

Surface Mount EMI Filters LC & LZ Type Chips

LC Features

- High efficiency EMI surface mount filter
- Ideally suited for high frequency signal lines
- Steep insertion loss (IL) characteristics
- Available in 0603, 0805 and 1206 body sizes

LC Typical Electrical Characteristics

Cut-off

Frequency Ranges 10 MHz to 220 MHz $\pm$ 20%

Rated Voltage 25 Volt

Rated Current 100 mA

IR 10 M Ω min.

Operating

Temperature Range -40°C to +85°C

LZ Features

- Monolithic construction of dielectric and ferrite materials
- Band stop filter with a choice of rejected frequency band
- Little delay and distortion from original signal wave
- Available in the 0402 and 0603 body sizes

LZ Typical Electrical Characteristics

Center

Frequency Ranges 10 MHz to 2,000 MHz $\pm$ 20%

Rated Current 50 mA and 100 mA

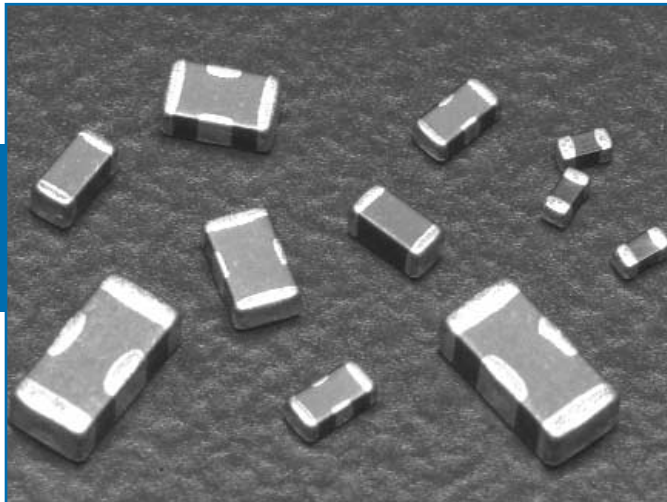
Rejected Bandwidth 0.5 dec. to 1.5 dec.

Operating

Temperature Range -25°C to +85°C

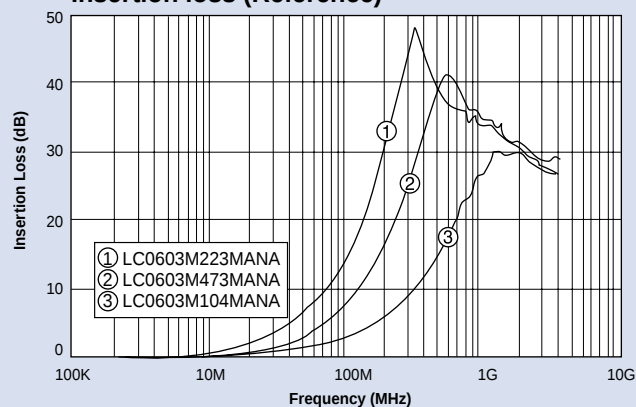
LC/LZ Applications

- Telecommunication equipment, fax, modem, and ADSL
- Computer and peripheral equipment
- Digital AV equipment, such as TV, VCR and DVD
- Digital circuit equipment noise countermeasure



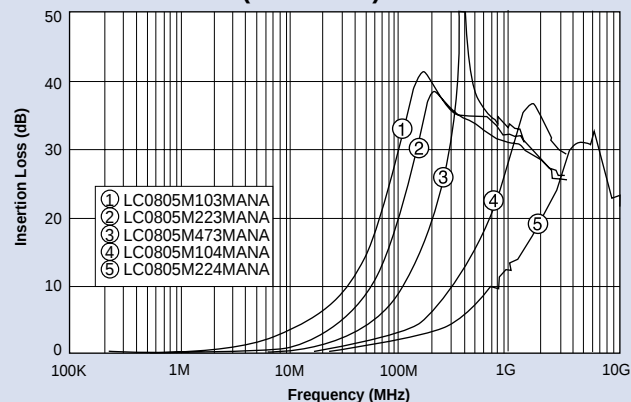
LC0603 Style

Insertion loss (Reference)



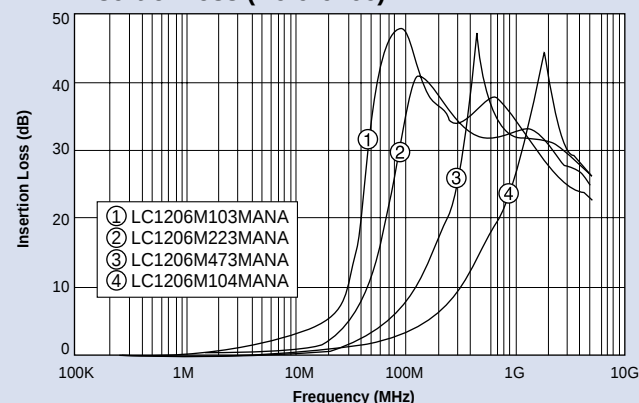
LC0805 Style

Insertion loss (Reference)



