

EMI Filter - Quick Summary Guide

Why Choose Murata's EMI Filters?






Murata Electronics is the largest supplier of Passive Components and the premiere source for EMI Filtering Solutions!

- Murata offers the broadest noise suppression products and advanced testing methods in the industry.**
 - First manufacturer of chip ferrite beads.
 - Highly experienced R&D team testing major applications using the most sophisticated techniques.
 - Unique noise suppression components based on the experience gained from solving distinct noise suppression problems.
- Vertically integrated materials development leads to superior finished products.**
- Excellent customer support provided by our broad sales and engineering team.**

Ferrite Beads - "BLM" series

Advantages:

- Broadest selection in the industry of various sizes and electrical characteristics.
- Largest production capacity offers superior delivery and cost effectiveness.
- Innovative technology, knowledge and experience for solving noise concerns.

Noise Frequency	Suitable Line	Murata Series	Impedance @ 100MHz Range (ohm) Rated Current (mA) (For DC Power Line items)				
			01005 	0201 	0402 	0603 	0805 
Low & Middle Frequency Range (100M -1GHz)	For General Signal line	BLM**A	10-120Ω	10-1000Ω	10-1000Ω	120-1000Ω	120-1000Ω
	For High Speed Signal line	BLM**B	-	10-120Ω	5-1800Ω	5-2500Ω	5-2700Ω
	For DC Power Line	*BLM**P	-	22,33Ω 0.75, 0.9A	10-120Ω 1 - 2.2A	30-470Ω 0.5 - 3A	22-330Ω 1.5 - 6A
		BLM**K	-	-	-	26-600Ω 1.3 - 6A	-
		BLM**S	-	-	-	26-330Ω 1.5 - 6A	-
High Frequency Range (1-2GHz)	For General/High Speed Signal line	BLM**H	-	-	120-1800Ω	100-1800Ω	-
	For DC Power Line	BLM**E BLM**HE	-	-	120-220Ω 0.7 - 1.5A	100-1500Ω 0.5 - 2A	-
Ultra-High Frequency Range (over 2GHz)	For General/High Speed Signal line	BLM**G	-	-	75-470Ω	470Ω	-

* 1206 and 1806 size are also focused sizes in BLM**P series.

BLM31(1206 size): Impedance range: 33 - 600 ohm Rated Current: 1.5 - 6A

BLM41(1806 size): Impedance range: 60 - 1000 ohm Rated Current: 1.0 - 6A

**Chip Size 01005(0.4 x 0.2mm) → BLM02 0201(0.6 x 0.3mm) → BLM03 0402 (1.0 x 0.5mm) → BLM15

0603(1.6 x 0.8mm) → BLM18 0805(2.0 x 1.25mm) → BLM21

When it comes to EMI Filtering Solutions, Think Murata!

EMI Filter - Quick Summary Guide Cont.

Common Mode Choke Coil - "DLW" / "DLP" series

Advantages:

- Largest variety of solutions for the most popular applications.
- Improvement in noise suppression performance over discrete component solutions.
- Experienced R&D team continuously evaluates solutions for new industry standards.
- Vast production capacity offers superior delivery and cost effectiveness.

	Murata Part Number	L x W Max Height (mm)	Application	Common Mode Impedance (ohm) at 100MHz Idc / DCR													
				Appearance	35	67	90	120	160	180	200	220	240	260	280	330	340
Film	DLP0N_HL2	0.85x0.65 0.5	USB, IEEE1394			110mA 2.4Ω	100mA 3.0Ω	90mA 3.8Ω									
	DLP11SN_HL2/ SL2	1.25x1.0 0.92	USB, IEEE1394			180mA 1.3Ω	150mA 1.5Ω	140mA 12.0Ω	120mA 2.7Ω		110mA 3.1Ω	100mA 3.5Ω	90mA 4.2Ω	80mA 4.9Ω			
	DLP11SA_HL2	1.25x1.0 0.92	HDMI, DVI, Displayport		170mA 0.9Ω	150mA 1.2Ω	150mA 1.4Ω										
	*DLP2AD_HL4 (Array)	2.0x1.0 0.92	USB, IEEE1394			140mA 1.3Ω	130mA 1.7Ω	120mA 2.0Ω	100mA 2.5Ω		90mA 2.5Ω	80mA 3.8Ω	80mA 3.8Ω				
Wirewound	DLW21S_HQ2	2.0x1.2 1.4	HDMI, DVI, Displayport			320mA 0.31Ω	280mA 0.41Ω	280mA 0.41Ω									
	DLW21S_SQ2	2.0x1.2 1.4	USB, IEEE1394			400mA 0.25Ω	330mA 0.35Ω	370mA 0.3Ω		330mA 0.35Ω		300mA 0.4Ω				280mA 0.45Ω	
	DLW21H_SQ2	2.0x1.2 1.0	USB, IEEE1394			330mA 0.35Ω	330mA 0.35Ω	280mA 0.45Ω		250mA 0.5Ω							
						100	190	250	350	500	1000	1400	1500	3000			
	DLW5BT_SQ2	5.0x5.0 4.5	Power Line			6A 0.009Ω		5A 0.02Ω		4A 0.019Ω	2A 0.024Ω	1.5A 0.04Ω					
	DLW5BS_SQ2	5.0x5.0 4.5	Power Line				5A 0.02Ω		2A 0.04Ω		1.5A 0.06Ω		1A 0.1Ω	0.5A 0.3Ω			
					51uH	100uH											
	**DLW43SH_XK2	4.5x3.2 2.8	CANBUS, FlexRay			230mA 1.0Ω	200mA 2.0Ω										

*DLP2AD is an array type. Other ones are single type.

**DLW43SH series meets automotive requirements (AECQ200). Other ones do not meet automotive requirements.

3 Terminal Capacitor - "NFM" series for Power Lines

Advantages:

- Innovative three terminal construction with middle ground termination.
- Greatly improved noise suppression performance over two terminal chip capacitor.
- Experienced R&D team continuously evaluates solutions for new industry standards.

Murata Part Number	L x W Max Height (mm)	Working Voltage (Vdc)	Rated current (A)	Appearance	Capacitance range (μF)											
					Insulation Resistance (min.) (M ohm)											
					0.022	0.1	0.2	0.22	0.47	1.0	1.5	2.2	4.7	27		
NFM18PC	1.6x0.8 0.9 (1,2.2μF) 0.7 (Other μF)	16	2			1000										
		10	4									200				
		6.3	2					1000	1000	500		200				
NFM18PS	1.6x0.8 0.7	6.3	2						1000	500						
NFM21PC	2.0x1.25 0.95	25	2			1000										
		16	2					1000	1000							
		16	4							500						
		10	6											100		
		10	4								500					
		6.3	4									200				
NFM3DPC	3.2x1.25 0.9	50	2		1000											
NFM31PC	3.2x1.6 1.5	6.3	6												20	
NFM41PC	4.5x1.6 1.2	50	2				1000									
		25	6									300				
NFM55PC	5.7x5.0 2.5	50	6									100				

Additional advantages of using Murata are:

- All EMI Filters are RoHS compliant.
- Design evaluation kits are easily obtained through Murata's sales representatives.
- Superior engineering support tools

■ Free Design Tools Software: (EMI Filter Simulation, S-Parameters & Impedance) available online at www.murata.com/products/design_support