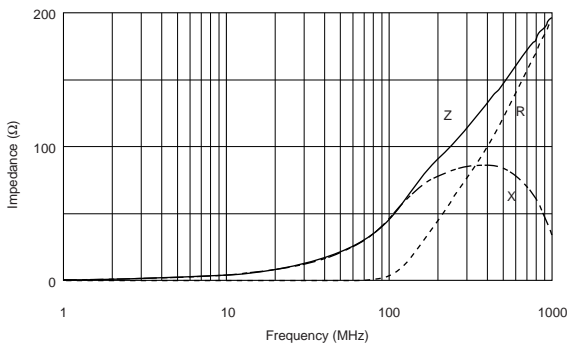
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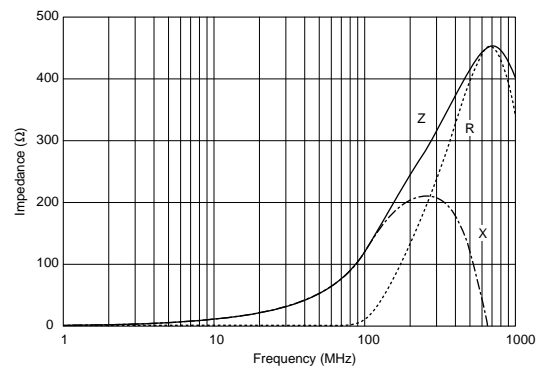
BLA2ABB220SN4



