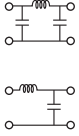
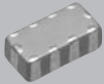
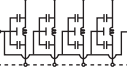
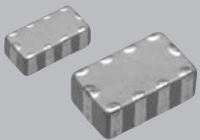
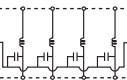
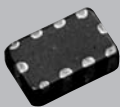
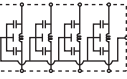
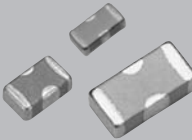
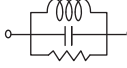


贴片型EMI滤波器一览表

Chip type EMI filters

	型号 Part number	形状 Style	等效电路 Equivalent circuit	截止频率 Cut-off frequency	用途 Applications	特点 Features	页码 Page
3端子型 信号线路用 3 Terminals For Signal Lines	LCA10,LCA20			• LCA10 : 50MHz~270MHz • LCA20 : 47MHz~220MHz	• 电视机、录像机、DVD等数字影像设备 • 传真机、调制解调器、ADSL终端等信息通信设备 • 复印机、电脑、游戏机等数码设备 • 其它各种电子设备的降噪措施 • For digital AV equipment such as TV, VCR and DVD. • For telecommunication equipment such as mobile phones Fax, modem and ADSL. • For computer equipment such as personal computers and copier. • For noise countermeasure of other digital circuit equipment.	• LCA系列是组合了L(电感器)和C(电容器)的高性能三端子表面贴装元件。采用本公司独有的小型、高性能化技术,与以往产品相比,衰减系数更大、除噪频带更宽,特别适用于高频、高速信号线的降噪。 • LCA series, is an extremely efficient EMI filter with monolithic construction of inductor and capacitor elements, suitable for noise reduction on high frequency single line, due to steep and wide band insertion loss characteristics.	39
	LFA10			• LFA10 : 22MHz~100MHz	• For telecommunication equipment such as mobile phones Fax, modem and ADSL.	• 由L(电感器)和C(电容器)复合而成的高性能单片式EMI滤波器	40 41
	LFA20			• LFA20 : 10MHz~220MHz	• For computer equipment such as personal computers and copier.	• 具有急剧的插入损失特性,可在宽频率范围内防止噪声	
	LFA30			• LFA30 : 10MHz~220MHz	• For noise countermeasure of other digital circuit equipment.	• Extremely efficient EMI filter made of a combination of both dielectric and magnetic materials. • Well suited for eliminating noise on high frequency signal lines, due to steep insertion loss.	
	LCG14			• LCG14 : 220MHz~230MHz	• 便携设备及各种电子设备的降噪措施 • 数字影像设备等各种电子设备的降噪措施 • 便携设备及各种电子设备的降噪措施	• 由L(电感器)和C(电容器)复合而成的高性能单片式EMI滤波器 • 具有急剧的插入损失特性,可在宽频率范围内防止噪声 • 1608形状 • 2012形状 • 4路阵列LC滤波器 • LFH24系列为小型 • LCA24系列为低容值型 • LCA14系列为小型	42
	LCA14,LCA24			• LCA14 : 150MHz~350MHz • LCA24 : 200MHz~270MHz	• EMI solution for telecommunication equipment such as mobile phone. • EMI solution for Digital Equipment • Suitable for High-speed bass line,I/O	• Extremely efficient EMI filter with monolithic construction of inductor and capacitor elements. • Well suited for eliminating noise on high frequency signal lines, due to steep insertion loss.	43
	LFA14,LFA24,LFH24			• LFA14 : 110MHz • LFA24 : 47MHz~140MHz • LFH24 : 47MHz~140MHz	• EMI solution for High-speed bass line,I/O	• 4 lines of LC filter. • LFH24 are a small type. • LCA24 are Low Capacitance type. • LCA14 are a small type.	44
3端子型 电源线用 3 Terminals For Power Supply Lines	LFB10,LFB20,LFB30			• LFB10 : 560KHz • LFB20, 30 : 470KHz	• 各种数字设备的DC电源线路的降噪措施 • Noise reduction for computers • Computer peripheral equipment • Digital TV • Cellular telephone, etc.	• 额定电流2A。 • 可消除从低频率开始的宽频率范围内的噪声。 • 小型、低高度、使用方便。 • Rated current is 2 ampere. • Remove noise over a wide range from low frequency. • Miniature and low profile and easy to place since there is no polarity.	45
2端子型 信号线路用 2 Terminals For Signal Lines	LZA05			(中心频率/Center frequency) : 820MHz~2000MHz	• 便携设备及各种电子设备的降噪措施	• 本滤波器利用LC共振,可在宽频率范围内使用。同时,也是带阻型EMI滤波器,备有可选择阻带的产品系列。即使对于接地不稳定的设备、电路,也能发挥稳定的降噪方案效果。	46
	LZA10			(中心频率/Center frequency) : 10MHz~470MHz	• EMI solution for mobile electronic devices,etc.	• Using LC resonance, this part works as a band stop filter with a wide selection of rejected frequency band, and shows effective noise reduction for equipment and circuits with unstable ground.	47

LC复合EMI滤波器(LCA10、LCA20)

CHIP TYPE LC EMI FILTER (LCA10,LCA20)

LC复合EMI滤波器LCA是在1608和2125尺寸中组合了L(电感器)和C(电容器)的高性能三端子表面贴装元件。采用本公司独有的小型、高性能化技术,与以往产品相比,衰减系数更大、除噪频带更宽,特别适用于高频、高速信号线的降噪。

The LC EMI filter (LCA) is an extremely efficient EMI filter with monolithic construction of inductor and capacitor elements, suitable for noise reduction on high frequency single line, due to steep and wide band insertion loss characteristics.

■特点

- 超小型、薄型。
- 急剧的插入损失特性。
- 适用于宽频带的降噪。
- 无方向极性,使用方便。

■Features

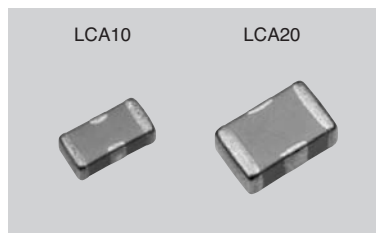
- Ultra miniature and low profile type
- Steep insertion loss characteristics
- Removes noise over a wide range
- Easy to place since there is no polarity

■用途

- 电视机、录像机、DVD等数字影像设备
- 传真机、调制解调器、ADSL终端等信息通信设备
- 复印机、电脑、游戏机等数码设备
- 其它各种电子设备的降噪措施

■Applications

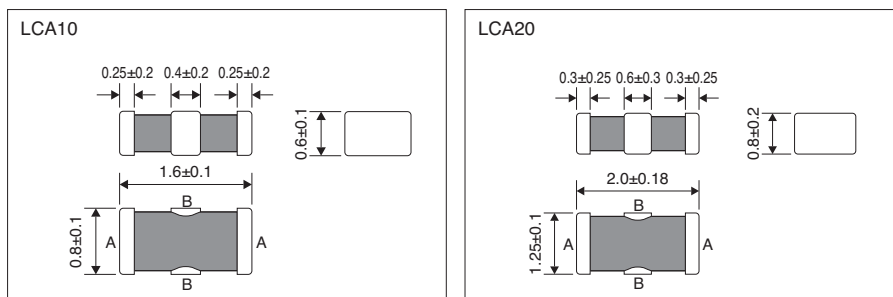
- For digital AV equipment such as TV, VCR and DVD.
- For telecommunication equipment such as Fax, modem and ADSL.
- For computer equipment such as personal computers and copier.
- For noise countermeasure of other digital circuit equipment.



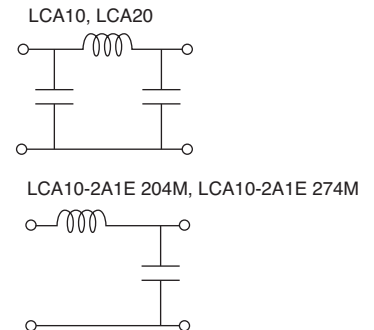
■型号构成 Part number system

LCA	10	—	2A	1E	683	M	T
系列名 Series	形状 Size 10 : 1.6 × 0.8mm (L) (W) 20 : 2.0 × 1.25mm (L) (W)		额定电流 Rated current 2A : 100mA	额定电压 Rated voltage 1E : 25V	截止频率 Cut-off frequency 683 : 68MHz	截止频率容限 Cut-off frequency tolerance M : ±20%	包装形式 Packing form T : 带装 Taping B : 散装 Bulk

■形状及尺寸 (mm) Dimensions (mm)



■等效电路 Equivalent circuits



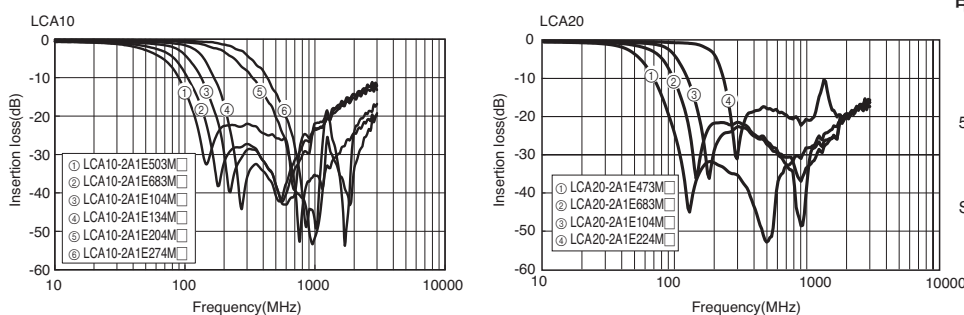
■型号一览表 Part number list

型 号 Part number	截止频率 Cut-off frequency	截止频率容限 Cut-off frequency tolerance	额定电压 Rated voltage	额定电流 Rated current	绝缘阻抗 Insulation Resistance	静电容量 Capacitance (参考值Reference)	使用温度范围 Operating Temp. range
LCA10-2A1E503M□	50MHz	±20%	25V	100mA	10MΩmin.	55pF	-40°C ~ +85°C
LCA10-2A1E683M□	68MHz					55pF	
LCA10-2A1E104M□	100MHz					50pF	
LCA10-2A1E134M□	130MHz					50pF	
LCA10-2A1E204M□	200MHz					29pF	
LCA10-2A1E274M□	270MHz					16pF	
LCA20-2A1E473M□	47MHz	±20%	25V	100mA	10MΩmin.	115pF	
LCA20-2A1E683M□	68MHz					58pF	
LCA20-2A1E104M□	100MHz					58pF	
LCA20-2A1E224M□	220MHz					32pF	

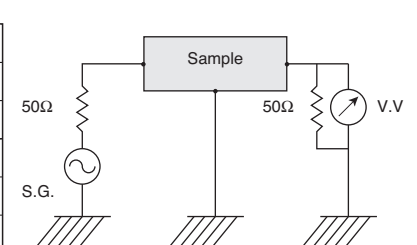
□: T为带装、B为散装

□: "T" stands for taping package and "B" stands for bulk package.

