

Overview

KEMET ESD-SR Series snap-on cores are designed for use on round cable and are available in a variety of sizes. EMI cores are part of a family of passive components which address the issues of noise or electromagnetic interference (EMI) in circuits or systems.

Benefits

- Snap-on convenience
- Split construction
- Temperature Index of 65°C
- Meets the requirements of UL94V-0
- CTI: Rank 0
- Broad range by simply adding turns

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 (NiZn) and Manganese Zinc (MnZn). Each core material has a different resistance and effective frequency range. The MnZn core material has a lower resistance compared to the NiZn; therefore, adequate insulation is required before use.

The NiZn core material is typically effective for frequencies in the MHz band range such as the FM-band, while the MnZn core material is typically effective for the kHz band range such as the AM-band. See Figure 3.

It is recommended to measure the actual frequency range effectiveness in the target application.

Figure 1 – How to count turns

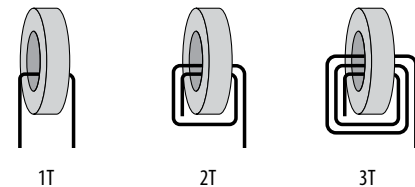


Figure 2 – Relationship between impedance and turn count. (Representative example: ESD-R-16C)

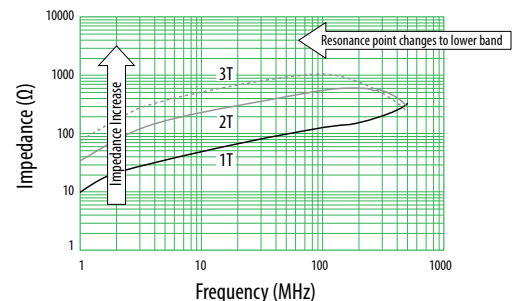
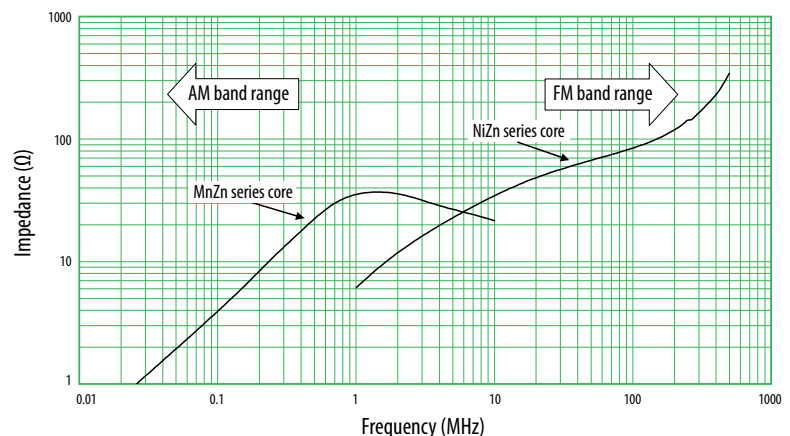
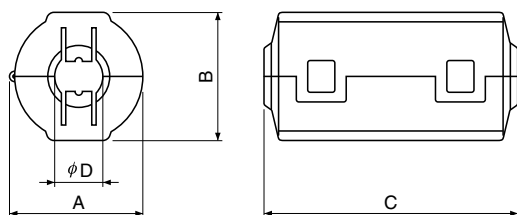


Figure 3 – Effective band range of MnZn and NiZn ferrite core material. (Representative example, measured with same-dimension ring core)