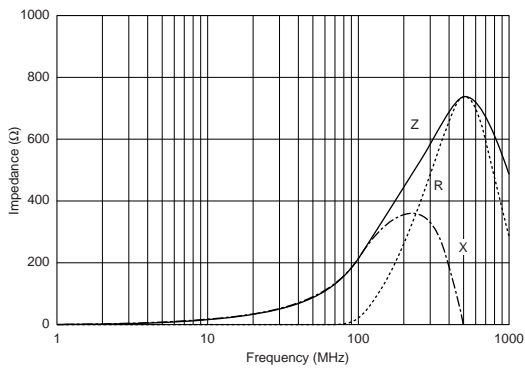
BLA2ABB470SN4



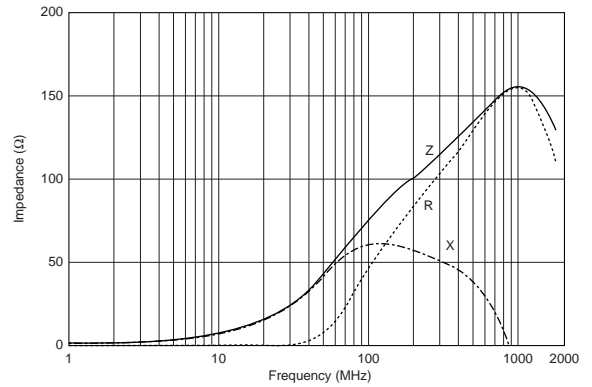
BLA2ABB121SN4



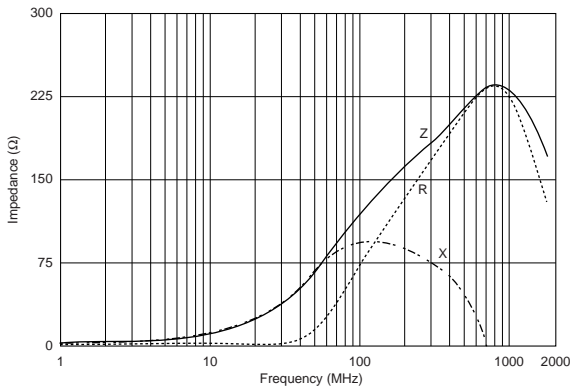
BLA2ABB221SN4



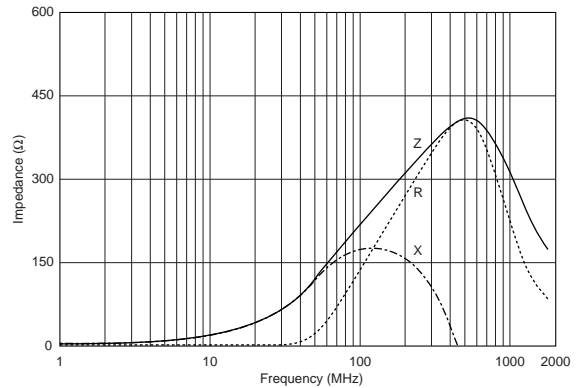
BLA2ABD750SN4



BLA2ABD121SN4



BLA2ABD221SN4

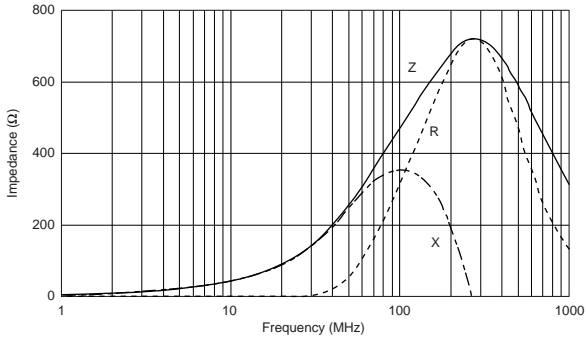


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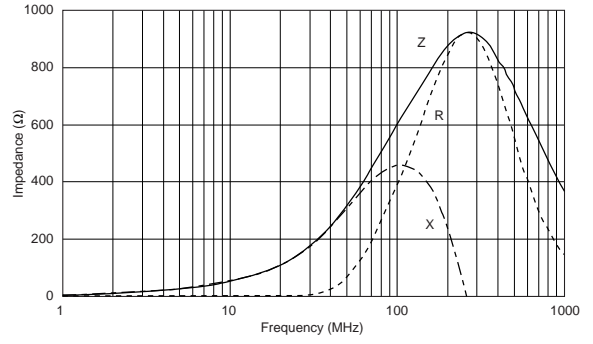
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■ Impedance - Frequency Characteristics

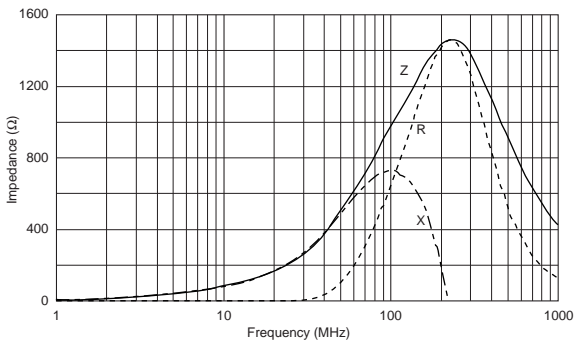
BLA2ABD471SN4



BLA2ABD601SN4



BLA2ABD102SN4



1

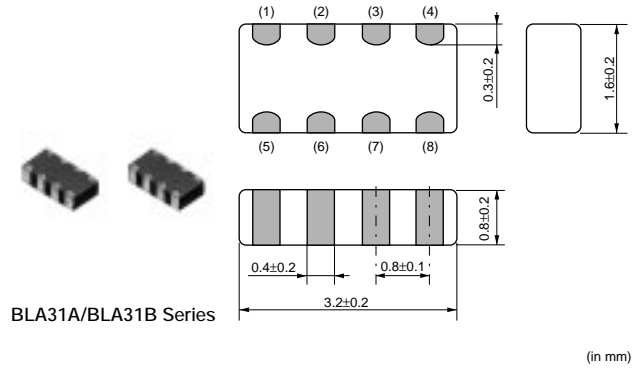
BLA31A/BLA31B Series

The miniaturization of electronic equipment requires high performance EMI filters which enable high density mounting. BLA31A/B series consists of 4 circuits of ferrite beads.

BLA31A/B is suitable for EMI suppression in smaller digital equipment.

■ Features

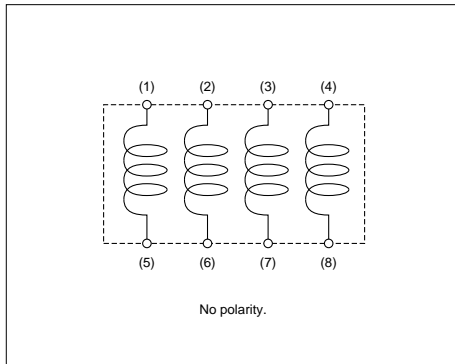
1. BLA31A/B has 4 circuits in 3.2x1.6mm body with 0.8mm pitch.
2. Provides attenuation across a broad frequency range. Two types of impedance are available which meet general signal line and high speed signal line.
3. Original inner electrode structure enables extra low crosstalk.
4. The nickel barrier structure of the external electrodes provides excellent solder heat resistance. Both flow and reflow soldering methods can be employed.



