EMI Core B-20 Series Bead Cores



Overview

The KEMET B-20 Series bead cores are designed for use on round cable. The wide range of MnZn and NiZn options allows for targeting of specific frequency ranges.

Benefits

- MnZn (≤ 100 MHz, AM band range) and NiZn (≤ 300 MHz, FM band range) options available
- Solid construction

Applications

· Consumer electronics



Turns and Impedance Characteristics

When the desired performance of an EMI core cannot be obtained with a single pass through the core, the impedance characteristics can be changed with multiple turns.

A turn is counted by the number of lead-wire windings which pass through the inner hole of the core. Windings on the outside of the core do not count. See Figure 1 for examples of one, two, and three turns.

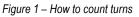
Adding turns will result in higher impedance while also lowering the effective frequency range. See Figure 2 for an example.

Core Material and Effective Frequency Range

There are two ferrite material options for KEMET EMI Cores: Nickel-Zinc (Ni-Zn) and Manganese-Zinc (Mn-Zn). Each core material has a different resistance and effective frequency range. The Mn-Zn core material has lower resistance compared to the Ni-Zn; therefore, be sure to provide adequate insulation before use.

For reference, the Ni-Zn core material is typically effective for the frequencies in the MHz band range such as the FM-band, while the Mn-Zn core material is typically effective for the kHz band range such as the AM-band. See Figure 3.

It is recommended to verify actual effectiveness in the target application with measurements.



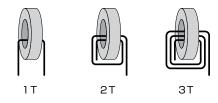
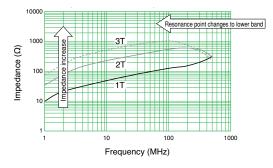
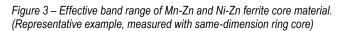
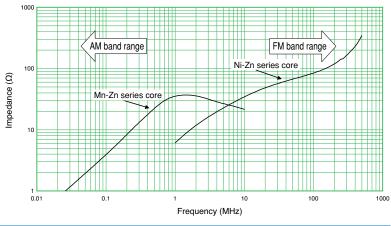


Figure 2 – Relationship between impedance and turn count. (Representative example: ESD-R-16C)

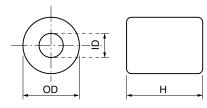








Dimensions – Millimeters



See Table 1 for dimensions

Environmental Compliance

All KEMET EMI cores are RoHS Compliant.



Table 1 – Ratings & Part Number Reference

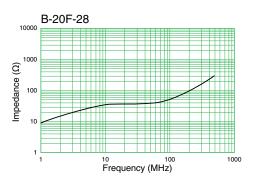
Part Number	Dimensions (mm)			Frequency Range ¹	
	OD	ID	Н	≤ 100 MHz (AM band range)	≤ 300 MHz (FM band range)
B-20F-28	2.8	1.3	3.0	Х	
B-20F-38	3.8	1.5	4.3	Х	
B-20F-46	4.6	1.5	4.3	Х	
B-20F-57	5.7	1.5	8.0	Х	
B-20L-25	2.5	1.0	1.2		Х
B-20L-34	3.4	0.8	4.4		Х
B-20L-44	4.4	1.6	7.0		Х
B-20L-48B	4.8	2.4	4.8		Х
B-20L-95B ²	9.7	4.8	4.2		Х

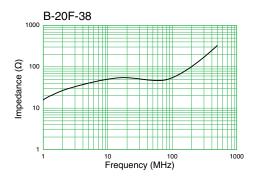
¹ Above frequency range is for reference only. Please test with actual device before use.

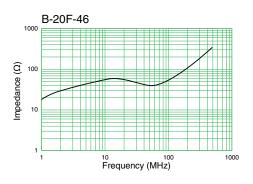
² Coated

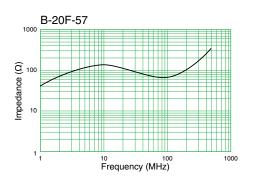


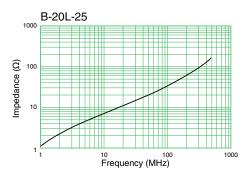
Impedance vs. Frequency

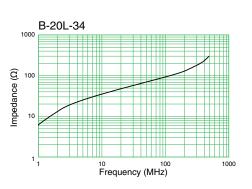


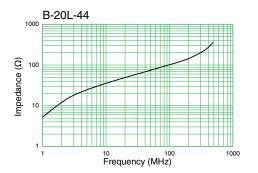


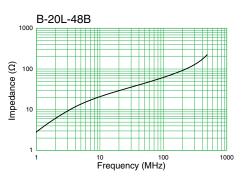






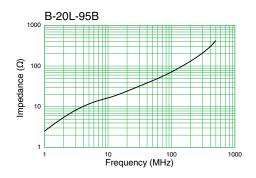








Impedance vs. Frequency Cont'd





KEMET Corporation World Headquarters

2835 KEMET Way Simpsonville, SC 29681

Mailing Address: P.O. Box 5928 Greenville, SC 29606

www.kemet.com Tel: 864-963-6300 Fax: 864-963-6521

Corporate Offices Fort Lauderdale, FL Tel: 954-766-2800

North America

Southeast Lake Mary, FL Tel: 407-855-8886

Northeast Wilmington, MA Tel: 978-658-1663

Central Novi, MI Tel: 248-994-1030

West Milpitas, CA Tel: 408-433-9950

Mexico Guadalajara, Jalisco Tel: 52-33-3123-2141

Europe

Southern Europe Paris, France Tel: 33-1-4646-1006

Sasso Marconi, Italy Tel: 39-051-939111

Central Europe Landsberg, Germany Tel: 49-8191-3350800

Kamen, Germany Tel: 49-2307-438110

Northern Europe Bishop's Stortford, United Kingdom Tel: 44-1279-460122

Espoo, Finland Tel: 358-9-5406-5000

Asia

Northeast Asia Hong Kong Tel: 852-2305-1168

Shenzhen, China Tel: 86-755-2518-1306

Beijing, China Tel: 86-10-5829-1711

Shanghai, China Tel: 86-21-6447-0707

Taipei, Taiwan Tel: 886-2-27528585

Southeast Asia Singapore Tel: 65-6586-1900

Penang, Malaysia Tel: 60-4-6430200

Bangalore, India Tel: 91-806-53-76817

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