■插入损失特性(参考) Insertion loss (Reference)



电路图 Test circuit



LC复合EMI滤波器LFA10、LFA20、LFA30是采用将电介质和磁介质复合并一体化烧结而成的材料生产的高性能EMI滤波器。该产品具有超小型、薄型、无方向极性的特点，适合于高密度贴装。

■特点

- 采用诱电体和磁性体一体化的单片结构。
- 超小型、薄型。
- 急剧的插入损失特性。
- 适用于宽频带的降噪。
- 无方向极性，使用方便。

■用途

- 电视机、录像机、DVD等数字影像设备
- 传真机、调制解调器、ADSL终端等信息通信设备
- 复印机、电脑、游戏机等数码设备
- 其它各种电子设备的降噪措施

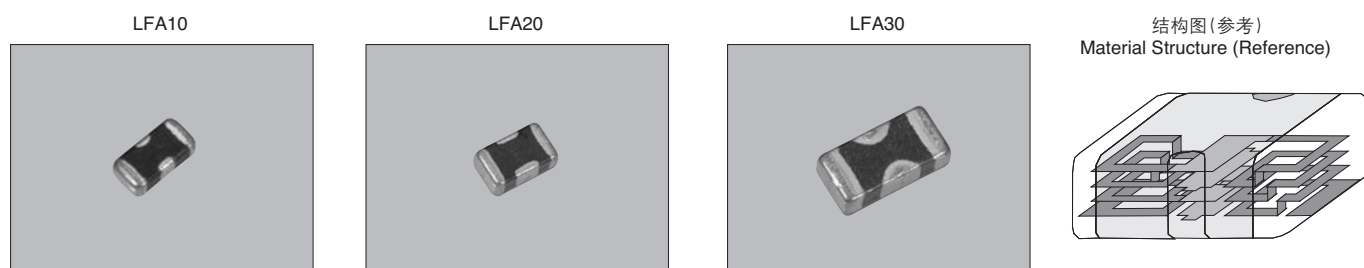
Our "LFA10, LFA20, LFA30" chip type LC EMI filter is an extremely efficient EMI filter made of a combination of both dielectric and magnetic materials. They are well suited for elimination of noise on high frequency signal lines, due to their steep insertion loss characteristics.

■Features

- Monolithic construction of dielectric and magnetic materials
- Ultra miniature and low profile type
- Steep insertion loss characteristics
- Removes noise over a wide range
- Easy to place since there is no polarity

■Applications

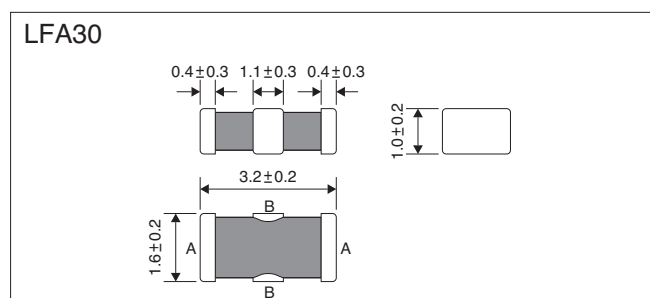
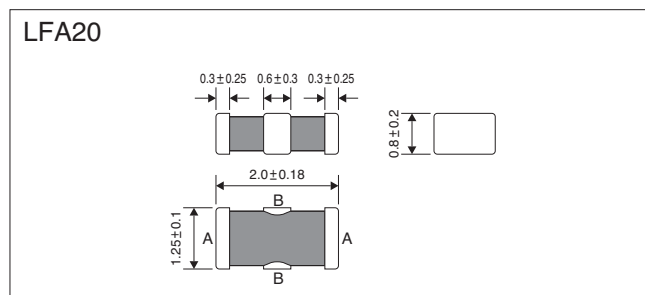
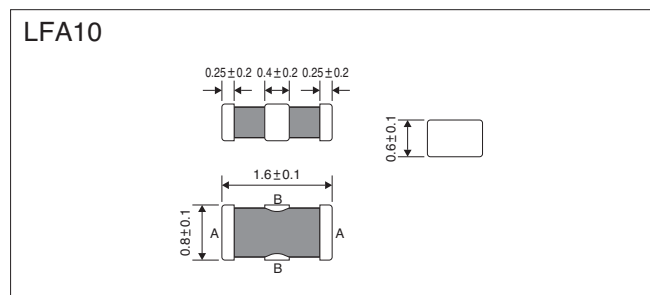
- For digital AV equipment such as TV, VCR and DVD.
- For telecommunication equipment such as Fax, modem and ADSL.
- For computer equipment such as personal computers and copier.
- For noise countermeasure of other digital circuit equipment.



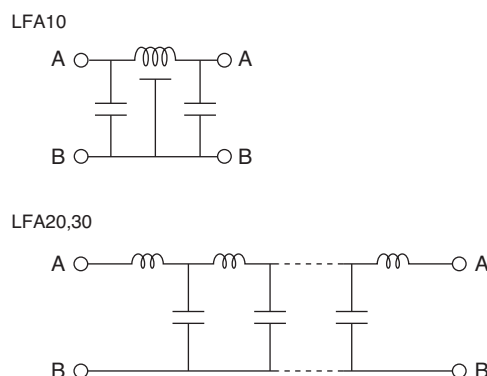
■型号构成 Part number system

LFA	10	—	2A	1E	223	M	T
系列名 Series	形状 Size 10 : 1.6×0.8mm 20 : 2.0×1.25mm 30 : 3.2×1.6mm (L) (W)		额定电流 Rated current 2A : 100mA	额定电压 Rated voltage 1E : 25V	截止频率 Cut-off frequency 223 : 22MHz	截止频率 容许偏差 Cut-off frequency tolerance M : ±20%	包装形式 Packing form T : 带装 B : 散装 Bulk

■形状・尺寸(mm) Dimensions (mm)



■等效电路 Equivalent circuits

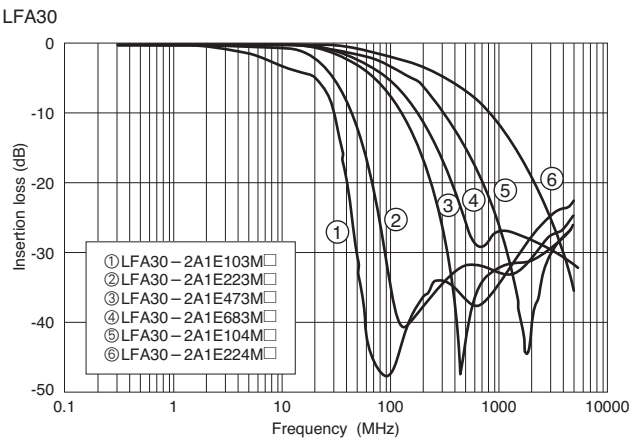
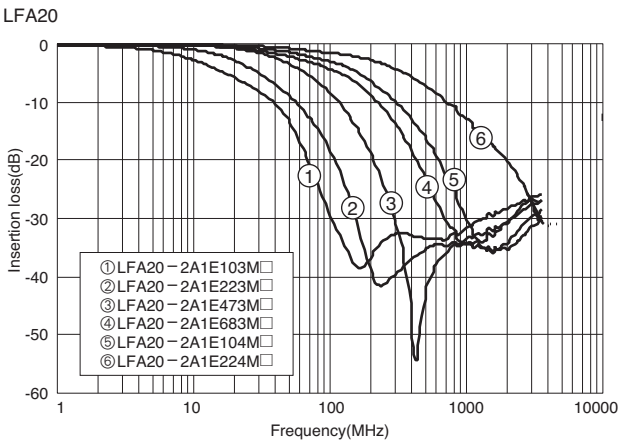
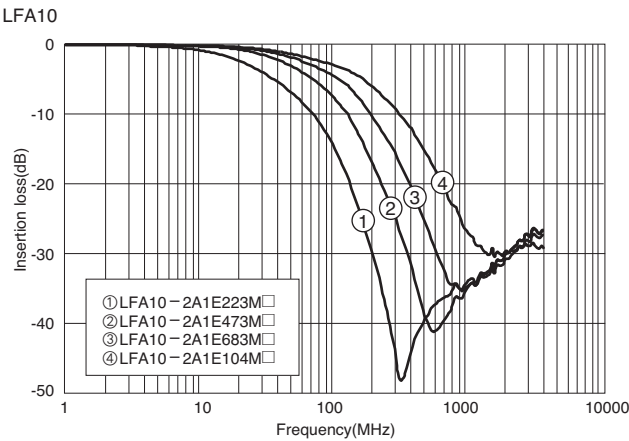


型号一览表 Part number list

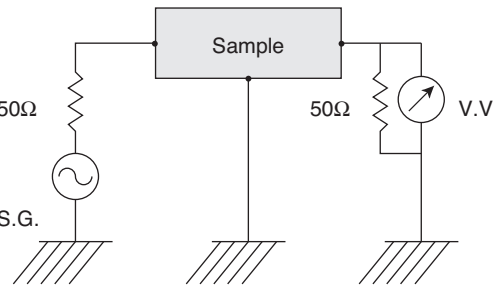
型 号 Part number	截止频率 Cut-off frequency	截止频率容许偏差 Cut-off frequency tolerance	额定电压 Rated voltage	额定电流 Rated current	绝缘阻抗 Insulation Resistance	静电容量 Capacitance (参考值Reference)	使用温度范围 Operating Temp. range
LFA10		± 20%	25V	100mA	10MΩmin.		-40℃~+85℃
LFA10-2A1E223M□	22MHz					290pF	
LFA10-2A1E473M□	47MHz					115pF	
LFA10-2A1E683M□	68MHz					68pF	
LFA10-2A1E104M□	100MHz					34pF	
LFA20							
LFA20-2A1E103M□	10MHz					550pF	
LFA20-2A1E223M□	22MHz					300pF	
LFA20-2A1E473M□	47MHz					82pF	
LFA20-2A1E683M□	68MHz					45pF	
LFA20-2A1E104M□	100MHz					37pF	
LFA20-2A1E224M□	220MHz					15pF	
LFA30							
LFA30-2A1E103M□	10MHz					680pF	
LFA30-2A1E223M□	22MHz					300pF	
LFA30-2A1E473M□	47MHz					68pF	
LFA30-2A1E683M□	68MHz					49pF	
LFA30-2A1E104M□	100MHz					19pF	
LFA30-2A1E224M□	220MHz					16pF	

□: T表示带装, B为散装
□: "T" stands for taping package and "B " stands for bulk package.

插入损失特性(参考) Insertion loss (Reference)



电路图 Test circuit



LC复合EMI滤波器阵列(LCG14)

[对应地面数字电视广播 便携式终端 信号线用]

CHIP TYPE LC EMI FILTER ARRAY (LCG14)

[For Signal Line of mobile device corresponding to terrestrial Digital Broadcast]

LC复合EMI滤波器LCG14是高性能EMI滤波器阵列, 适用于便携式终端的地面数字电视广播频带和RF频带的降噪。该阵列滤波器在 16×0.8 mm的芯片上内置有4个 π 型电路, 衰减系数大、除噪频带宽, 适用于信号线的高频降噪。

The LC EMI filter array LCG14, highly effective to the noise filtering for the RF frequency band of a mobile phone. 4-line π type circuits of array filter are enclosed in a chip of $1.6\text{mm} \times 0.8\text{mm}$ size. It is suitable for high frequency noise filtering because of its large attenuation coefficient and deep wide noise removal band.