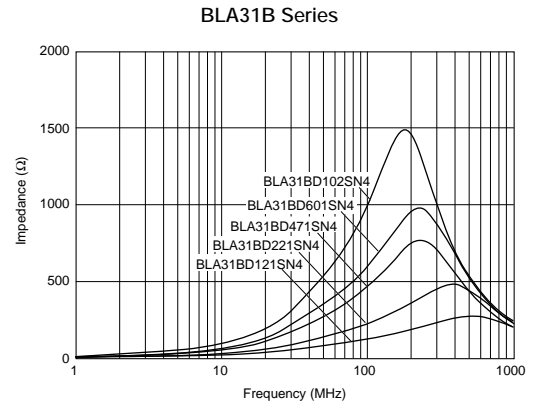
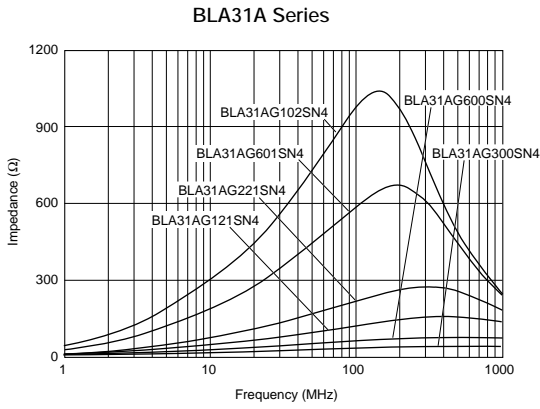
Part Number	Impedance (at 100MHz/20°C) (ohm)	Rated Current (mA)	DC Resistance (max.) (ohm)	Operating Temperature Range (°C)
BLA31AG300SN4	30 ±25%	200	0.10	-55 to +125
BLA31AG600SN4	60 ±25%	200	0.15	-55 to +125
BLA31AG121SN4	120 ±25%	150	0.20	-55 to +125
BLA31AG221SN4	220 ±25%	150	0.25	-55 to +125
BLA31AG601SN4	600 ±25%	100	0.35	-55 to +125
BLA31AG102SN4	1000 ±25%	50	0.45	-55 to +125
BLA31BD121SN4	120 ±25%	150	0.30	-55 to +125
BLA31BD221SN4	220 ±25%	150	0.35	-55 to +125
BLA31BD471SN4	470 ±25%	100	0.40	-55 to +125
BLA31BD601SN4	600 ±25%	100	0.45	-55 to +125
BLA31BD102SN4	1000 ±25%	50	0.55	-55 to +125

