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Tel: +86-755-8981 8866 Fax: +86-755-8427 6832
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ESD-FPD Series Split Cores with Metal Clamp for Flat Cables

Overview

The KEMET ESD-FPD Series split cores are designed for use on flat cable. The series features a stainless steel clamp and is available in a variety of sizes.

Benefits

- Split construction
- Stainless steel clamp

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.

Figure 1 – How to count turns

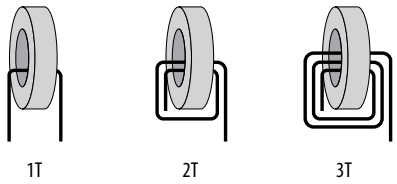
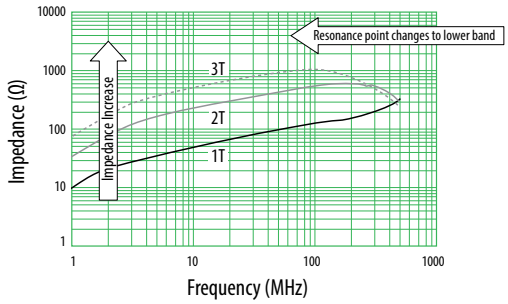


Figure 2 – Relationship between impedance and turn count. (Representative example: ESD-R-16C)



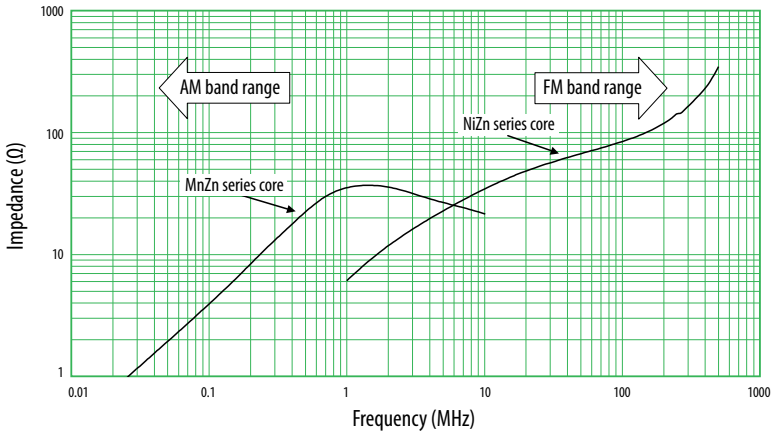
Core Material and Effective Frequency Range

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.

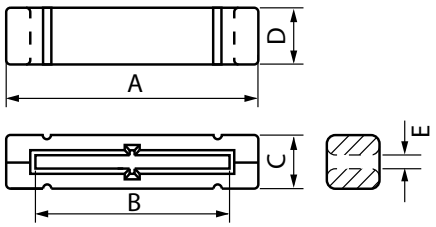
It is recommended to verify actual effectiveness in the target application with measurements.

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



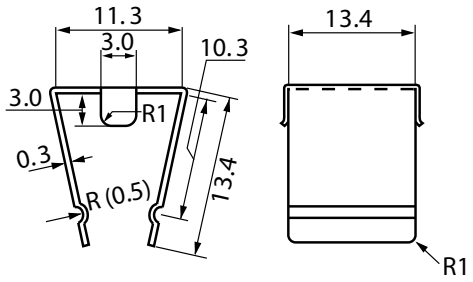
Dimensions – Millimeters

Core

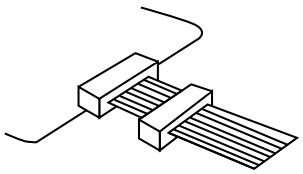


See Table 1 for dimensions

Clamp (Stainless Steel)



Installation Example



Environmental Compliance

All KEMET EMI cores are RoHS Compliant.

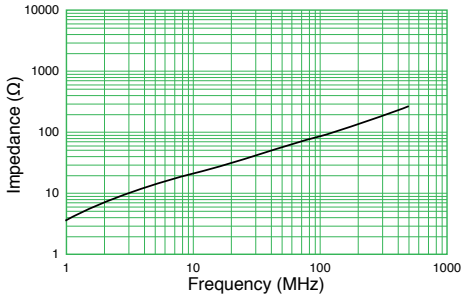
RoHS Compliant

Table 1 – Ratings & Part Number Reference

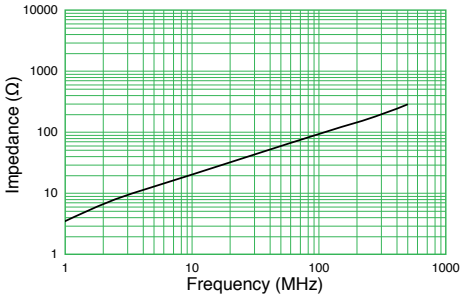
Part Number	Dimensions (mm)					Applicable Cable
	A	B	C	D	E	
ESD-FPD-16	37.0	25.4	10.0	12.7	2.6	16 Core
ESD-FPD-34	60.0	48.3	10.0	12.7	2.0	34 Core
ESD-FPD-40	68.0	56.0	10.0	12.7	2.0	40 Core
ESD-FPD-50	80.0	68.6	10.0	12.7	2.0	50 Core

Impedance vs. Frequency

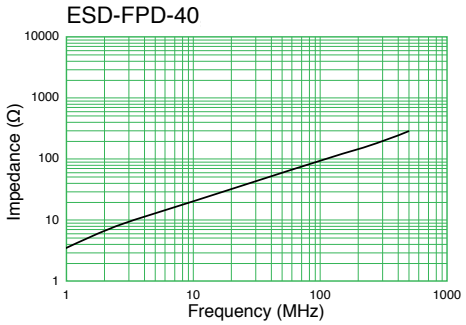
ESD-FPD-16



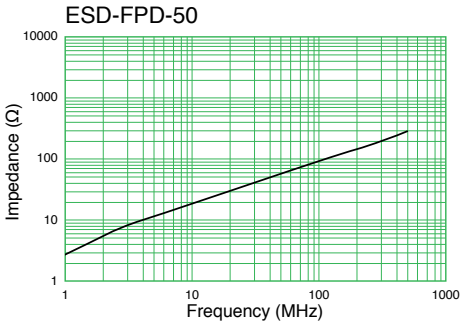
ESD-FPD-34



ESD-FPD-40



ESD-FPD-50



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