

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

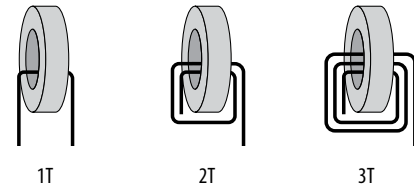


Figure 2 – Relationship between impedance and turn count. (Representative example: ESD-R-16C)

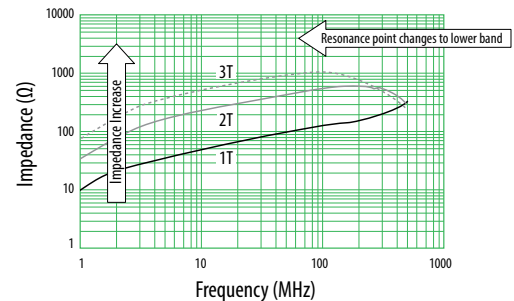
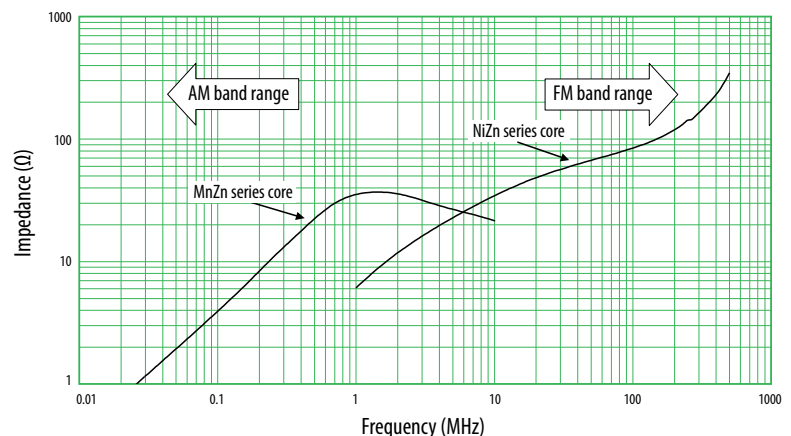
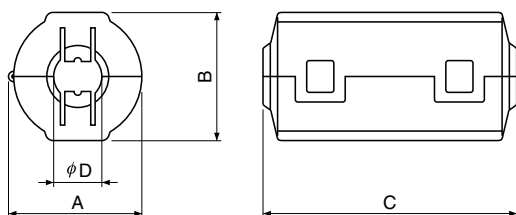


Figure 3 – Effective band range of MnZn and NiZn ferrite core material. (Representative example, measured with same-dimension ring core)