Number of Circuits: 4

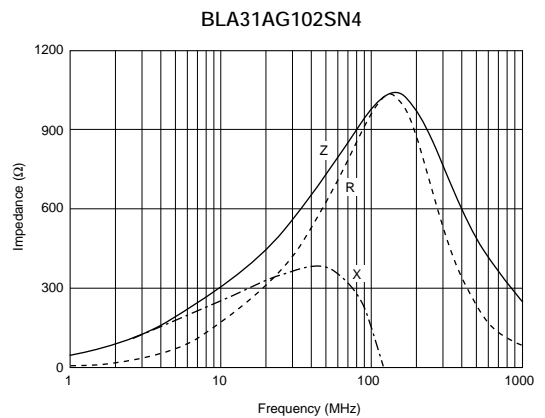
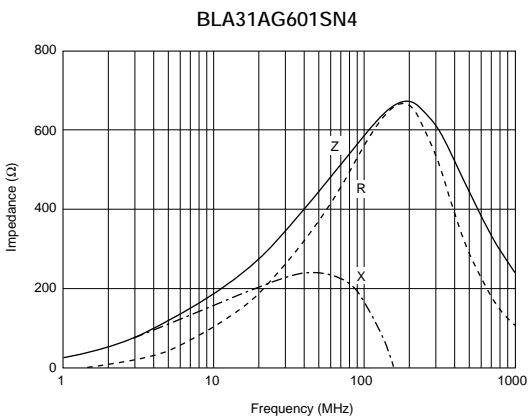
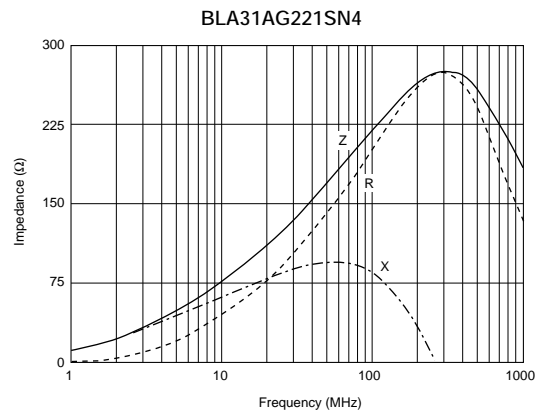
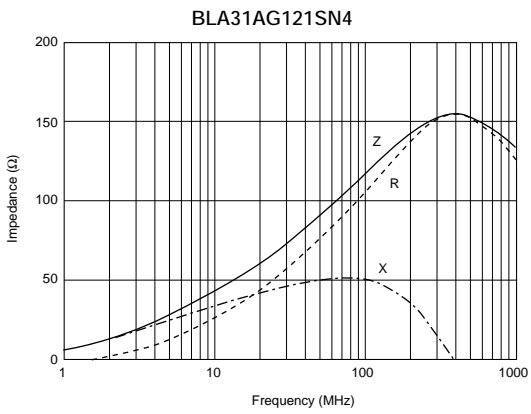
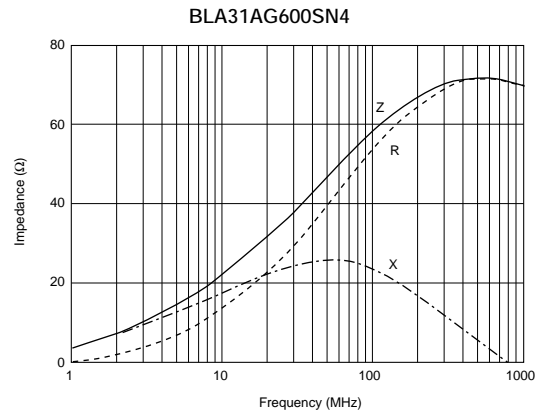
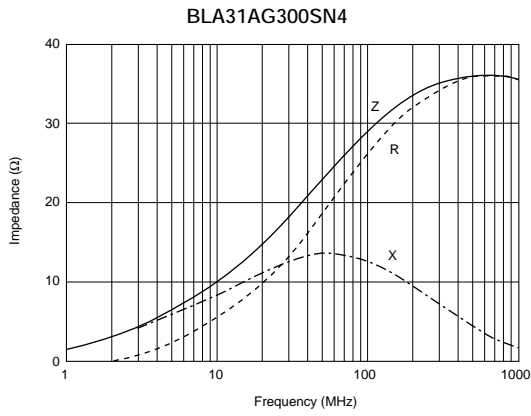
■ Equivalent Circuit



■ Impedance - Frequency (Typical)



■ Impedance - Frequency Characteristics

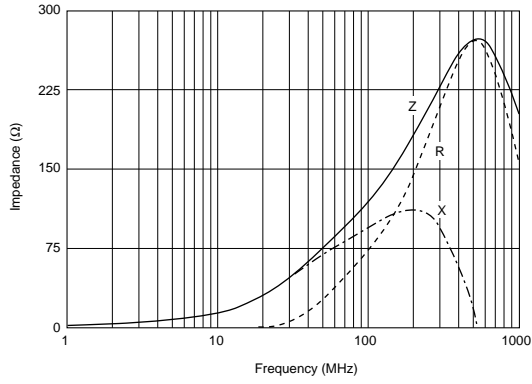


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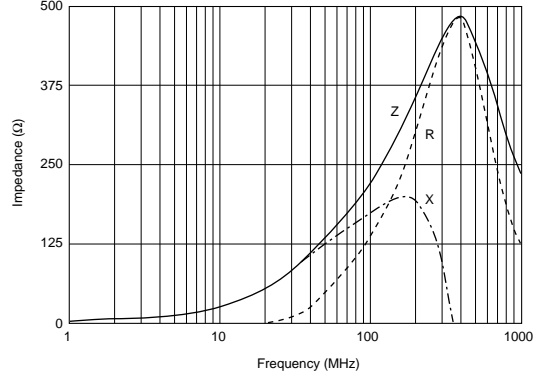
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Impedance - Frequency Characteristics