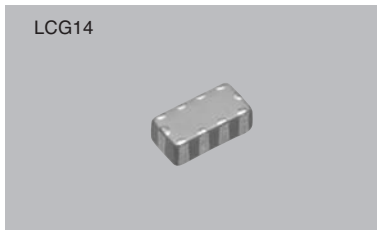
■特点

- 超小型阵列产品, 适用于高密度信号线。
- 在470MHz~770MHz和800MHz~2GHz的频带范围内具有很好的噪声衰减效果。
- 急剧的衰减特性, 适用于高频信号线。
- 备有各种静电容量值的产品。
- 低静电容量型。

■用途

- 手机、数字影像设备

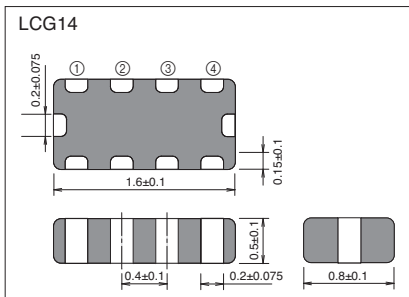
新产品



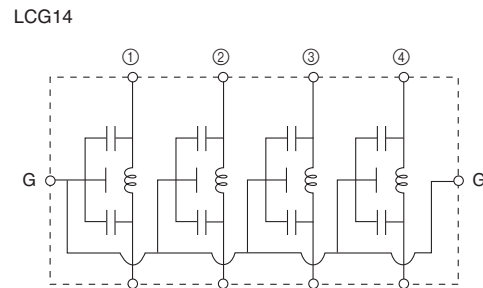
■型号构成 Part number system

LCG	14	—	2A	1A	224	M	T	30
系列名 Series	形状 Size 14: $1.6 \times 0.8\text{mm}$ 4线阵列 4 line array		额定电流 Rated current 2A : 100mA	额定电压 Rated voltage 1A : 10V	截止频率 Cut-off frequency 224 : 220MHz	截止频率容限 Cut-off frequency tolerance M : $\pm 20\%$	包装形式 Packing form T : 带装 Taping B : 散装 Bulk	静电容量 30 : 30pF

■形状・尺寸(mm) Dimensions (mm)



■等效电路 Equivalent circuits



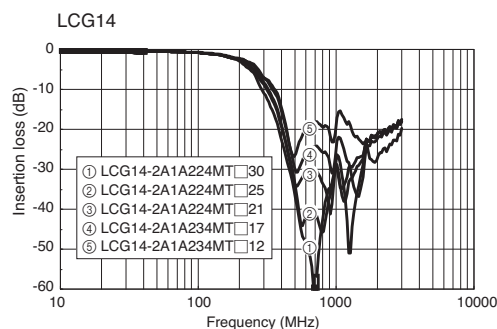
■型号一览表 Part number list

型 号 Part number	截止频率 Cut-off frequency	截止频率容许偏差 Cut-off frequency tolerance	额定电压 Rated voltage	额定电流 Rated current	绝缘阻抗 Insulation Resistance	静电容量 Capacitance (参考值Reference)	使用温度范围 Operating Temp. range
LCG14-2A1A224M□30	220MHz	$\pm 20\%$	10V	100mA	10M Ω min.	30pF	$-40^\circ\text{C} \sim +85^\circ\text{C}$
LCG14-2A1A224M□25	220MHz					25pF	
LCG14-2A1A224M□21	220MHz					21pF	
LCG14-2A1A234M□17	230MHz					17pF	
LCG14-2A1A234M□12	230MHz					12pF	

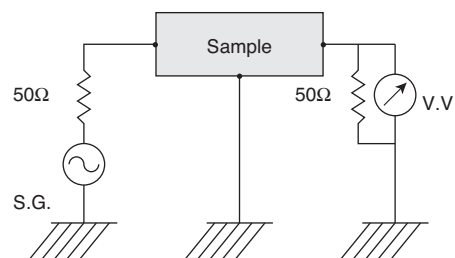
□: T为带装、B为散装

□: "T" stands for taping package and "B" stands for bulk package.

■插入损失特性(参考) Insertion loss (Reference)



电路图 Test circuit



LC复合EMI滤波器阵列(LCA14、LCA24)

[便携式终端 信号线用]

CHIP TYPE LC EMI FILTER ARRAY (LCA14,LCA24)

[For Signal Line]

LC复合EMI滤波器阵列LCA14、LCA24系列是高性能EMI滤波器阵列，适用于便携式终端RF频带的降噪。是内置4个LC多级电路的三端子型阵列，衰减系数大、除噪频带宽，适用于信号线的高频降噪。

The LC EMI filter array, LCA14, LCA24, is highly effective to the noise filtering for the RF frequency band of a mobile phone. 4 LC circuits of 3 terminal type are enclosed. It is suitable for high frequency noise filtering because of it is large attenuation coefficient and deep wide noise removal band.

■特点

- 超小型阵列产品，适用于高密度信号线。
- 在800MHz~2GHz的频带范围内具有很好的噪声衰减效果。
- 急剧的衰减特性，适用于高频信号线。
- 备有各种静电容量值的产品。
- 低静电容量型。

■用途

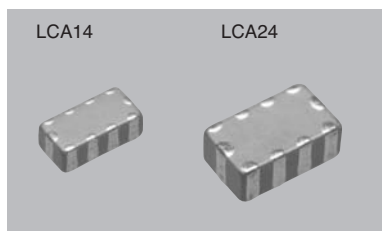
- 手机、数字影像设备

■Features

- Ultra miniature and low profile and suitable for high density circuit lines.
- Large attenuation in the frequency range 800MHz to 2GHz
- Steep insertion loss and suitable for high speed signal line.
- Products of different capacitance values are available.
- smaller capacitance

■Applications

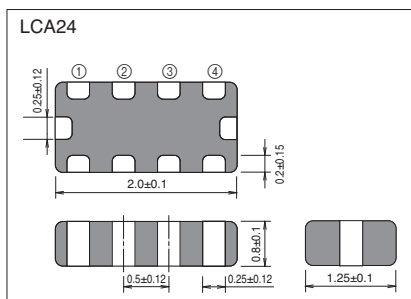
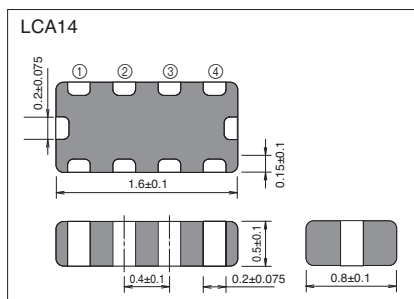
- For mobile phones and digital AV equipments



■型号构成 Part number system

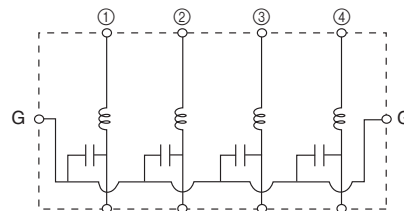
LCA	14	—	2A	1A	194	M	T	28
系列名 Series	形状 Size 14: 1.6×0.8mm 24: 2.0×1.25mm 4线阵列 4 line array		额定电流 Rated current 2A : 100mA	额定电压 Rated voltage 1A : 10V	截止频率 Cut-off frequency 194 : 190MHz	截止频率容限 Cut-off frequency tolerance M : ±20%	包装形式 Packing form T : 带装 Taping B : 散装 Bulk	静电容量 28 : 28pF

■形状・尺寸(mm) Dimensions (mm)



■等效电路 Equivalent circuits

LCA14, LCA24



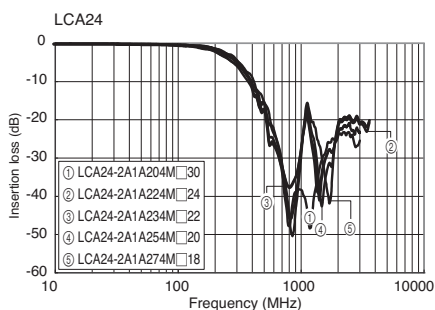
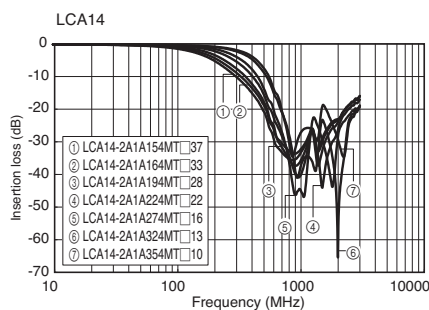
■型号一览表 Part number list

型 号 Part number	截止频率 Cut-off frequency	截止频率容许偏差 Cut-off frequency tolerance	额定电压 Rated voltage	额定电流 Rated current	绝缘阻抗 Insulation Resistance	静电容量 Capacitance (参考值Reference)	使用温度范围 Operating Temp. range
LCA14-2A1A154M□37	150MHz	±20%	10V	100mA	10MΩmin.	37pF	-40°C ~ +85°C
LCA14-2A1A164M□33	160MHz					33pF	
LCA14-2A1A194M□28	190MHz					28pF	
LCA14-2A1A224M□22	220MHz					22pF	
LCA14-2A1A274M□16	270MHz					16pF	
LCA14-2A1A324M□13	320MHz					13pF	
LCA14-2A1A354M□10	350MHz					10pF	
LCA24-2A1A204M□30	200MHz					30pF	
LCA24-2A1A224M□24	220MHz					24pF	
LCA24-2A1A234M□22	230MHz					22pF	
LCA24-2A1A254M□20	250MHz					20pF	
LCA24-2A1A274M□18	270MHz					18pF	

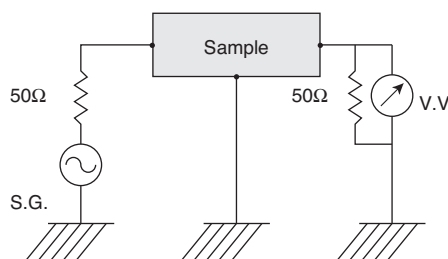
□: T为带装, B为散装

□: "T" stands for taping package and "B" stands for bulk package.

■插入损失特性(参考) Insertion loss (Reference)



■电路图 Test circuit



LC复合EMI滤波器阵列 (LFA14、LFA24、LFH24)

CHIP TYPE LC EMI FILTER ARRAY (LFA14,LFA24,LFH24)

LC复合EMI滤波器LFA14、LFA24、LFH24是复合L(电感器)和C(电容器)的高性能单片式EMI滤波器阵列。该产品采用1608、2012或2010形状，内置4个LC多级电路，是3端子型的阵列，衰减系数大、除噪声带宽，适合于抑制信号线路中的高频噪声。LFA14、LFA24、LFH24系列为分布常数电路。

Our "LFA14, LFA24, LFH24" are extremely efficient EMI filter arrays with monolithic construction of inductor and capacitor elements. They are 3 terminal arrays of 4 LC circuits in a 0603, 0805 or 0804 package, suitable for noise reduction on high frequency signal lines, due to steep and wide-band insertion loss characteristics. LFA14, LFA24 and LFH24 series have distributed element circuits.

