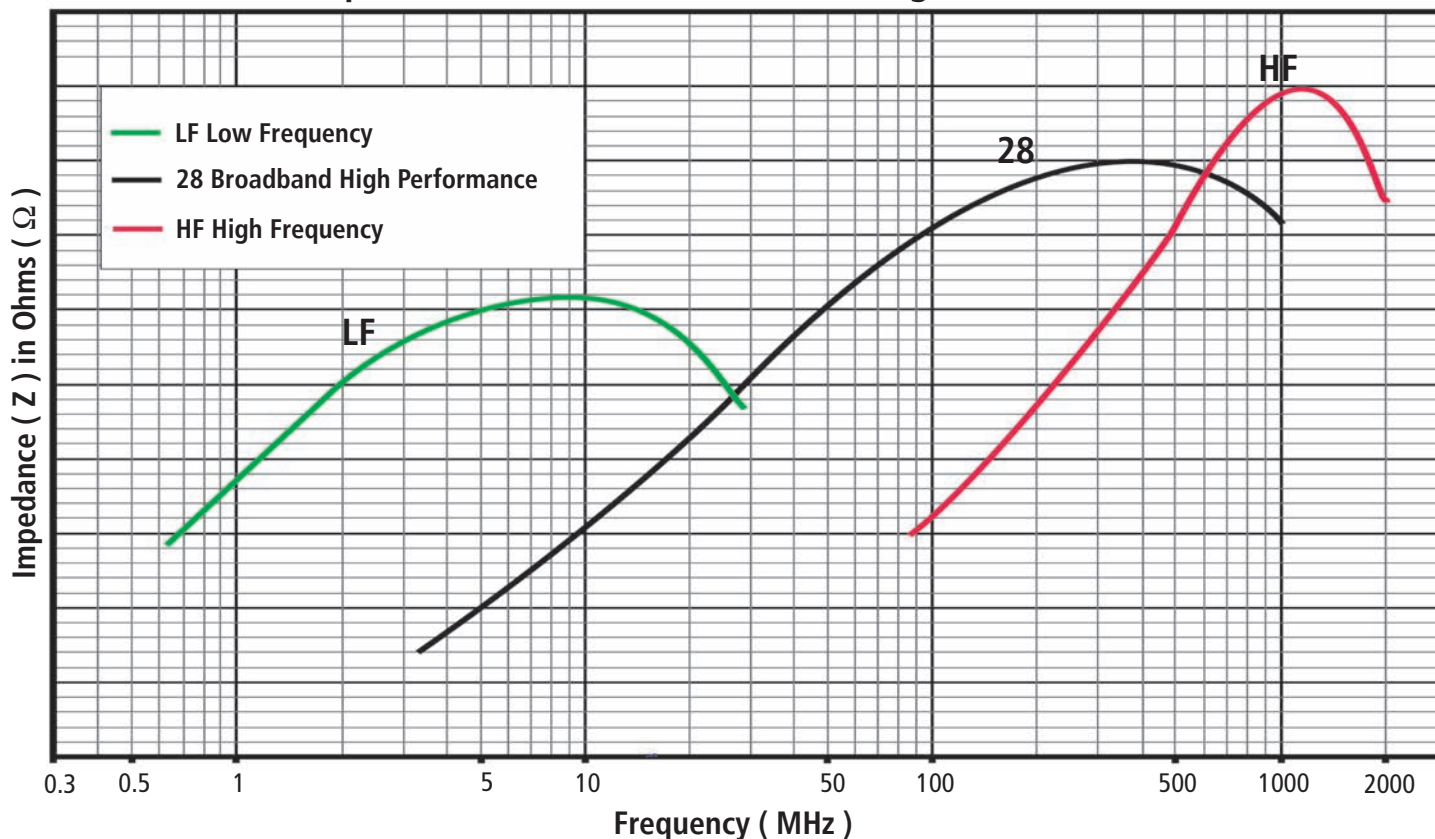


FERRITE MATERIAL COMPARISON

LF, 28, HF Material Impedance vs Frequency (300 KHz - 2 GHz)

Impedance Materials for Cable & Wiring Harness Cores

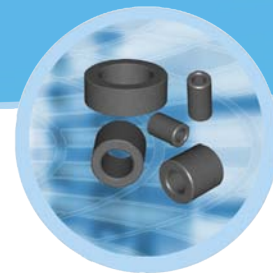


DESIGN & SELECTION "RULES OF THUMB"