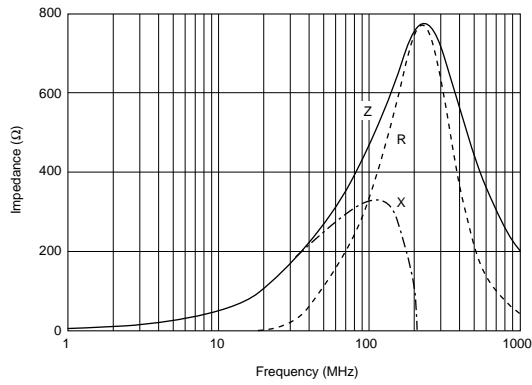
BLA31BD121SN4



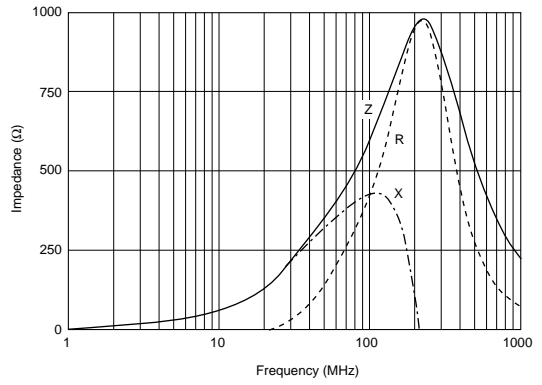
BLA31BD221SN4



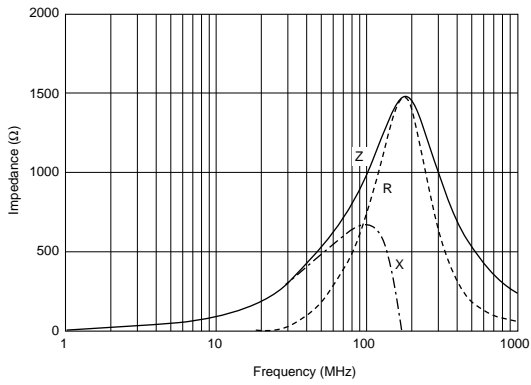
BLA31BD471SN4



BLA31BD601SN4



BLA31BD102SN4



1

On-Board Type (DC) EMI Suppression Filters (EMIFIL®)



Chip EMIFIL® Part Numbering

Chip EMIFIL® Capacitor Type/Capacitor Array Type

(Part Number)

NF	M	3D	CC	102	R	1H	3	L
①	②	③	④	⑤	⑥	⑦	⑧	⑨

① Product ID

Product ID	
NF	Chip EMIFIL®

② Structure

Code	Structure
M	Capacitor Type
A	Capacitor Array Type

③ Dimensions (L×W)

Code	Dimensions (L×W)	EIA
18	1.6×0.8mm	0603
21	2.0×1.25mm	0805
3D	3.2×1.25mm	1205
31	3.2×1.6mm	1206
41	4.5×1.6mm	1806
55	5.7×5.0mm	2220

④ Features

Code	Features
CC	Capacitor Type for Signal Lines
PC	Capacitor Type for Large Current
PS	High Loss Type for Large Current

⑤ Capacitance

Expressed by three figures. The unit is in pico-farad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures.