■特点

- 内置4线LC多级电路，适合于高密度线路。
- 小型、薄型。
- 具有急剧的插入损失特性和宽范围的噪声吸收频带。
- LFH24为小型产品。(2.0×1.0mm)

■Features

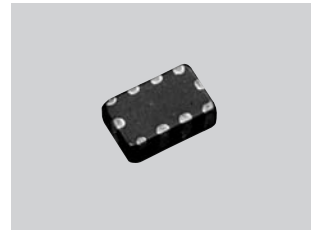
- Array of 4 LC filters, suitable for high density circuit lines.
- Ultra miniature and low profile type
- Steep insertion loss characteristics and removes noise over a wide range.
- LFH24 is smaller. (0804 size)

■用途

- 数字影像设备、手机

■Applications

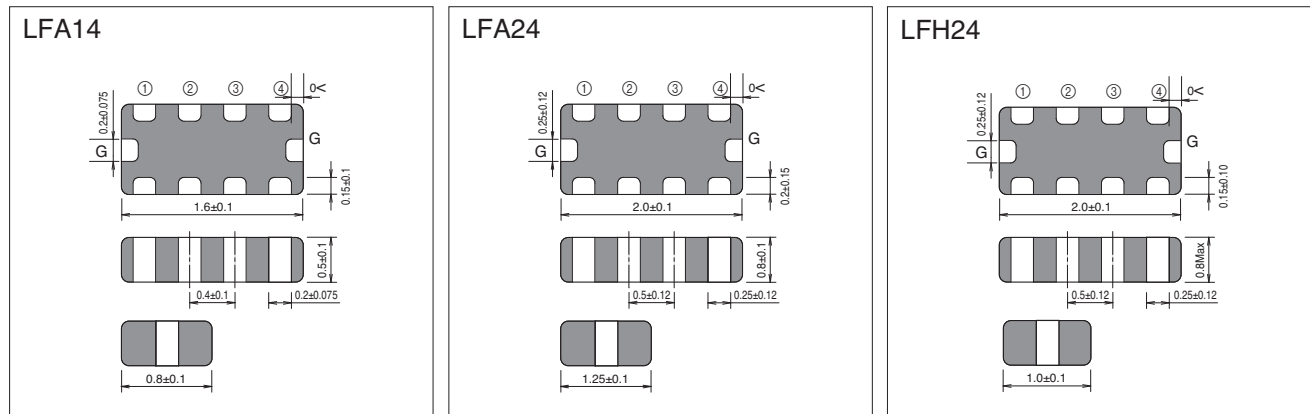
- For digital AV equipment and cellular phone.



■型号构成 Part number system

LFA	24	—	2A	1A	473	M	T
系列名 Series LFA:通常产品 Normal LFH:小型产品 Small	形状 Size LFA14:1.6×0.8mm LFA24:2.0×1.25mm LFH24:2.0×1.0mm (L) (W) 4线阵列 4 line array		额定电流 Rated current 2A:100mA	额定电压 Rated voltage 1A:10V	截止频率 Cut-off frequency 473:47MHz	截止频率 容许偏差 Cut-off frequency tolerance M:±20%	包装形式 Packing form T:带装 Taping B:散装 Bulk

■形状・尺寸(mm) Dimensions (mm)



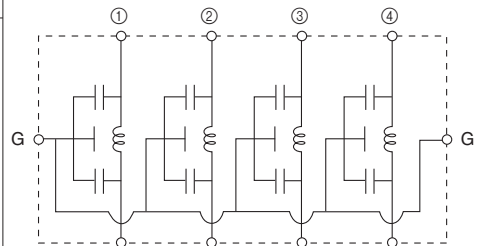
■型号一览表 Part number list

型 号 Part number	截止频率 Cut-off frequency	截止频率容许偏差 Cut-off frequency tolerance	额定电压 Rated voltage	额定电流 Rated current	绝缘阻抗 Insulation Resistance	静电容量 Capacitance (参考值Reference)	使用温度范围 Operating Temp. range
LFA14-2A1A114M□	110MHz	±20%	10V	100mA	10MΩmin.	28pF	-40℃~+85℃
LFA24-2A1A473M□	47MHz					100pF	
LFA24-2A1A683M□	68MHz					55pF	
LFA24-2A1A823M□	82MHz					55pF	
LFA24-2A1A104M□	100MHz					41pF	
LFA24-2A1A144M□	140MHz					30pF	
LFH24-2A1A473M□	47MHz					100pF	
LFH24-2A1A144M□	140MHz					23pF	

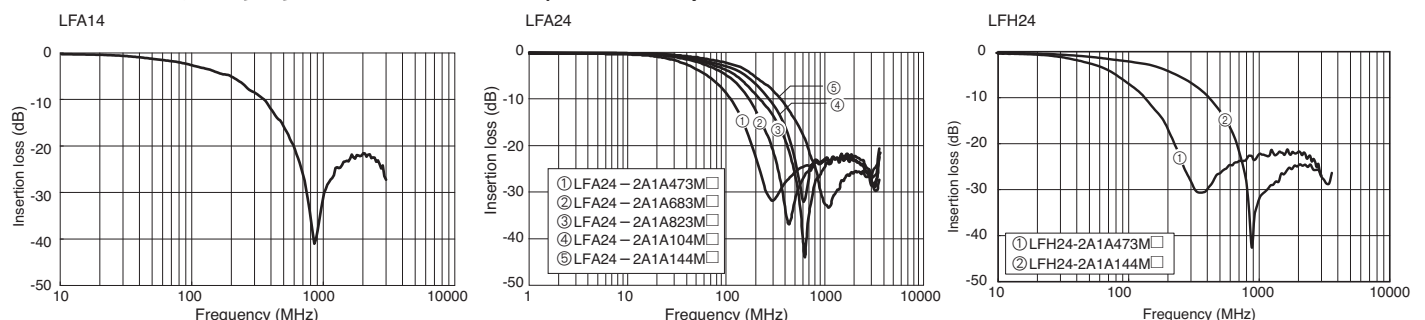
- : T表示带装、B表示散装
□: "T" stands for taping package and "B" stands for bulk package.

■等效电路 Equivalent circuits

LFA14,LFA24,LFH24



■插入损失特性(参考) Insertion loss (Reference)



EMI滤波器LFB10、LFB20、LFB30产品是小型高性能EMI滤波器，用于要求大容许电流的电源线路。本产品适合于消除电源线路中的低频—高频的宽频率范围内的噪声，是3端子形状的小型表面组装元件。

Our "LFB10, LFB20, LFB30" chip type EMI filter is an extremely efficient & small EMI filter for power lines which require large rated current. They are well suited for wide range noise reduction on DC power lines.

特点

- 额定电流2A。
- 可消除从低频率开始的宽频率范围内的噪声。
- 小型、低高度，使用方便。

Features

- Rated current is 2 ampere.
- Remove noise over a wide range from low frequency.
- Miniature and low profile and easy to place since there is no polarity.

用途

音响设备、电脑及其外围设备的DC电源线路。

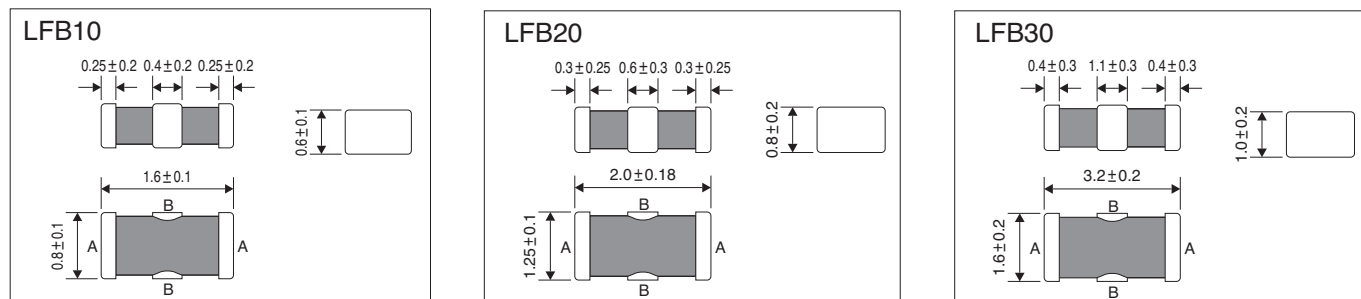
Applications

Noise reduction of DC power lines for AV equipment, computer and computer peripheral equipment.

型号构成 Part number system

LFB	20	—	3D	1E	471	M	T
系列名 Series	形状 Size 10: 1.6×0.8mm (L) (W) 20: 2.0×1.25mm (L) (W) 30: 3.2×1.6mm (L) (W)		额定电流 Rated current 3D: 2000mA	额定电压 Rated voltage 1E: 25V 1H: 50V	截止频率 Cut-off frequency 471: 470KHz 561: 560KHz	截止频率 容许偏差 Cut-off frequency tolerance M: ±20%	包装形式 Packing form T: 带装 Taping B: 散装 Bulk

形状・尺寸(mm) Dimensions (mm)

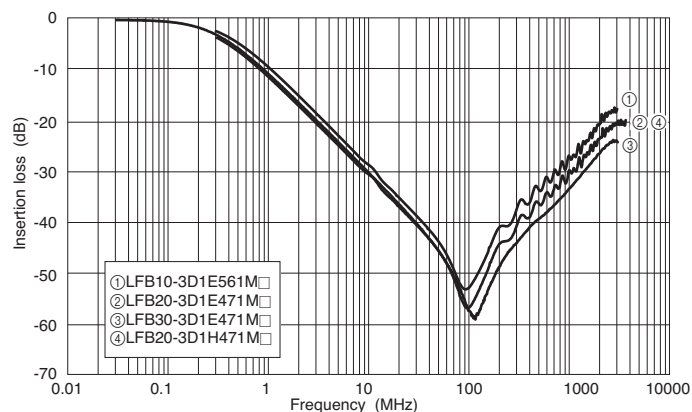


型号一览表 Part number list

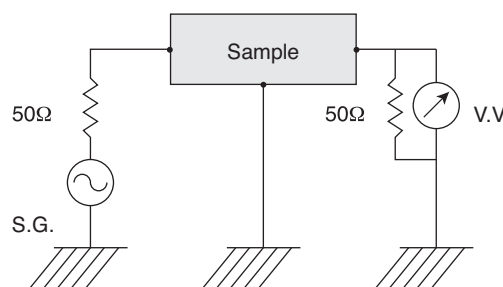
型 号 Part number	截止频率 Cut-off frequency	截止频率容许偏差 Cut-off frequency tolerance	额定电压 Rated voltage	额定电流 Rated current	绝缘阻抗 Insulation Resistance	使用温度范围 Operating Temp. range
LFB10－3D1E561M□	560KHz	± 20%	25V	2000mA	10MΩmin.	－40℃～＋85℃
LFB20－3D1E471M□	470KHz					
LFB30－3D1E471M□						
LFB20－3D1H471M□						

- : T表示带装、B表示散装
□: "T" stands for taping package and "B" stands for bulk package.