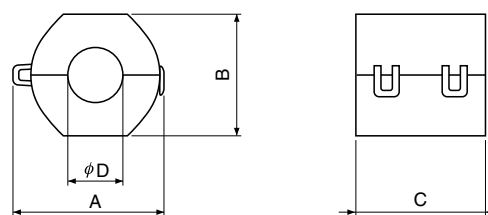


Dimensions – Millimeters

ESD-SR



ESD-SR-S



See Table 1 for dimensions

Environmental Compliance

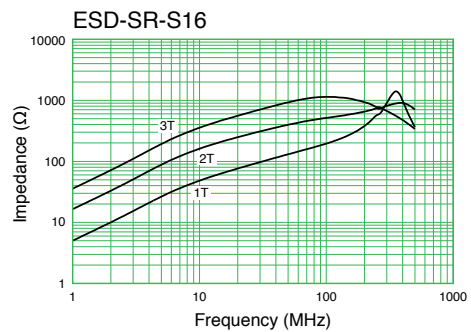
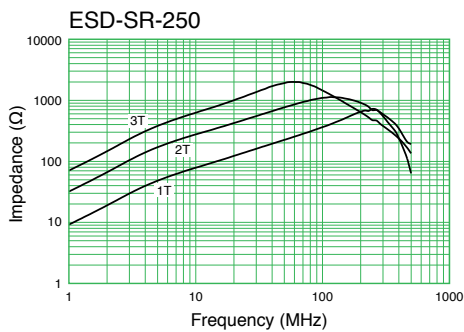
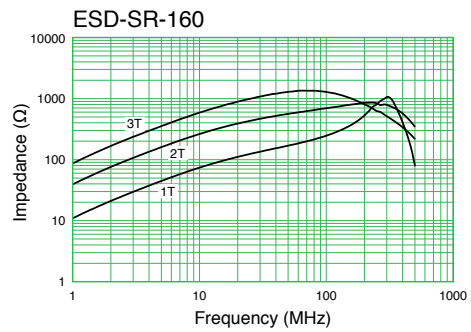
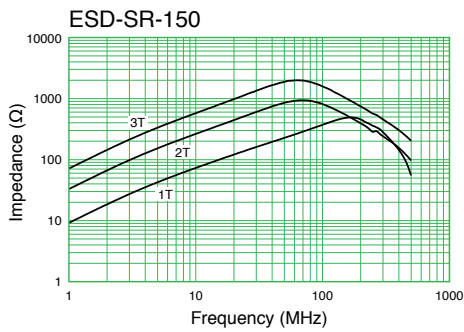
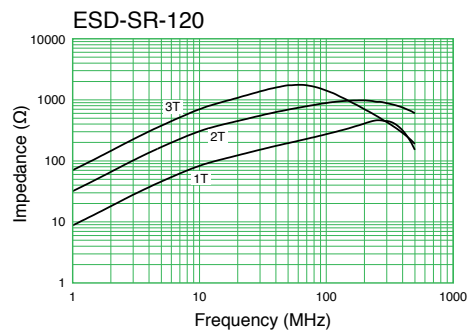
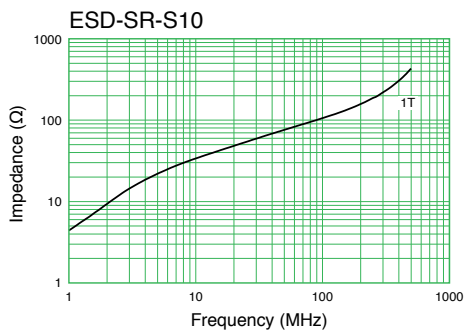
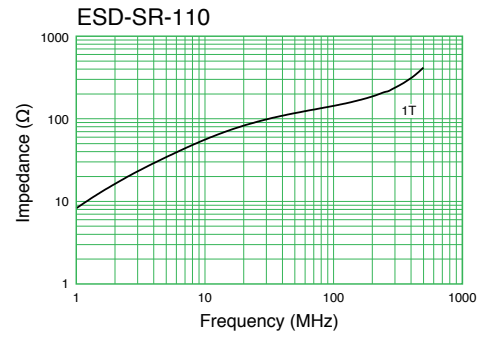
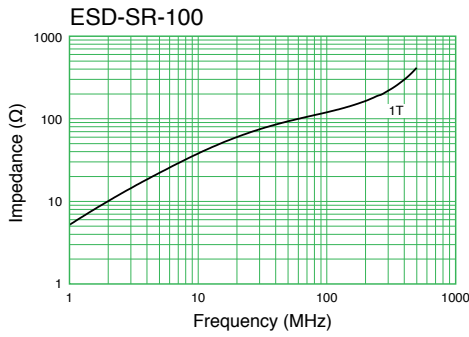
All KEMET EMI cores are RoHS Compliant.

Table 1 – Ratings & Part Number Reference

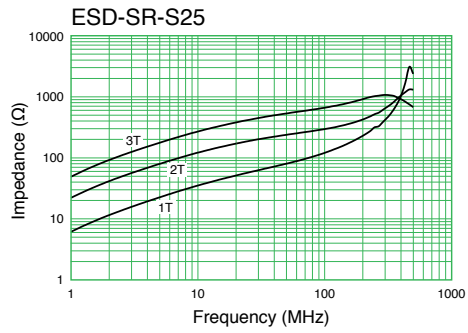
¹ Case color code added to end of ESD-SR part number: Blank = black, G = gray, V = violet. ESD-SR-S series only available in black.

Part Number	Dimensions (mm)				Weight (g)	Case Color ¹
	A Maximum	B Maximum	C Maximum	ϕD		
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

Impedance vs. Frequency



Impedance vs. Frequency Cont'd



KEMET Electronic Corporation Sales Offices

For a complete list of our global sales offices, please visit www.kemet.com/sales.

Disclaimer

All product specifications, statements, information and data (collectively, the "Information") in this datasheet are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed.

All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on KEMET Electronics Corporation's ("KEMET") knowledge of typical operating conditions for such applications, but are not intended to constitute – and KEMET specifically disclaims – any warranty concerning suitability for a specific customer application or use. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by KEMET with reference to the use of KEMET's products is given gratis, and KEMET assumes no obligation or liability for the advice given or results obtained.

Although KEMET designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

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.

KEMET is a registered trademark of KEMET Electronics Corporation.