⑨ Packaging

Code	Packaging	Series
L	Embossed Taping (ø180mm Reel)	NFM3D/NFM41/NFM55
B	Bulk	All series
D	Paper Taping (ø180mm Reel)	NFM18/NFM21/NFA□□CC

⑥ Characteristics

Code	Capacitance Change (Temperature Characteristics)
B	±10%
F	+30/-80%
R	±15%
U	-750 ±120ppm/°C
S	+350 to -1000ppm/°C

⑦ Rated Voltage

Code	Rated Voltage
0J	6.3V
1A	10V
1C	16V
1E	25V
1H	50V
2A	100V

⑧ Electrode/Others (NFM Series)

Code	Electrode	Series
3	Sn Plating	NFM (Except NFM55)
4	Solder Coating	NFM55

⑩ Number of Circuits (NFA□□CC Series)

Code	Number of Circuits
4	4 Circuits

2

Chip EMIFIL® LC Combined Type

(Part Number)

NF	L	18	ST	107	X	1C	3	L
①	②	③	④	⑤	⑥	⑦	⑧	⑨

① Product ID

Product ID	
NF	Chip EMIFIL®

② Structure

Code	Structure
L	Monolithic, LC Combined Type
W	Winding, LC Combined Type
E	Block, LC Combined Type

③ Dimensions (L×W)

Code	Dimensions (L×W)	EIA
18	1.6×0.8mm	0603
21	2.0×1.25mm	0805
31	3.2×1.6mm	1206
61	6.8×1.6mm	2606

④ Features

Code	Features
SP	π Circuit for Signal Lines
ST	T Circuit for Signal Lines
PT	T Circuit for Large Current
HT	T Circuit for Heavy-duty

⑤ Cut-off Frequency (NFL/NFW Series)

Expressed by three figures. The unit is in hertz (Hz). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures.

⑥ Capacitance (NFE Series)

Expressed by three figures. The unit is in pico-farad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures.

⑨ Packaging

Code	Packaging	Series
K	Embossed Taping (ø330mm Reel)	NFW31/NFE
L	Embossed Taping (ø180mm Reel)	NFW31/NFE
B	Bulk	NFL18/NFL21/NFE
D	Paper Taping (ø180mm Reel)	NFL18/NFL21

⑥ Characteristics (NFL/NFW Series)

Code	Characteristics
X	Cut-off Frequency

⑥ Characteristics (NFE Series)

Code	Capacitance Change (Temperature Characteristics)
B	±10%
C	±20%, ±22%
D	+20/-30%, +22/-33%
E	+20/-55%, +22/-56%
F	+30/-80%, +22/-82%
R	±15%
U	-750 ±120ppm/ °C
Z	Other

⑦ Rated Voltage

Code	Rated Voltage
1A	10V
1C	16V
1E	25V
1H	50V
2A	100V

⑧ Electrode

Code	Electrode	Series
3/7	Sn Plating	NFL
4	Lead Free Solder Coating	NFW
9	Others	NFE

2

Chip EMIFIL® LC Combined Array Type (NFA18S/21S Series)

(Part Number)

NF	A	21	SL	207	X	1A	4	5	L
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

① Product ID

Product ID	
NF	Chip EMIFIL®

② Structure

Code	Structure
A	Array Type

③ Dimensions (L×W)

Code	Dimensions (L×W)	EIA
18	1.6×0.8mm	0603
21	2.0×1.25mm	0805

④ Features

Code	Features
SL	L Circuit for Signal Lines

⑤ Cut-off Frequency

Expressed by three figures. The unit is in hertz (Hz). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures.

⑥ Features

Code	Features
X	Expressed by a letter
V	

⑦ Rated Voltage

Code	Rated Voltage
1A	10V

⑧ Number of Circuits

Code	Number of Circuits
4	4 Circuits

⑨ Dimensions (T)

Code	Dimensions (T)
5	0.5mm
8	0.85mm

⑩ Packaging

Code	Packaging
B	Bulk
L	Embossed Taping (ø180mm Reel)

Chip EMIFIL® LC Combined Array Type (NFA2AS Series)

(Part Number)

NF	A	2A	SN	907A	A	4	L
①	②	③	④	⑤	⑥	⑦	⑧

① Product ID

Product ID	
NF	Chip EMIFIL®

② Structure

Code	Structure
A	Array Type

③ Dimensions (L×W)

Code	Dimensions (L×W)	EIA
2A	2.0×1.0mm	0804

④ Features

Code	Features
SN	Notch Filter for Signal Lines

⑤ First Resonance Characteristics

Code	Resonance Frequency
907A	942.5MHz
807A	880MHz

⑥ Second Resonance Characteristics

Code	Resonance Frequency
A	1842.5MHz
B	2140MHz

⑦ Number of Circuits

Code	Number of Circuits
4	4 Circuits

⑧ Packaging

Code	Packaging
B	Bulk
L	Embossed Taping (ø180mm Reel)