插入损失特性(参考) Insertion loss (Reference)



电路图 Test circuit



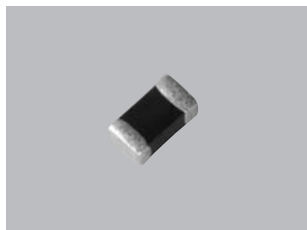
双端子型LC复合EMI滤波器LZA05是采用将电介质和磁介质复合并一体化烧结而成的材料生产的高性能EMI滤波器。本滤波器利用LC共振，频率适用范围宽，是带阻型EMI滤波器，备有可选择阻带的产品系列。即使对于接地不稳定的设备、电路，也能发挥稳定的降噪效果。最适合于数字影像设备、移动设备等高速信号线路的高频降噪。

特点

- 采用电介质和磁介质一体化的单片式结构。
- 可选择噪声阻带的带阻型。
- 信号波形的失真和延迟少。
- 完全无铅产品。

用途

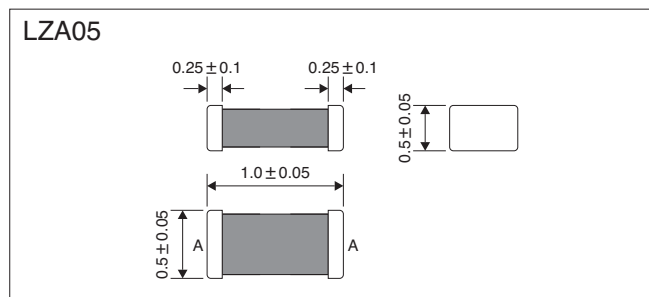
- 电视机、录像机、DVD等数字影像设备
- 手机、传真机、调制解调器、ADSL终端等信息通信设备
- 复印机、电脑、游戏机等电子设备
- 其它各种电子设备的降噪措施



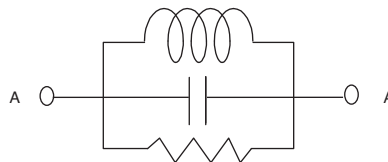
型号构成 Part number system

LZA	05	— 1H	B	B	105	M	T
系列名 Series	形状 Size 05 : 1.0×0.5mm (L) (W)	额定电流 Rated current 1H : 50mA	最大衰减量 Max. insertion loss B : ≥10dB	带阻 Rejected band width Z : 0.75dec B : 1.0dec Y : 1.25dec	中心频率 Center frequency 105 : 1000MHz	中心频率容许偏差 Center frequency tolerance M : ±20%	包装形式 Packing form T: 带装 B: 散装 Bulk

形状・尺寸(mm) Dimensions (mm)



等效电路 Equivalent circuits



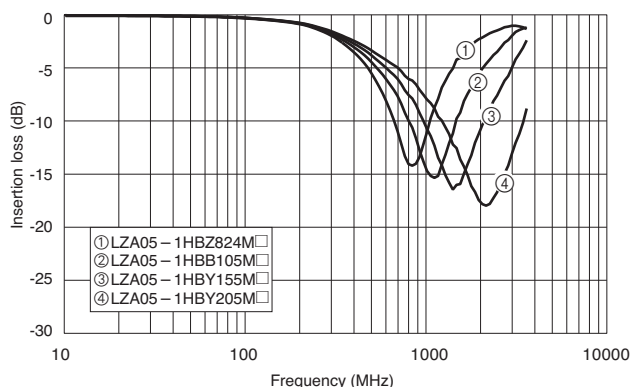
型号一览表 Part number list

型 号 Part number	中心频率 Center frequency	中心频率容许偏差 Center frequency tolerance	阻带 Rejected band width	最大衰减量 Max. insertion loss	额定电流 Rated current	使用温度范围 Operating Temp. range
LZA05—1HBZ824M□	820MHz	±20%	0.75dec	≥10dB	50mA	-25°C ~ +85°C
LZA05—1HBB105M□	1000MHz		1.0dec	≥10dB		
LZA05—1HBY155M□	1500MHz		1.25dec	≥10dB		
LZA05—1HBY205M□	2000MHz		1.25dec	≥10dB		

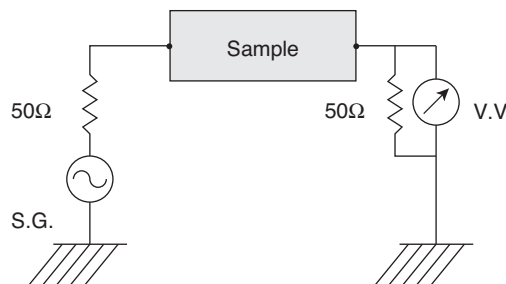
□: T表示带装、B表示散装

□: "T" stands for taping package and "B" stands for bulk package.

插入损失特性(参考) Insertion loss (Reference)



电路图 Test circuit



双端子型LC复合EMI滤波器LZA10是采用将电介质和磁介质复合并一体化烧结而成的材料生产的高性能EMI滤波器。本滤波器利用LC共振，频率适用范围宽，是带阻型EMI滤波器，备有可选择阻带的产品系列。即使对于接地不稳定的设备、电路，也能发挥稳定的降噪效果。最适合于数字影像设备、移动设备等高速信号线路的高频降噪。

■特点

- 采用电介质和磁介质一体化的单片式结构。
- 可选择噪声阻带的带阻型。
- 信号波形的失真和延迟少。

■用途

- 电视机、录像机、DVD等数字影像设备
- 手机、传真机、调制解调器、ADSL终端等信息通信设备
- 复印机、电脑、游戏机等数字设备
- 其它各种电子设备的降噪措施

Our "LZA10" 2 terminals chip type LC EMI filter is an extremely efficient EMI filter made of a combination of both dielectric and magnetic materials. Using LC resonance, this part works as a band stop filter with a wide selection of rejected frequency band, and shows effective noise reduction for equipment and circuits with unstable ground. Suitable for high frequency noise reduction on high-speed signal lines of digital video equipment and mobile devices.

■Features

- Monolithic construction of dielectric and magnetic materials.
- Band stop filter with a choice of rejected frequency band.
- Little delay and distortion from original signal wave.

■Applications

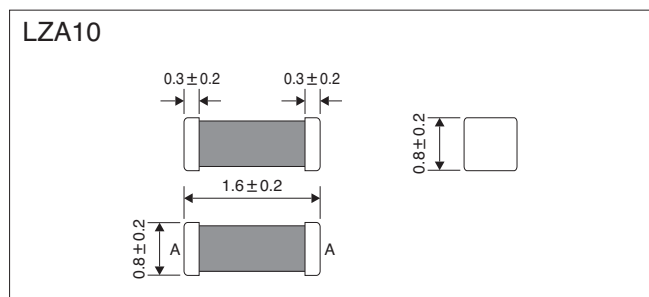
- For digital AV equipment such as TV, VCR and DVD.
- For telecommunication equipment such as cellular phone, FAX, modem and ADSL.
- For computer equipment such as personal computers and copier.
- For noise countermeasure of other digital circuit equipment.



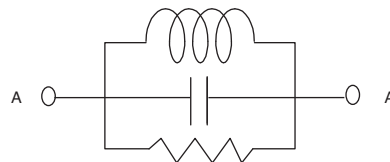
■型号构成 Part number system

LZA	10	—	2A	C	B	104	M	T
系列名 Series	形状 Size 10 : 1.6×0.8mm (L) (W)	额定电流 Rated current 2A : 100mA	最大衰减量 Max. insertion loss C : ≥15dB D : ≥20dB	带阻 Rejected band width A : 0.5dec B : 1.0dec C : 1.5dec	中心频率 Center frequency 104 : 100MHz	中心频率容许偏差 Center frequency tolerance M : ±20%	包装形式 Packing form T : 带装 Taping B : 散装 Bulk	

■形状・尺寸(mm) Dimensions (mm)



■等效电路 Equivalent circuits

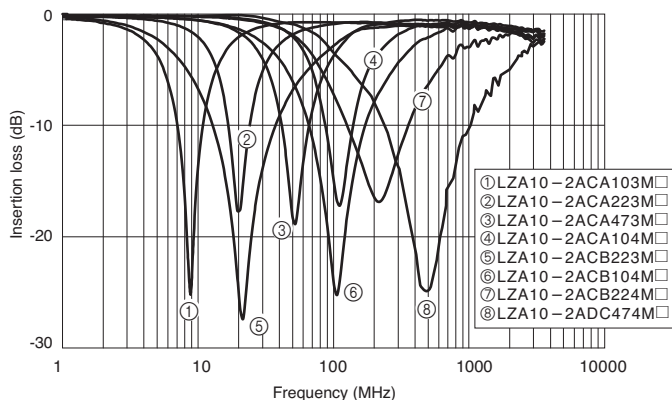


■型号一览表 Part number list

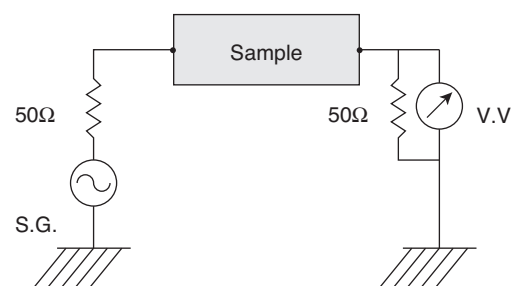
型 号 Part number	中心频率 Center frequency	中心频率容许偏差 Center frequency tolerance	阻带 Rejected band width	最大衰减量 Max. insertion loss	额定电流 Rated current	使用温度范围 Operating Temp. range
LZA10-2ACA103M□	10MHz	± 20%	0.5dec	≥15dB	100mA	-25℃ ~ +85℃
LZA10-2ACA223M□	22MHz					
LZA10-2ACA473M□	47MHz					
LZA10-2ACA104M□	100MHz					
LZA10-2ACB223M□	22MHz		1.0 dec	≥20dB		
LZA10-2ACB104M□	100MHz					
LZA10-2ACB224M□	220MHz					
LZA10-2ADC474M□	470MHz					

□: T表示带装, B表示散装 □: "T" stands for taping package and "B" stands for bulk package.

■插入损失特性(参考) Insertion loss (Reference)