LC1206 Style

Insertion loss (Reference)



Surface Mount EMI Filters

LC & LZ Type Chips

Specifications

Part Number	Body Size	Cut-off Frequency (MHz)	Cut-off Frequency Tolerance	Rated Voltage	Rated Current	I.R. (Min.)	Temperature Range
LC0603M223MANA-*	0603	22	± 20%	25 V	100 mA	10 MΩ	-40°C – +85°C
LC0603M473MANA-*		47					
LC0603M104MANA-*		100					
LC0805M103MANA-*	0805	10					
LC0805M223MANA-*		22					
LC0805M473MANA-*		47					
LC0805M104MANA-*		100					
LC0805M224MANA-*		220					
LC1206M103MANA-*	1206	10					
LC1206M223MANA-*		22					
LC1206M473MANA-*		47					
LC1206M104MANA-*		100					

* Denotes packaging style, replace with T for tape and reel or B for bulk

Ordering Information

Example: LC1206M223MANAT

This part number represents an LC EMI filter chip with a body size of 1206. The cut-off frequency is 22 MHz with a tolerance of ± 20%, voltage rating is 25 Volts DC. It has nickel barrier, solder plated termination and a current rating of 0.1 Amp (100 milliamps). The parts are taped and reeled.

LC	1206	M223	M	A	N	A	T
Style	Size	Cut-off Frequency	Cut-off Tolerance	Rated Voltage	Termination	Rated Current	Packaging
LC	0603 0805 1206	M223 = 22 MHz	M = ± 20%	A = 25 VDC	N = Ni Barrier, Solder Plated	A = 0.1 A (100 mA)	T = Tape and Reel B = Bulk

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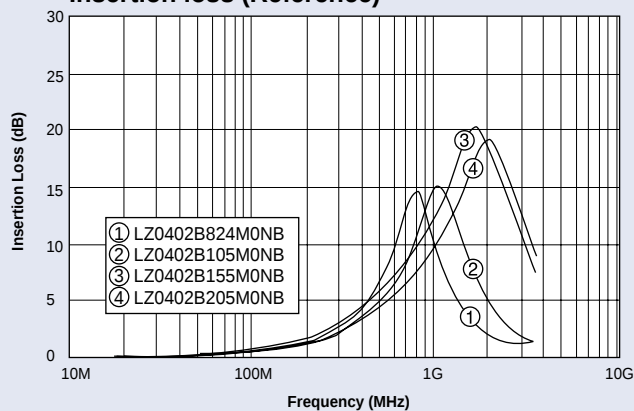
Specifications

Part Number	Body Size	Cut-off Frequency (MHz)	Cut-off Frequency Tolerance	Rejected Bandwidth (dec.)	Max. Insertion Loss	Rated Current	Operating Temperature Range
LZ0402Z824MBNB-*	0402	820	± 20%	0.75	≥ 10 dB	50 mA	-25°C – +85°C
LZ0402B105MBNB-*		1,000		1.0			
LZ0402Y155MBNB-*		1,500		1.25			
LZ0402Y205MBNB-*		2,000		1.25			
LZ0603A103MCNA-*	0603	10		0.5	≥ 15 dB	100 mA	
LZ0603A223MCNA-*		22		0.5			
LZ0603A473MCNA-*		47		0.5			
LZ0603A104MCNA-*		100		0.5			
LZ0603B223MCNA-*		22		1.0			
LZ0603B104MCNA-*		100		1.0			
LZ0603B224MCNA-*		220		1.0			
LZ0603C474MDNA-*		470		1.5	≥ 20 dB		

* Denotes packaging style, replace with T for tape and reel or B for bulk

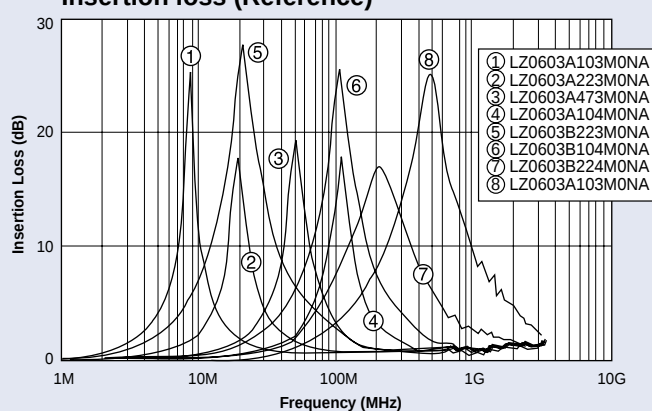
LZ0402 Style

Insertion loss (Reference)



LZ0603 Style

Insertion loss (Reference)