2

Chip EMIFIL® RC Combined Type/RC Combined Array Type

(Part Number)

NF	R	21	GD	470	470	2	L
①	②	③	④	⑤	⑥	⑦	⑧

① Product ID

Product ID	
NF	Chip EMIFIL®

② Structure

Code	Structure
R	RC Combined Type
A	RC Combined Array Type

③ Dimensions (L×W)

Code	Dimensions (L×W)	EIA
21	2.0×1.25mm	0805
31	3.2×1.6mm	1206

④ Features

Code	Features
GD	RC Combined Type for Signal Lines

⑧ Packaging

Code	Packaging	Series
L	Embossed Taping (ø180mm Reel)	NFR
B	Bulk	All Series
D	Paper Taping (ø180mm Reel)	NFA□□GD

⑤ Capacitance

Expressed by three figures. The unit is in pico-farad (pF). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures.

⑥ Resistance

Expressed by three-digit alphanumerics. The unit is in ohm (Ω). The first and second figures are significant digits, and the third figure expresses the number of zeros which follow the two figures. If there is a decimal point, it is expressed by the capital letter "R". In this case, all figures are significant digits.

⑦ Electrode/Others (NFR Series)

Code	Electrode
2	Sn Plating

⑦ Number of Circuits (NFA□□GD Series)

Code	Number of Circuits
4	4 Circuits

2

On-Board Type (DC) EMI Suppression Filters (EMIFIL®)



Chip EMIFIL® Capacitor Type NFM18C/21C/3DC/41C Series

NFM18C Series

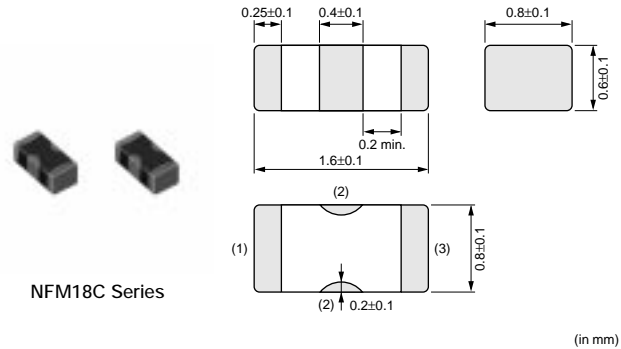
NFM18C series is a 1.6x0.8mm EMI suppression filter for signal lines which have a three terminal structure using Murata's multilayer technology.

■ Features

1. Ultra small size in 1.6x0.8x0.6mm enables high density mounting.
 2. Three terminal structure with low residual inductance (ESL)* characteristics achieves large insertion loss characteristics even in high frequency area.
 3. NFM18C series covers capacitance range from 22 to 22,000pF.
- * Not exceeding one-tenth of monolithic ceramic capacitors (two terminals).

■ Applications

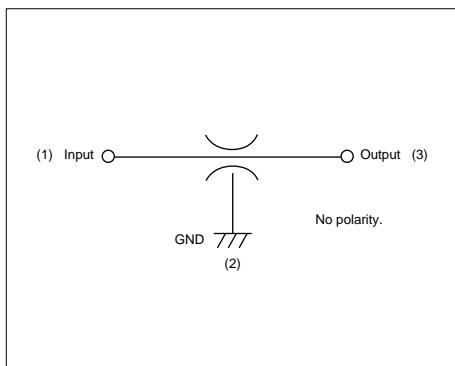
1. EMI suppression of circuit for insertion loss in quantity
2. Noise suppression up to GHz