电路图 Test circuit

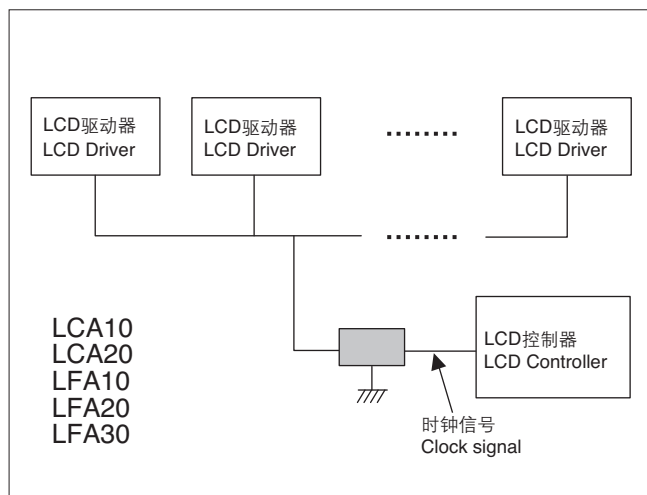


应用例

NOISE APPLICATIONS

■时钟线的降噪方案

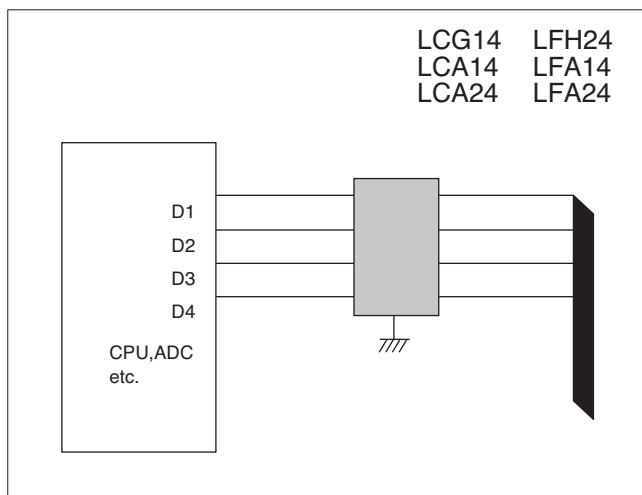
Clock line



移动电话、液晶面板、各种数字设备
Mobile phone, LCD panel, Digital Equipment

■数据线的降噪方案

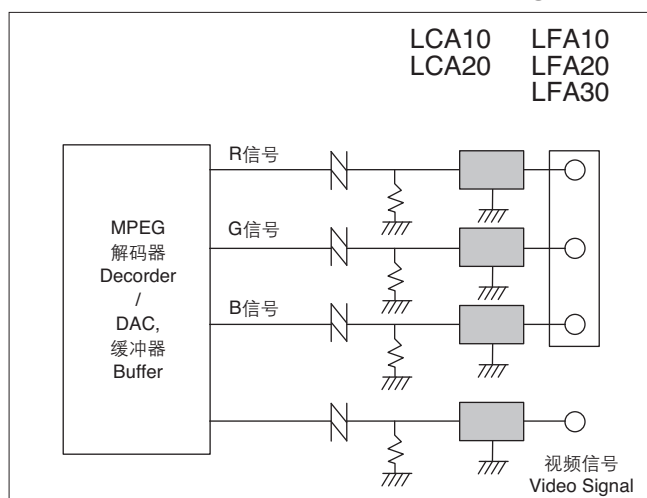
Data line



移动电话、复印机、液晶面板、各种数字设备
Mobile phone, Copier, LCDpanel, Digital Equipment

■视频线路的降噪方案

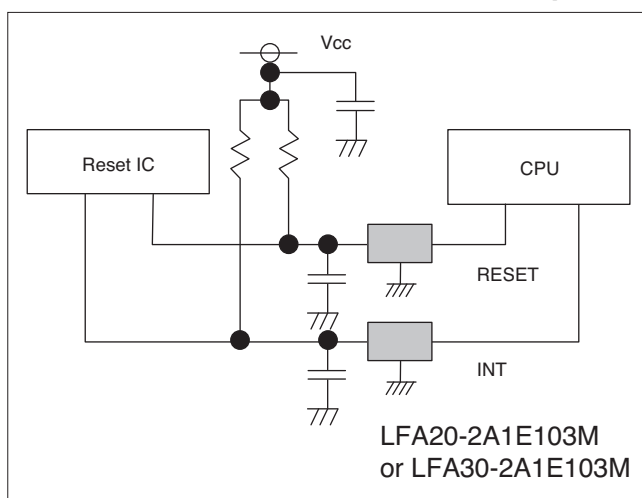
Video signal line



PC、数字电视、游戏机、车载导航设备
PC, Digital-TV, Game machine, Car-Navigation

■EMS对策

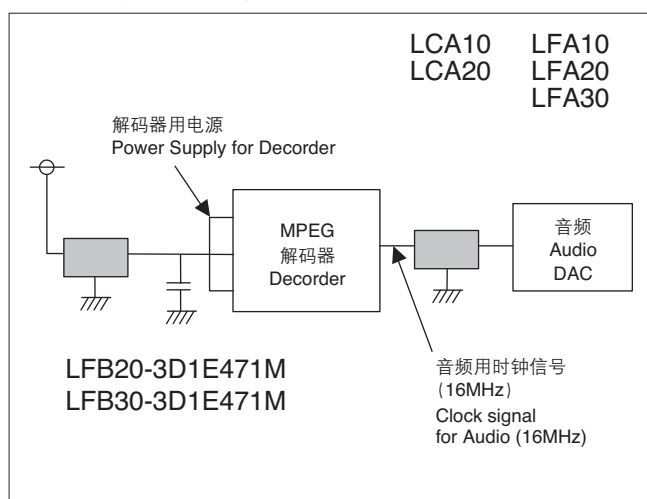
EMS protect



游戏机、各种使用微电脑的设备
Game machine. IC.

■电源线路的降噪方案

Power line



IC电源线
Vcc line for IC.

使用注意事项

HANDLING PRECAUTIONS

■电路设计

1-1. 使用环境以及额定电路、性能的确证

请确认使用环境以及安装环境之后，在EMI滤波器目录或规格书中规定的额定电路、性能范围之内使用。

1-2. 使用电压以及电流(额定电路电压、电流的确证)

输入在EMI滤波器的电压、电流，请使用额定电压以及电流范围内的数值。输入超出额定电路电压、电流情况时，将发生劣化、损害。

1-3. 使用温度

请在目录或规格书中规定的范围内使用。特别是超出最高使用温度时，降低其可靠性，请勿使用。

1-4. 使用环境

请勿在下列环境中使用，否则将导致特性劣化，严重时甚至会造成故障(或人身伤害事故)。

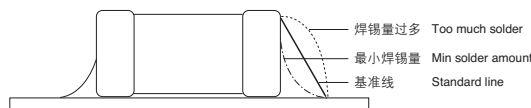
- 1) 直接接触水的场所、因湿度大可能会导致结露的场所
- 2) 有腐蚀性、还原性气体(硫化氢、亚硫酸、氯气、氨气等)的环境
- 3) 有挥发性、可燃性气体的环境
- 4) 多尘的场所
- 5) 减压或加压后的空气中
- 6) 暴露于盐水、油、药液、有机溶剂的场所
- 7) 振动或冲击过大的场所
- 8) 其他与上述环境相当的场所

1-5. 安全预防

医疗、宇航、核电等设备上使用的电子部件，与用于一般民用设备的相比，常常要求更高的可靠性，因为这些设备一旦发生故障，经常会导致人身危害或引起巨大的社会损失。考虑用于此类用途时，请务必事先与本公司联系。

■安装条件

- 1) 焊料请使用低活性(卤化物含有率在0.2wt%以下)的产品。
- 2) 焊接后进行超音波清洗时，输出过大会引起主板共振，由此可能会造成主板破裂或端子电极粘着力下降。故此，推荐按以下条件进行清洗。
频率：40kHz以下
输出：20W/L以下
清洗时间：5分钟以内
- 3) 焊锡量越多，本产品所受的机械应力就越大，过大时可能会造成破裂。请调整焊锡量，使焊缝上端的厚度为贴片厚度的1/2~2/3。



- 4) 若在传感器焊接于主板上后的工序或处理中主板发生弯曲，传感器可能会发生破裂。因此在设计零部件配置时，应尽量避免施加会使主板产生挠曲的过大应力。
- 5) 进行主板分割时，由于制品受到机械应力的作用，故请采取适当的制品配置和分割方法。

■树脂涂层

- 1) 根据树脂的种类，在硬化过程以及自然放置下、树脂分解出来的气体停滞在树脂内，有时使产品的性能退化。
- 2) 如果树脂的硬化温度超出了产品的使用温度，更加严重受到热膨胀冷缩的影响，有时导致产品破损。
- 3) 因树脂的热膨胀冷缩的影响下，有时使产品的性能退化。

■Circuit design

1-1. Verification of operating environment, electrical rating and performance

EMI filters shall be used within the electrical rating and characteristics specified in the specifications or catalogue.

1-2. Operating voltage and current (Verification of rated voltage and current)

The operating voltage and current for the EMI filters must always be lower than their rated values.

Unless the products are operated below the specified maximum rated voltage and current, it may cause damage and insulation breakdown.

1-3. Operating temperature

The EMI filters shall be used within the operating temperature specified in the specifications or catalogue. The reliability of the products might be reduced when the products are used in the high temperature beyond the maximum operating temperature.

1-4. Operating conditions

Do not use the products under the following conditions because all these factors deteriorate the performances or cause failures

- 1) Wet or humid locations
- 2) Corrosive or deoxidizing gas (Hydrogen sulfide, Sulfurous acid, Chloride and ammonia, etc.)
- 3) Volatile or flammable gas
- 4) Dusty conditions
- 5) Under high pressure or low pressure
- 6) Locations with salt water, oils, chemical liquids or organic solvents
- 7) Strong vibrations or mechanical impact
- 8) Other places similar to the hazardous conditions mentioned above

1-5. Safety precaution

Our products shall be used for general purposes applications required for consumer type electronics equipment. Strongly recommend to consult us before use of our product, if you think about use of our products on the following special applications with high level of safety

- Medical equipment
- Aircraft equipment, Aerospace equipment
- Atomic power equipment
- etc.

■Soldering and mounting notice

- 1) Use rosin-based flux. Do not use strong acid flux with halide content over 0.2wt%.
- 2) Do not use ultrasonic cleaning with too much output to avoid deteriorating the strength of the terminal electrodes or cracking in the solder and/or ceramic bodies of the products. The followings are recommended conditions for ultrasonic cleaning.
Frequency : less than 40 kHz
Output : less than 20 W/L
Cleaning time : less than 5 min
- 3) Too much soldering may cause mechanical stress resulting in cracking. The amount of solder shall be controlled as the height of fillet is 1/2 to 1/3 of the thickness of the product.

- 4) Choose a mounting position that minimizes the stress imposed on the chip during bending of the board.
- 5) Since dividing or breaking of the PC boards may cause mechanical stress in the products on the PC boards, it shall be done carefully by using a jig to prevent the product from mechanical damage.

■Resin coating

- 1) Decomposition gas or chemical reaction vapor of some type of resins may remain inside the resin during the hardening period or normal storage, resulting in deterioration of the performance of the products.
- 2) When a hardening temperature of resin is higher than the operating temperature, the stresses generated by the excess heat may lead to damage or destruction of the product.
- 3) Stress caused by a resin's temperature generated expansion and contraction may damage the products.
The use of such resins, molding materials etc. is not recommended.

使用注意事项

HANDLING PRECAUTIONS

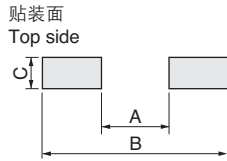
■推荐焊盘布局 Recommended land pattern.

基本设计

Board design

1.LZA05, LZA10

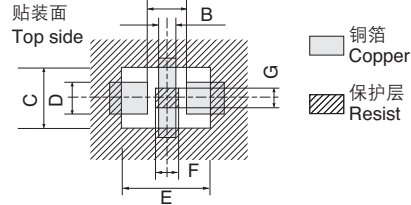
回流焊接 Reflow soldering

单位:mm
Unit:mm

型号 Type	LZA05	LZA10
形状 Size	1.0×0.5	1.6×0.8
A	0.4	0.7
B	1.4	2.0
C	0.5	0.7

2.LCA10, LFA10, LFB10

回流焊接 Reflow soldering

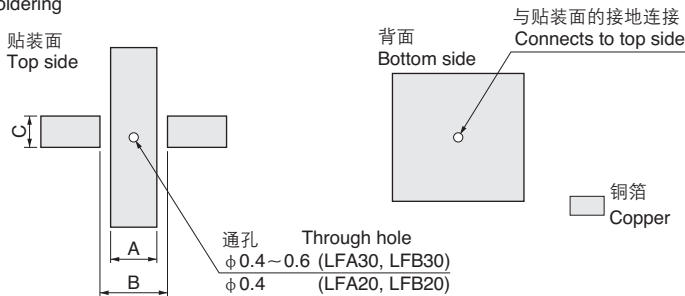
单位:mm
Unit:mm

型号 Type	LCA10 LFA10 LFB10
形状 Size	1.6×0.8
A	1.15
B	0.45
C	1.6
D	0.8
E	2.5
F	0.6
G	0.4

建议经通孔连接到地线
Connection to ground pattern via through hole recommended

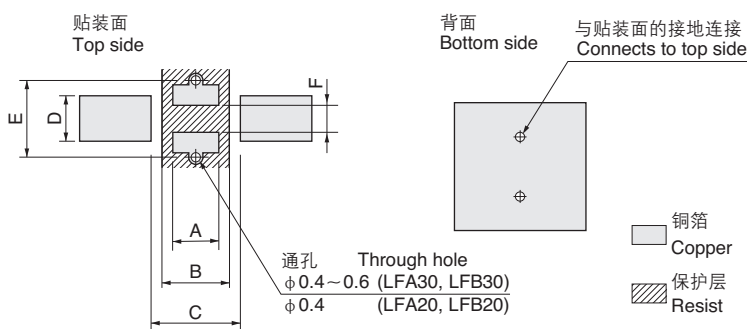
3.LCA20, LFA20, LFB20, LFA30, LFB30

回流焊接 Reflow soldering

单位:mm
Unit:mm

型号 Type	LCA20 LFA20 LFB20	LFA30 LFB30
形状 Size	2.0×1.25	3.2×1.6
A	0.6	1.3
B	1.5	2.3
C	1.0	1.3

