

## Overview

The KEMET ESD-SR Series snap-on cores are designed for use on round cable and are available in a variety of sizes.

## Benefits

- Snap-on convenience
- Split construction
- Temperature Index: 65°C
- Flame Class: UL94V-0
- CTI: Rank 0

## 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 1 – How to count turns

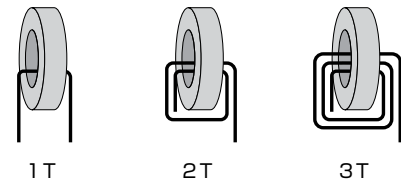


Figure 2 – Relationship between impedance and turn count. (Representative example: ESD-R-16C)

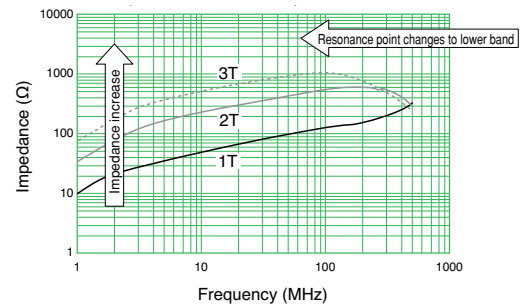
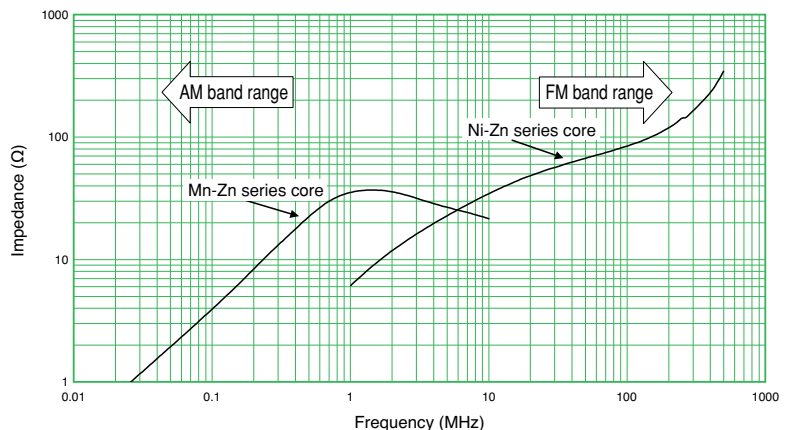
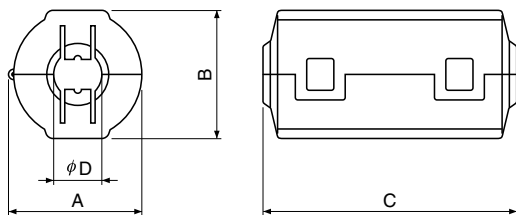


Figure 3 – Effective band range of Mn-Zn and Ni-Zn ferrite core material. (Representative example, measured with same-dimension ring core)

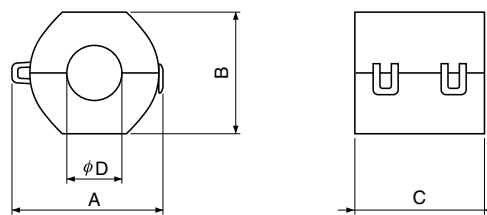


## Dimensions – Millimeters

### ESD-SR



### ESD-SR-S



See Table 1 for dimensions

## Environmental Compliance

All KEMET EMI cores are RoHS Compliant.