Ordering Information

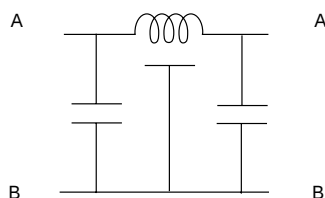
Example: **LZ0402B824MBNBT**

LZ	0402	B	824	M	B	N	A	T
Style	Size	Rejected Bandwidth	Center Frequency Tolerance	Center Frequency Loss	Max. Insertion	Termination	Rated Current	Packaging
LZ	0402 0603	A = 0.5 dec. Z = 0.75 dec. B = 1.0 dec. Y = 1.25 dec. C = 1.5 dec.	820 MHz	M = ±20%	B = ≥10 dB C = ≥15 dB D = ≥20 dB	N = Ni Barrier, Solder Plated	A=0.1A (100mA) B = 0.5A (50mA)	T = Tape and Reel B = Bulk

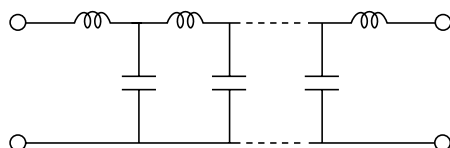
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Circuit Schematic

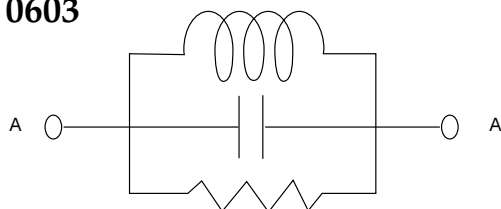
LC 0603



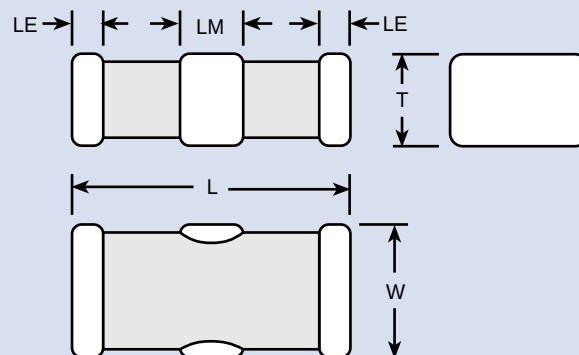
LC 0805 & 1206



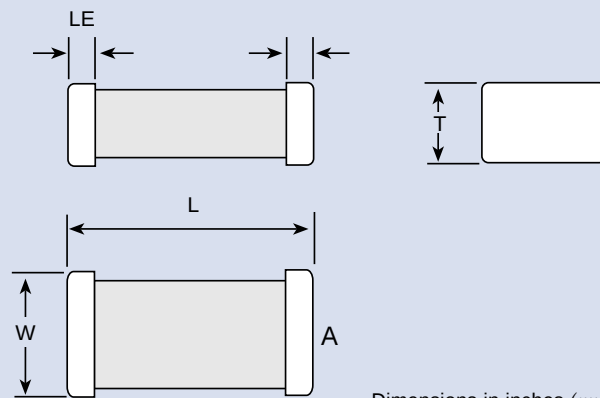
LZ 0402 & 0603



LC 0603, 0805 & 1206



LZ 0402 & 0603



Dimensions in inches (mm)

Mechanical Dimensions

Body Style/Size	Body Length (L)	Body Width (W)	Body Thickness (T)	End Terminal Length (LE)	Middle Terminal Length (LM)
LZ0402	0.039±0.002 (1.0±0.05)	0.020±0.002 (0.5±0.05)	0.020±0.002 (0.5±0.05)	0.010±0.004 (0.25±0.10)	
LZ0603	0.063±0.008 (1.60±0.20)	0.031±0.008 (0.80±0.20)	0.031±0.008 (0.80±0.20)	0.012±0.008 (0.30±0.20)	
LC0603	0.063±0.004 (1.60±0.10)	0.031±0.004 (0.80±0.10)	0.024±0.004 (0.60±0.10)	0.010±0.008 (0.25±0.20)	0.016±0.008 (0.40±0.20)
LC0805	0.079±0.007 (2.0±0.18)	0.049±0.004 (1.25±0.10)	0.031±0.008 (0.80±0.20)	0.012±0.010 (0.30±0.25)	0.024±0.012 (0.60±0.30)
LC1206	0.126±0.008 (3.20±0.20)	0.063±0.008 (1.60±0.20)	0.039±0.008 (1.0±0.20)	0.016±0.012 (0.40±0.30)	0.043±0.012 (1.10±0.30)

Dimensions in inches (mm)

Package Quantities

Body Style/Size	Tape and Reel
LZ0402	10,000 units/reel
LZ0603	4,000 units/reel
LC0603	4,000 units/reel
LC0805	4,000 units/reel
LC1206	2,000 units/reel