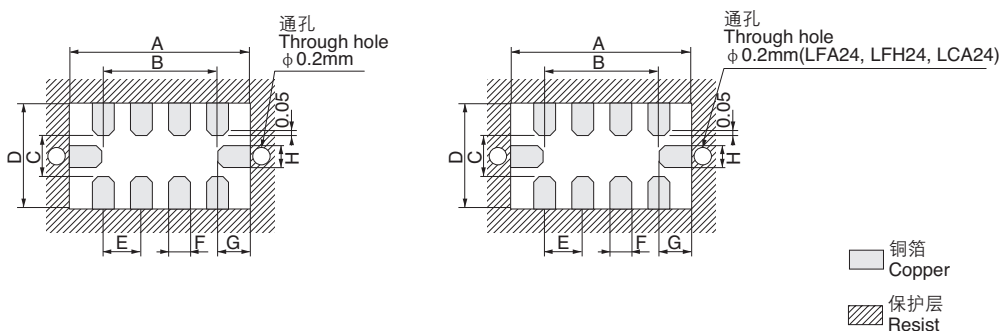
流动焊接 Flow soldering

单位:mm
Unit:mm

型号 Type	LCA20 LFA20 LFB20	LFA30 LFB30
形状 Size	2.0×1.25	3.2×1.6
A	0.6	1.3
B	0.8	1.5
C	1.5	2.3
D	1.0	1.3
E	2.2	3.0
F	0.6	0.6

4.LFA14, LCA14, LCG14, LFA24, LFH24, LCA24

回流焊接 Reflow soldering

单位:mm
Unit:mm

型号 Type	LFA14 LCA14 LCG14	LFA24 LCA24	LFH24
形状 Size	1.6×0.8	2.0×1.25	2.0×1.0
A	2.2	2.6	2.6
B	1.2	1.5	1.5
C	0.5	0.75	0.63
D	1.4	1.85	1.73
E	0.4	0.5	0.5
F	0.15	0.25	0.25
G	0.5	0.55	0.55
H	0.15	0.23	0.23

共模滤波器(CMA12)

COMMON MODE FILTER (CMA12)

积层型共模滤波器CMA12系列是高性能共模滤波器，可有效降低LVDS等高速差分信号传输线的共模噪声。该产品采用陶瓷结构，粘接强度高、贴装可靠性优异，适用于便携式设备等的高速差分信号传输线。

■特点

- 小型、超薄
- 采用陶瓷结构，粘接强度高、贴装可靠性优异。
- 适用于便携式设备等的高速差分信号传输。

■用途

小型数字设备的USB、LVDS、IEEE1394等差分信号传输线用

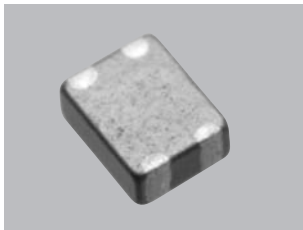
The common mode filter are highly effective to the common mode noise filtering for the differential signal lines of LVDS. It is suitable for differential signal lines of mobile equipments, because monolithic construction of ceramic realizes excellent adherence strength of terminations and high reliability in mounting.

■Features

- Ultra miniature and low profile type.
- Safe ceramic construction delivers excellent adherence strength of terminations and reliability of mouting.
- Excellent for differential signal lines in mobile equipments.

■Applications

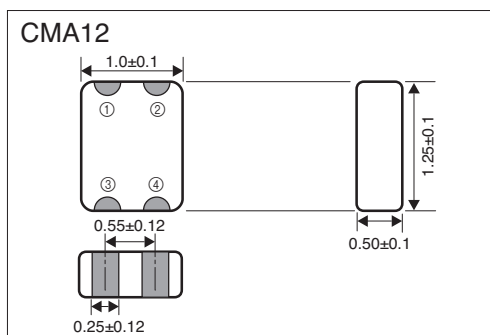
Differential signal lines for USB, LVDS or IEEE1394 used in compact dital equipment.



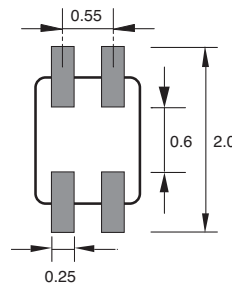
■型号构成 Part number system

CMA	12	—	2A	0H	900	M	T
系列名 Series	形状 Size 12:1.25×1.0mm (L) (W)		额定电流 Rated current 2A : 100mA	额定电压 Rated voltage 0H : 5V	共模阻抗 Common mode impedance 900 : 90Ω	共模阻抗容限 Common Mode Impedance Tolerance M : ±20%	包装形式 Packing form T : 带装 Taping B : 散装 Bulk

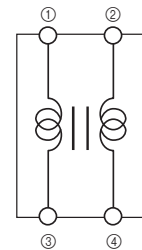
■形状・尺寸(mm) Dimensions (mm)



■推荐焊盘布局 Recommended Land Pattern



■等效电路 Equivalent circuits



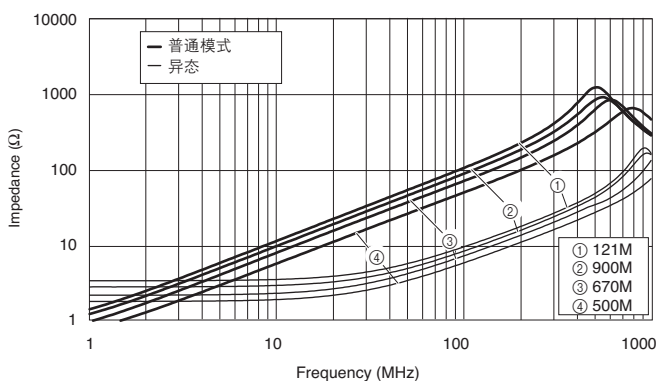
■型号一览表 Part number list

型 号 Part number	共模阻抗 Common mode impedance (Ω : 100MHz)	额定电压 Rated voltage	额定电流 Rated current	绝缘电阻 Insulation Resistance	使用温度范围 Operating Temp. range	断开频率 Cut-off frequency (参考值 Reference)
CMA12-2A0H500M□	50Ω	5V	100mA	100MΩmin.	-40°C ~ +85°C	580MHz
CMA12-2A0H670M□	67Ω					530MHz
CMA12-2A0H900M□	90Ω					530MHz
CMA12-2A0H121M□	120Ω					460MHz

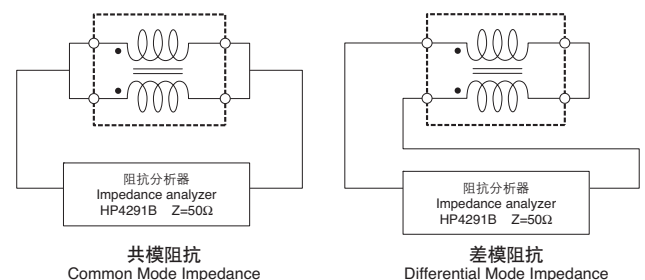
□ : T表示带装, B表示散装

□ : "T" stands for taping package and "B" stands for bulk package.

■阻抗特性(参考) Impedance Characteristics (Reference)



■测量电路 Measuring Circuit



CMB12系列是小型、薄型的高性能滤波器，适用于移动电话及移动音响设备等的音频信号线的降噪。采用全陶瓷结构，粘接强度高、贴装可靠性优异，特别适用于便携式设备的音频信号线。

The audio line filter (CMB12) are small-sized and highly effective to noise filtering for the audio lines for mobile phones and portable audio equipments. It is suitable for audio lines of mobile equipments, because monolithic construction of ceramic realizes excellent adherence strength of terminations and high reliability in mounting.

规格

- 形状: 1210(1.25×1.0mm)
- 额定电流: 500mA, 400mA, 100mA
- 额定电压: 5V DC
- 开放模式阻抗: 120, 150, 800, 1200Ω

用途

移动电话、移动音响设备等的音频信号线

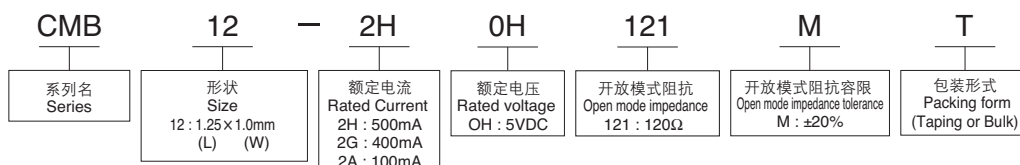
Specification

- Dimension: 1210(1.25×1.0mm)
- Rated current: 500mA, 400mA, 100mA
- Rated voltage: 5V DC
- Open mode Impedance: 120, 150, 800, 1200Ω

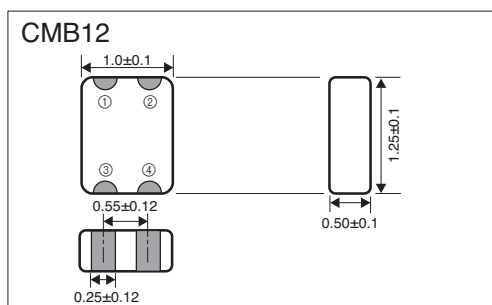
Applications

Audio lines for mobile phones and portable audio equipments.

型号构成 Part number system

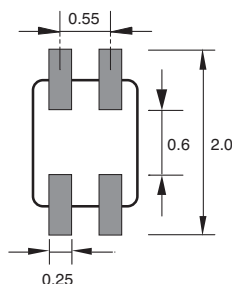


形状・尺寸(mm) Dimensions (mm)



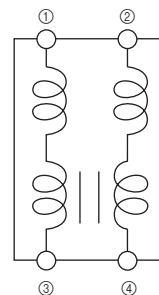
推荐焊盘布局

Recommended Land Pattern



等效电路

Equivalent circuits

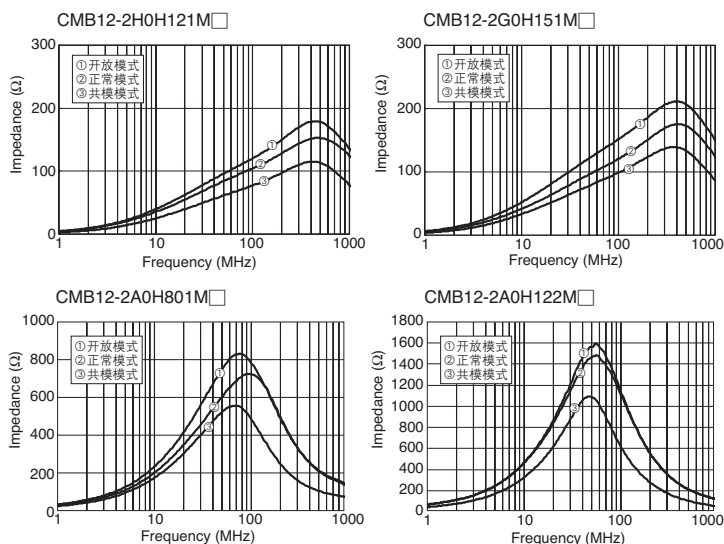


型号一览表 Part number list

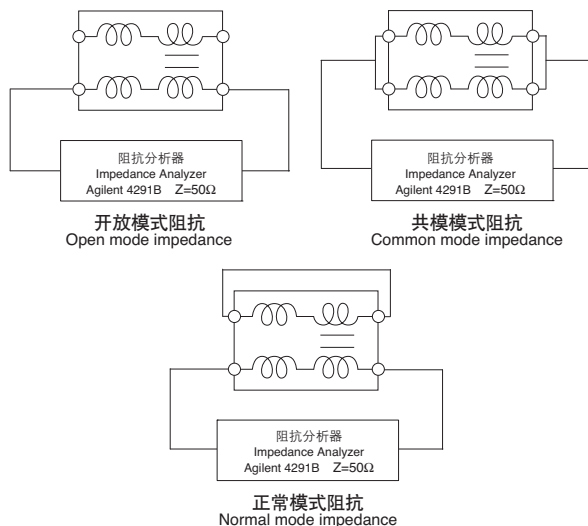
型号 Part number	开放模式阻抗 Open mode impedance (Ω:100MHz)	额定电压 Rated voltage	额定电流 Rated current	绝缘电阻 Insulation Resistance	使用温度范围 Operating Temp. range
CMB12-2H0H121M□	120Ω	5V	500mA	100MΩmin.	-40°C ~ +85°C
CMB12-2G0H151M□	150Ω		400mA		
CMB12-2A0H801M□	800Ω		100mA		
CMB12-2A0H122M□	1200Ω				

□: T表示带装, B表示散装
□: "T" stands for taping package and "B" stands for bulk package.