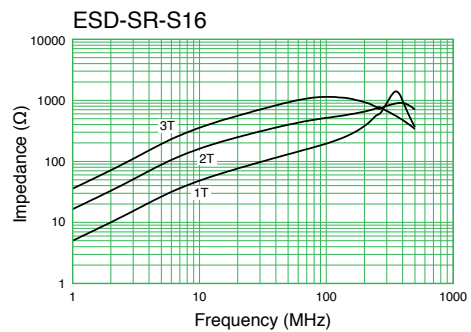
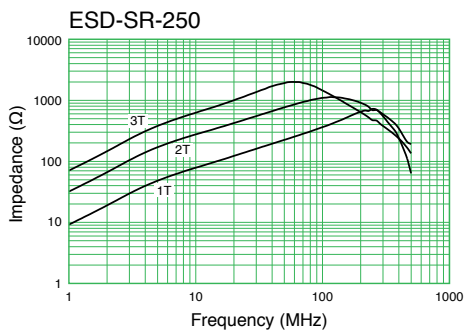
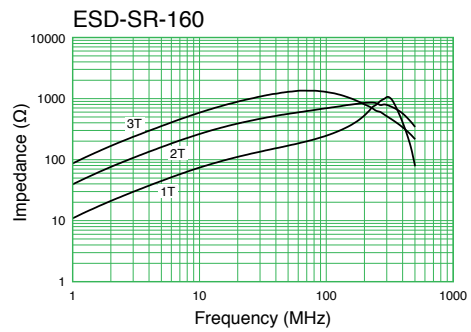
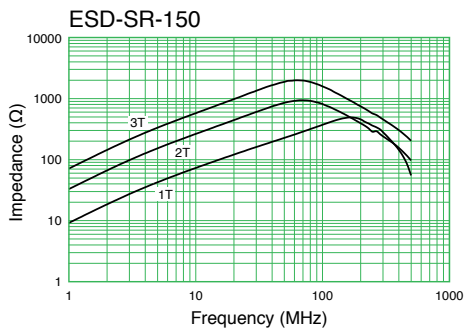
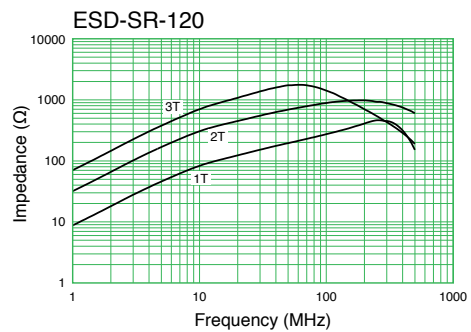
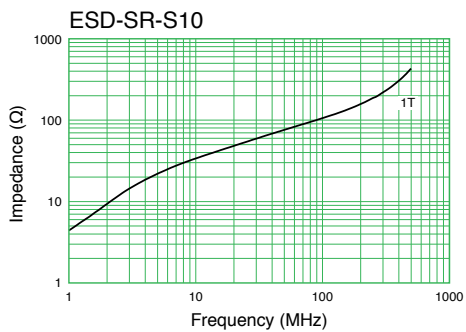
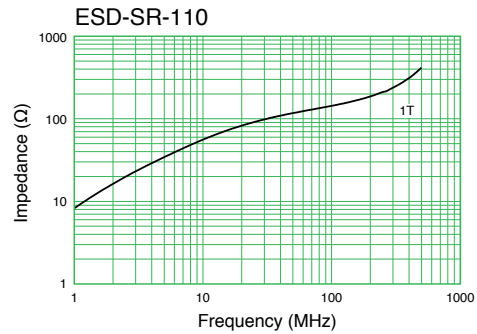
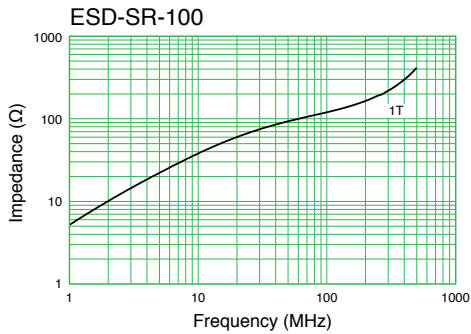
RoHS Compliant

## Table 1 – Ratings & Part Number Reference

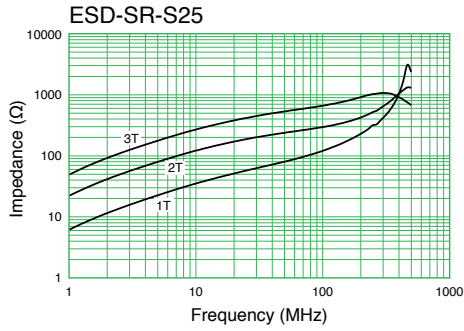
Part Number	Dimensions (mm)				Weight (g)	Case Color <sup>1</sup>
	A Maximum	B Maximum	C Maximum	$\phi D$		
ESD-SR-100	16.5	16.5	21.0	$\leq 6.0$	7.2	Black, Gray, Violet
ESD-SR-110	14.4	14.2	28.0	$\leq 5.0$	6.9	Black, Gray, Violet
ESD-SR-S10	15.5	14.0	18.5	$\leq 6.0$	4.1	Black
ESD-SR-120	16.0	16.4	33.0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

<sup>1</sup> 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



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