Common Mode SU Coils, 10VD Series, High Frequency Type

Overview

The KEMET SU coils are common mode chokes with a wide variety of characteristics. These gear type coils are designed with our proprietary ferrite UU cores and are useful in various noise countermeasure fields.

Applications

- Audio-visual equipment
- Office automation equipment
- Digital appliances
- Power supplies

Benefits

- Proprietary 700L ferrite material and equivalents
- High frequency
- Wide variety of sizes and specifications
- Operating temperature range from −25°C to +120°C
- UL 94 V–0 flame retardant rated bobbin

Part Number System

SU	10	VD-	10	020
Series	Core Size Code	Core Orientation	Rated Current (A)	Inductance (µH) Minimum
SU	10	VD = Vertical	x0 = x.0 A Example: 10 = 1.0 A	0xx = xx µH Example: 020 = 20 µH

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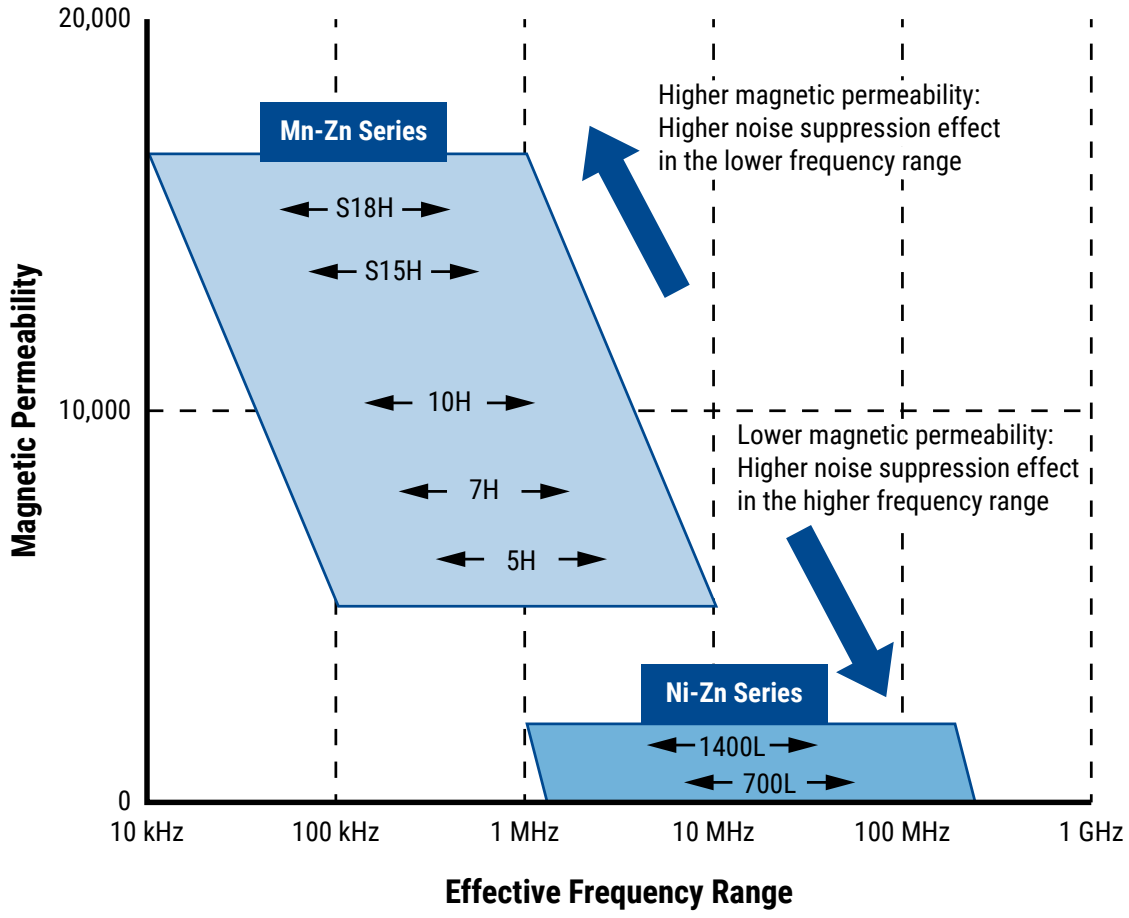
Magnetic Permeability of Ferrite Material

In order to achieve most efficient noise reduction, it is important to select the material according to the target frequency band. Depending on its magnetic permeability, a particular ferrite material will be effective in a certain frequency band. A schematic representation of the relationship between the magnetic permeability of each material and the corresponding effective band range is shown in Figure 1. Materials with higher magnetic permeability are effective in the lower frequency range, while those with lower magnetic permeability are effective in the higher frequency range. Thus, Mn-Zn products are mainly used for reducing conduction noise, while Ni-Zn products are commonly used for radiation noise countermeasures.

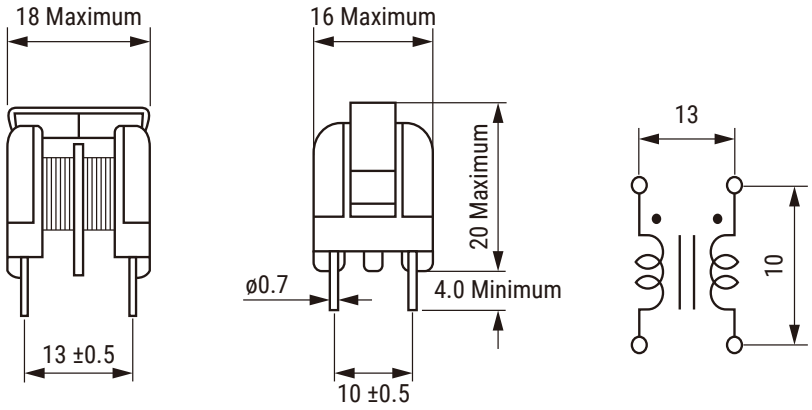
The effective frequency range varies depending on core shape, size and number of windings. This frequency dependence of the magnetic permeability as shown in the figure serves for reference purposes only and it should be tested on the actual device to determine its effectiveness.