阻抗特性(参考) Impedance Characteristics (Reference)



测量电路 Measuring Circuit

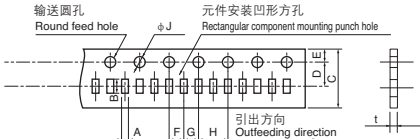
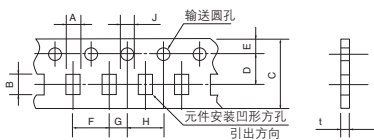
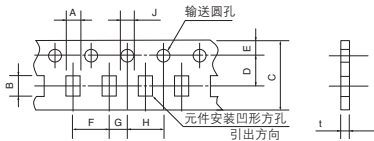
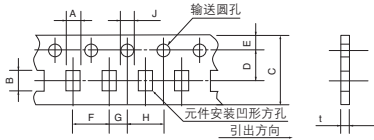
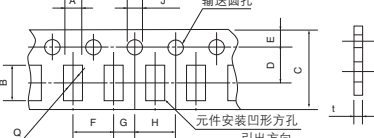
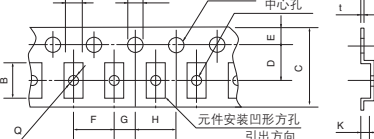
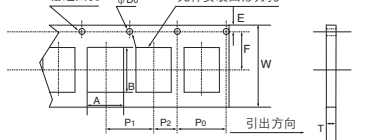
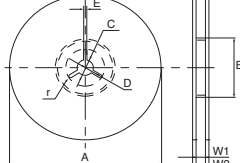


包装形式

PACKING FORM

EMI滤波器 EMI FILTERS

单位:mm
Unit:mm

包装记号 Packing code	品种 types	包装数量 Packing Qty.	包 装 形 式 Packing form																								
B	所有型号 All types	500	聚乙烯袋 Poly bag																								
T	LZA05	10,000		<table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr><tr><td>0.62 ±0.10</td><td>1.15 ±0.10</td><td>8.0 ±0.3</td><td>3.50 ±0.05</td><td>1.75 ±0.10</td></tr><tr><td>F</td><td>G</td><td>H</td><td>J</td><td>t</td></tr><tr><td>2.0 ±0.1</td><td>2.00 ±0.05</td><td>4.0 ±0.1</td><td>ø1.5 +0.1 -0</td><td>0.8以下 max</td></tr></table>	A	B	C	D	E	0.62 ±0.10	1.15 ±0.10	8.0 ±0.3	3.50 ±0.05	1.75 ±0.10	F	G	H	J	t	2.0 ±0.1	2.00 ±0.05	4.0 ±0.1	ø1.5 +0.1 -0	0.8以下 max			
	A	B	C	D	E																						
	0.62 ±0.10	1.15 ±0.10	8.0 ±0.3	3.50 ±0.05	1.75 ±0.10																						
	F	G	H	J	t																						
	2.0 ±0.1	2.00 ±0.05	4.0 ±0.1	ø1.5 +0.1 -0	0.8以下 max																						
	LCA10 LFA10 LFA14 LCA14 LCG14 LFB10	4,000		<table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr><tr><td>1.00 ±0.05</td><td>1.8 ±0.05</td><td>8.0 ±0.2</td><td>3.50 ±0.05</td><td>1.75 ±0.1</td></tr><tr><td>F</td><td>G</td><td>H</td><td>J</td><td>t</td></tr><tr><td>4.0 ±0.1</td><td>2.00 ±0.05</td><td>4.0 ±0.1</td><td>1.50^{+0.1}₋₀</td><td>0.7 ±0.1</td></tr></table>	A	B	C	D	E	1.00 ±0.05	1.8 ±0.05	8.0 ±0.2	3.50 ±0.05	1.75 ±0.1	F	G	H	J	t	4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	0.7 ±0.1			
	A	B	C	D	E																						
1.00 ±0.05	1.8 ±0.05	8.0 ±0.2	3.50 ±0.05	1.75 ±0.1																							
F	G	H	J	t																							
4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	0.7 ±0.1																							
LZA10	4,000		<table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr><tr><td>0.95 ±0.2</td><td>1.8 ±0.2</td><td>8.0 ±0.3</td><td>3.50 ±0.05</td><td>1.75 ±0.1</td></tr><tr><td>F</td><td>G</td><td>H</td><td>J</td><td>t</td></tr><tr><td>4.0 ±0.1</td><td>2.00 ±0.05</td><td>4.0 ±0.1</td><td>1.50^{+0.1}₋₀</td><td>1.1以下 max</td></tr></table>	A	B	C	D	E	0.95 ±0.2	1.8 ±0.2	8.0 ±0.3	3.50 ±0.05	1.75 ±0.1	F	G	H	J	t	4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	1.1以下 max				
A	B	C	D	E																							
0.95 ±0.2	1.8 ±0.2	8.0 ±0.3	3.50 ±0.05	1.75 ±0.1																							
F	G	H	J	t																							
4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	1.1以下 max																							
LCA20 LFA20 LFB20 LFA24 LCA24	4,000		<table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr><tr><td>1.62 ±0.2</td><td>2.4 ±0.2</td><td>8.0 ±0.3</td><td>3.5 ±0.05</td><td>1.75 ±0.1</td></tr><tr><td>F</td><td>G</td><td>H</td><td>J</td><td>t</td></tr><tr><td>4.0 ±0.1</td><td>2.0 ±0.05</td><td>4.0 ±0.1</td><td>1.50^{+0.1}₋₀</td><td>1.05 ±0.1</td></tr></table>	A	B	C	D	E	1.62 ±0.2	2.4 ±0.2	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1	F	G	H	J	t	4.0 ±0.1	2.0 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	1.05 ±0.1				
A	B	C	D	E																							
1.62 ±0.2	2.4 ±0.2	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1																							
F	G	H	J	t																							
4.0 ±0.1	2.0 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	1.05 ±0.1																							
LFH24	4,000		<table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td></tr><tr><td>1.20 ±0.08</td><td>2.20 ±0.08</td><td>8.0 ±0.2</td><td>3.50 ±0.05</td><td>1.75 ±0.10</td></tr><tr><td>F</td><td>G</td><td>H</td><td>J</td><td>t</td></tr><tr><td>4.0 ±0.1</td><td>2.00 ±0.05</td><td>4.0 ±0.1</td><td>1.50^{+0.1}₋₀</td><td>1.00 ±0.10</td></tr></table>	A	B	C	D	E	1.20 ±0.08	2.20 ±0.08	8.0 ±0.2	3.50 ±0.05	1.75 ±0.10	F	G	H	J	t	4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	1.00 ±0.10				
A	B	C	D	E																							
1.20 ±0.08	2.20 ±0.08	8.0 ±0.2	3.50 ±0.05	1.75 ±0.10																							
F	G	H	J	t																							
4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	1.50 ^{+0.1} ₋₀	1.00 ±0.10																							
LFA30 LFB30	2,000		<table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td></tr><tr><td>1.9 ±0.2</td><td>3.5 ±0.2</td><td>8.0 ±0.3</td><td>3.5 ±0.05</td><td>1.75 ±0.1</td><td>4.0 ±0.1</td></tr><tr><td>G</td><td>H</td><td>J</td><td>K</td><td>t</td><td>Q</td></tr><tr><td>2.0 ±0.05</td><td>4.0 ±0.1</td><td>1.55 ±0.1</td><td>1.20 ±0.2</td><td>0.25 ±0.05</td><td>1.15 ±0.05</td></tr></table>	A	B	C	D	E	F	1.9 ±0.2	3.5 ±0.2	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1	4.0 ±0.1	G	H	J	K	t	Q	2.0 ±0.05	4.0 ±0.1	1.55 ±0.1	1.20 ±0.2	0.25 ±0.05	1.15 ±0.05
A	B	C	D	E	F																						
1.9 ±0.2	3.5 ±0.2	8.0 ±0.3	3.5 ±0.05	1.75 ±0.1	4.0 ±0.1																						
G	H	J	K	t	Q																						
2.0 ±0.05	4.0 ±0.1	1.55 ±0.1	1.20 ±0.2	0.25 ±0.05	1.15 ±0.05																						
CMA12 CMB12	4,000		<table><tr><td>A</td><td>B</td><td>W</td><td>F</td><td>E</td></tr><tr><td>1.20 ±0.2</td><td>1.45 ±0.05</td><td>8.0 ±0.2</td><td>3.50 ±0.05</td><td>1.75 ±0.10</td></tr><tr><td>P₁</td><td>P₂</td><td>P₀</td><td>D₀</td><td>T</td></tr><tr><td>4.0 ±0.1</td><td>2.00 ±0.05</td><td>4.0 ±0.1</td><td>ø1.5^{+0.1}₋₀</td><td>0.68 ±0.05</td></tr></table>	A	B	W	F	E	1.20 ±0.2	1.45 ±0.05	8.0 ±0.2	3.50 ±0.05	1.75 ±0.10	P ₁	P ₂	P ₀	D ₀	T	4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	ø1.5 ^{+0.1} ₋₀	0.68 ±0.05				
A	B	W	F	E																							
1.20 ±0.2	1.45 ±0.05	8.0 ±0.2	3.50 ±0.05	1.75 ±0.10																							
P ₁	P ₂	P ₀	D ₀	T																							
4.0 ±0.1	2.00 ±0.05	4.0 ±0.1	ø1.5 ^{+0.1} ₋₀	0.68 ±0.05																							
	所有型号 All types		<table><tr><th>记号Code</th><th>A</th><th>B</th><th>C</th><th>D</th><th>E</th><th>W₁</th><th>W₂</th><th>r</th></tr><tr><td>RRM08B</td><td>ø180⁺⁰₋₃</td><td>ø60⁺¹₋₀</td><td>ø13.0 ±0.2</td><td>R10.5 ±0.4</td><td>2.0 ±0.5</td><td>9.0 ±0.3</td><td>11.4 ±1.0</td><td>0.5</td></tr></table>	记号Code	A	B	C	D	E	W ₁	W ₂	r	RRM08B	ø180 ⁺⁰ ₋₃	ø60 ⁺¹ ₋₀	ø13.0 ±0.2	R10.5 ±0.4	2.0 ±0.5	9.0 ±0.3	11.4 ±1.0	0.5						
记号Code	A	B	C	D	E	W ₁	W ₂	r																			
RRM08B	ø180 ⁺⁰ ₋₃	ø60 ⁺¹ ₋₀	ø13.0 ±0.2	R10.5 ±0.4	2.0 ±0.5	9.0 ±0.3	11.4 ±1.0	0.5																			