- **Select the appropriate ferrite material** for the EMI frequency range to be attenuated (refer to cable core material impedance vs. frequency chart above).
- **Ferrite material composition affects core performance most.** High performance material is best. Cheap, low performance materials require the use of larger, heavier cores.
- **Shape (design) and mass of the ferrite core significantly affect impedance.**
- **Don't over size.** Use high performance ferrite material and select the smallest core that will do the job. High performance material allows the use of smaller, lighter and lower cost cores.
- **Select a ferrite core that fits** over the cable's outside dimensions. Core should slide easily over the cable during installation.
- **When possible, install a cable core over wires in a common-mode configuration** (out and back lines inside the same ferrite cable core). A differential cable pair inside the same core will make the ferrite core a common mode choke that is not susceptible to saturation from very high currents.
- **Install the ferrite core near the noise source**
- **Additional turns through a core will provide multiple amounts of peak impedance.**
Example: Two wire turns provide 4 times the impedance of one turn (pass through) the ferrite core. Also, with each added turn, the peak impedance shifts to a slightly lower frequency.
- **Two piece split cores are available.** One-piece cylindrical or flat ribbon ferrite core shapes are usually preferable but, split cores can be used in applications where cores cannot slide over cable ends and connectors. Some split cores are available with snap-on plastic cases or metal clips.
- **Side by side impedance testing of ferrite cores is the best way to compare performance of different cores.**
Ferrite core impedance measurement equipment and test methods are not standardized in the industry. Every ferrite company has their own test methods. Catalog (web site) impedance data cannot be accurately compared.

Optimized, high performance, low cost custom part designs are available.

Low Frequency Ferrite EMI Cores



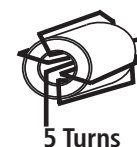
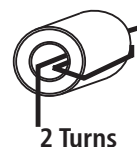
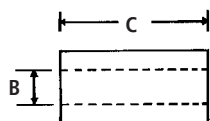
For Round Cables & Wiring Harnesses 300 KHz to 30 MHz Optimized

PART NUMBERING SYSTEM EXAMPLE

LF	B	090050	-0	0	0
Material Type	Product Code	Part Size Code (mm)	Selected Dimension Code (Usually Length)	Additional Part Description	Additional Part Description or Coating Code

All impedance values for high frequency cores are NET; NET impedance is impedance of the ferrite core only. All impedance contribution from the test wire and fixtures has been removed.

PART NUMBER	DIMENSIONS mm (inches)			Typical Impedance (Z) in Ohms (Ω)								
				Ω @ 500 KHz			Ω @ 1 MHz			Ω @ 5 MHz		
	A B C			# of Wire Turns			# of Wire Turns			# of Wire Turns		
				1	2	5	1	2	5	1	2	5
LFB090050-000	9.00 (0.354)	5.00 (0.197)	7.00 (0.275)	12	58	370	21	90	558	36	140	867
LFB095051-000	9.50 (0.374)	5.10 (0.201)	19.05 (0.750)	36	150	846	63	240	1464	86	340	2514
LFB127079-000	12.70 (0.500)	7.92 (0.312)	7.00 (0.276)	9	45	301	16	70	436	25	102	593
LFB143064-000	14.27 (0.562)	6.35 (0.250)	28.58 (1.125)	70	290	1757	122	490	2842	120	480	2646
LFB143064-100	14.27 (0.562)	6.35 (0.250)	13.46 (0.530)	33	145	626	57	220	1169	53	215	1552
LFB159079-000	15.88 (0.625)	7.87 (0.310)	28.58 (1.125)	61	250	1605	105	410	2615	100	390	2305
LFB174095-000	17.40 (0.685)	9.50 (0.374)	28.58 (1.125)	52	200	1290	91	350	2184	85	340	2044
LFB180100-000	18.10 (0.713)	10.00 (0.394)	10.00 (0.394)	18	75	493	31	138	809	29	115	722
LFB187102-000	18.67 (0.735)	10.16 (0.400)	28.58 (1.125)	53	200	1182	91	350	1969	84	330	1863
LFB220140-000	22.10 (0.870)	14.00 (0.551)	12.70 (0.500)	18	72	469	30	120	818	28	110	699
LFB250150-000	25.00 (0.984)	15.00 (0.591)	13.00 (0.512)	16	70	562	34	136	850	26	80	624
LFB259128-000	25.91 (1.020)	12.83 (0.505)	28.58 (1.125)	61	220	1446	106	420	2647	62	240	1487
LFB290190-000	28.98 (1.141)	19.05 (0.750)	15.21 (0.599)	19	90	533	34	155	963	22	70	513
LFB310190-000	31.00 (1.220)	19.00 (0.748)	13.00 (0.512)	19	80	523	33	143	845	22	88	554
LFB360230-300	36.00 (1.417)	23.00 (0.905)	15.00 (0.591)	24	96	614	27	110	653	19	75	438



This catalog lists a limited sample of available parts. Custom parts are also available.