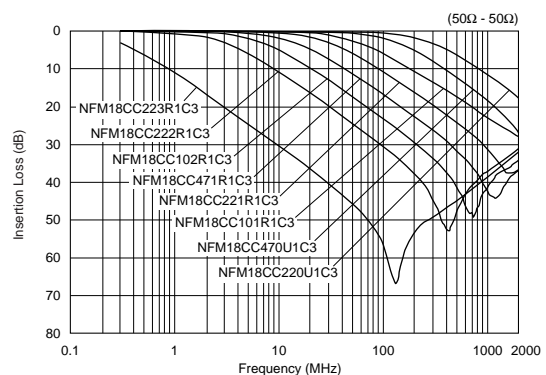
2

Part Number	Capacitance (pF)	Rated Voltage (Vdc)	Rated Current (mA)	Insulation Resistance (min.) (M ohm)	Operating Temperature Range (°C)
NFM18CC220U1C3	22 +20%, -20%	16	400	1000	-55 to +125
NFM18CC470U1C3	47 +20%, -20%	16	400	1000	-55 to +125
NFM18CC101R1C3	100 +20%, -20%	16	500	1000	-55 to +125
NFM18CC221R1C3	220 +20%, -20%	16	500	1000	-55 to +125
NFM18CC471R1C3	470 +20%, -20%	16	500	1000	-55 to +125
NFM18CC102R1C3	1000 +20%, -20%	16	600	1000	-55 to +125
NFM18CC222R1C3	2200 +20%, -20%	16	700	1000	-55 to +125
NFM18CC223R1C3	22000 +20%, -20%	16	1000	1000	-55 to +125

■ Equivalent Circuit



■ Insertion Loss Characteristics

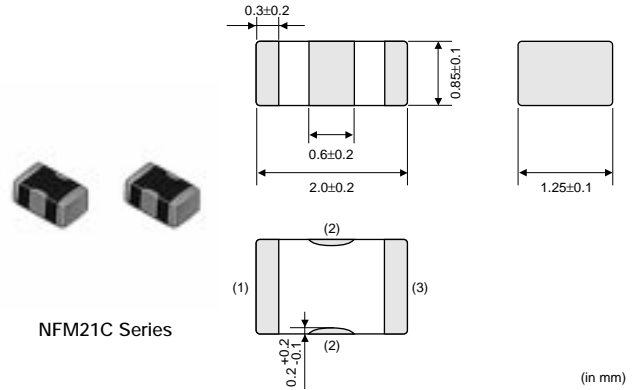


NFM21C Series

The chip "EMIFIL" NFM21C series is a chip type three terminal EMI suppression filter. It can reduce residual inductance to an extremely low level making it excellent for noise suppression at high frequencies.

■ Features

1. Small and low profile of 2.0x1.25x0.85mm enables high density mounting.
2. Three terminal structure enables high performance in high frequency range.
3. Uses original electrode structure which realizes excellent solderability.
4. An electrostatic capacitance range of 22 to 22,000pF enables suppression of noise at specific frequencies.

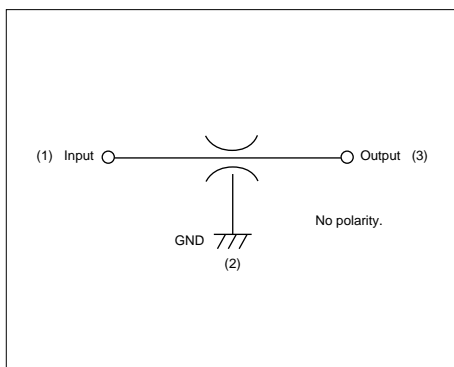


■ Applications

1. PCs and peripherals which emit high amount of noise
2. Compact size equipment such as PDAs, PC cards and mobile telecommunications equipment
3. Severe EMI suppression and high impedance circuits such as digital circuits

Part Number	Capacitance (pF)	Rated Voltage (Vdc)	Rated Current (mA)	Insulation Resistance (min.) (M ohm)	Operating Temperature Range (°C)
NFM21CC220U1H3	22 +20%, -20%	50	700	1000	-55 to +125
NFM21CC470U1H3	47 +20%, -20%	50	700	1000	-55 to +125
NFM21CC101U1H3	100 +20%, -20%	50	700	1000	-55 to +125
NFM21CC221R1H3	220 +20%, -20%	50	700	1000	-55 to +125
NFM21CC471R1H3	470 +20%, -20%	50	1000	1000	-55 to +125
NFM21CC102R1H3	1000 +20%, -20%	50	1000	1000	-55 to +125
NFM21CC222R1H3	2200 +20%, -20%	50	1000	1000	-55 to +125
NFM21CC223R1H3	22000 +20%, -20%	50	2000	1000	-55 to +125

■ Equivalent Circuit



■ Insertion Loss Characteristics