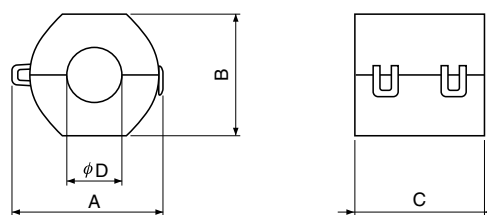


Dimensions – Millimeters

ESD-SR



ESD-SR-S



See Table 1 for dimensions

Environmental Compliance

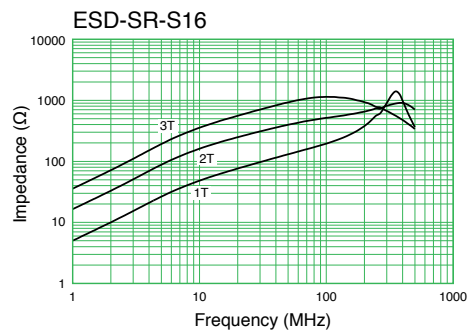
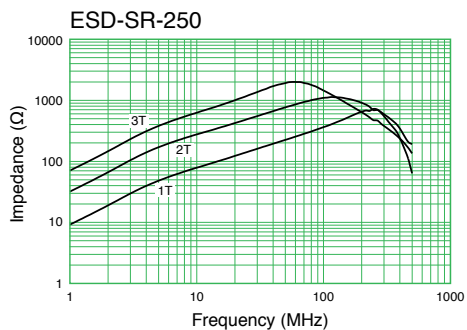
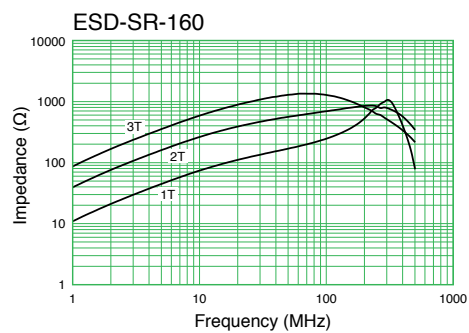
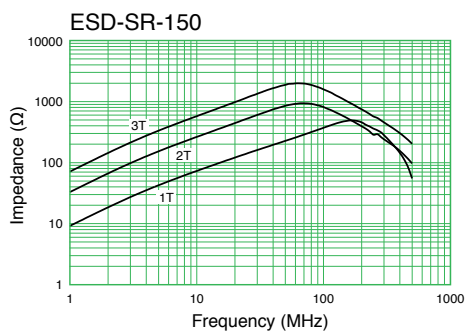
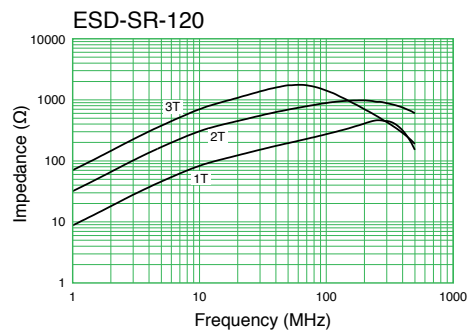
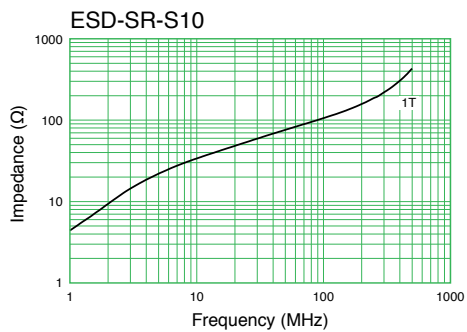
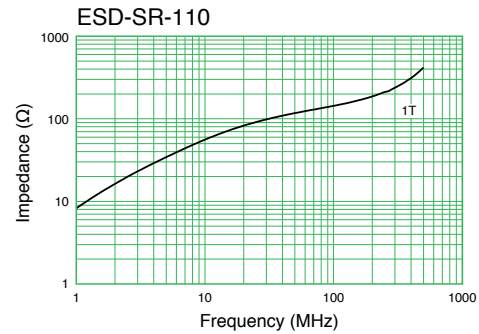
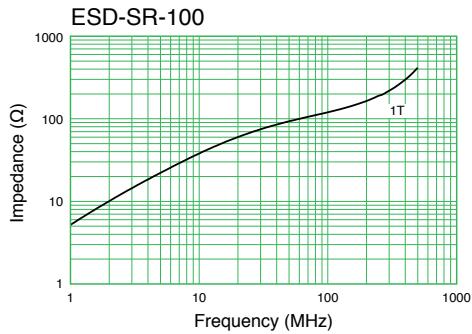
All KEMET EMI cores are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

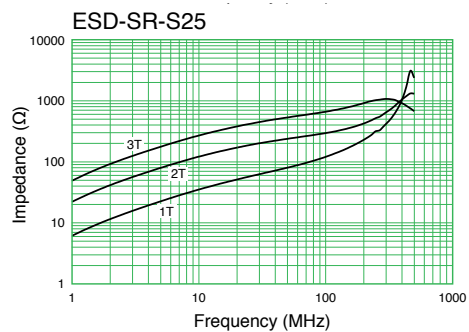
Part Number	Dimensions (mm)				Weight (g)	Case Color ¹
	A Maximum	B Maximum	C Maximum	ø D		
ESD-SR-100	16.5	16.5	21.0	≤ 6.0	7.2	Black, Gray, Violet
ESD-SR-110	14.4	14.2	28.0	≤ 5.0	6.9	Black, Gray, Violet
ESD-SR-S10	15.5	14.0	18.5	≤ 6.0	4.1	Black
ESD-SR-120	16.0	16.4	33.0	≤ 6.0	13.3	Black, Gray, Violet
ESD-SR-150	19.6	20.3	37.4	≤ 7.0	23.4	Black, Gray, Violet
ESD-SR-160	20.2	20.0	39.0	≤ 9.0	22.7	Black, Gray, Violet
ESD-SR-250	31.5	31.6	38.0	≤ 13.0	59.5	Black, Gray, Violet
ESD-SR-S16	23.0	20.0	20.5	≤ 8.0	12.9	Black
ESD-SR-S25	33.0	29.0	15.5	≤ 14.5	21.3	Black

¹ Case color code added to end of ESD-SR part number: Blank = black, G = gray, V = violet. ESD-SR-S series only available in black.

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: 248-306-9353

West

Milpitas, CA
Tel: 408-433-9950

Mexico

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

Europe

Southern Europe

Sasso Marconi, Italy
Tel: 39-051-939111

Skopje, Macedonia
Tel: 389-2-55-14-623

Central Europe

Landsberg, Germany
Tel: 49-8191-3350800

Kamen, Germany
Tel: 49-2307-438110

Northern Europe

Harlow, 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: 86-10-5877-1075

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

Seoul, South Korea
Tel: 82-2-6294-0550

Taipei, Taiwan
Tel: 886-2-27528585

Southeast Asia

Singapore
Tel: 65-6701-8033

Penang, Malaysia
Tel: 60-4-6430200

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

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Although all product-related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.