S18H, S15H, 10H, 7H, 5H, 1400L and 700L are KEMET's proprietary ferrite material names. Other materials can also be available on request.

Figure 1 - Relationship between the magnetic permeability of each material and its effective frequency range



Dimensions – Millimeters



Environmental Compliance

All KEMET AC line filters are RoHS Compliant.

Performance Characteristics

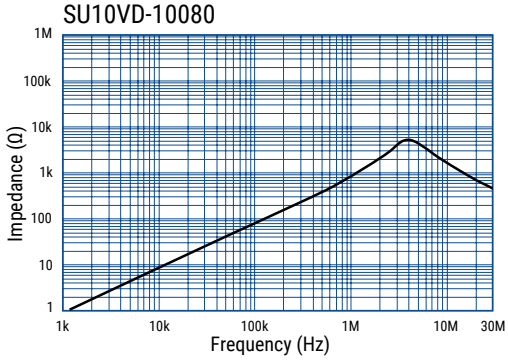
Item	Performance Characteristics
Rated Voltage	250 VAC
Withstanding Voltage	2,400 VAC (2 seconds, between lines)
Insulation Resistance	> 100 MΩ at 500 VDC (between lines)
Rated Current Range	1 – 2 A
Rated Inductance Range	10 – 80 µH minimum
Inductance Measurement Condition	1 kHz
Thermal Class	E (120°C)
Operating Temperature Range	–25°C to +120°C (include self temperature rise)

Table 1 – Ratings & Part Number Reference

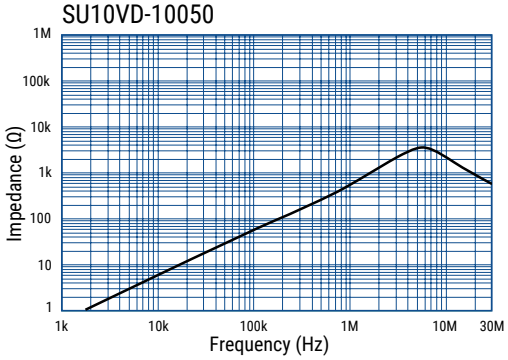
Part Number	Rated Current (A)	Inductance (µH) Minimum	DC Resistance/ Line (Ω) Maximum	Temperature Rise (K) Maximum	Marking	Weight (g) Approximate
SU10VD-10080	1	80	0.20	45	D10080	5.6
SU10VD-10050	1	50	0.20	45	D10050	5.5
SU10VD-10020	1	20	0.12	45	D10020	5.5
SU10VD-10010	1	10	0.10	45	D10010	5.7
SU10VD-20010	2	10	0.10	45	D20010	5.4

Frequency Characteristics

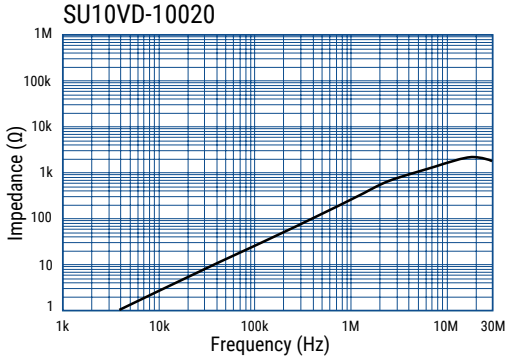
SU10VD-10080



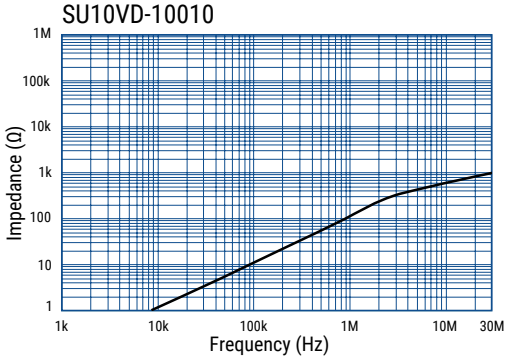
SU10VD-10050



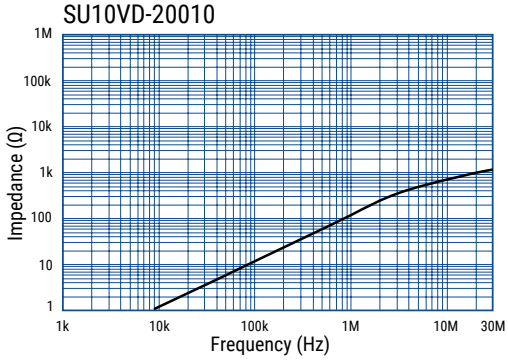
SU10VD-10020



SU10VD-10010



SU10VD-20010



Packaging

Type	Packaging Type	Pieces Per Box
SU10VD	Tray	700

Handling Precautions

Precautions for product storage
AC Line Filters should be stored in normal working environments. While the chokes themselves are quite robust in other environments, solderability will be degraded by exposure to high temperatures, high humidity, corrosive atmospheres, and long term storage.

KEMET recommends that maximum storage temperature not exceed 40°C and maximum storage humidity not exceed 70% relative humidity. Atmospheres should be free of chlorine and sulfur bearing compounds. Temperature fluctuations should be minimized to avoid condensation on the parts. Avoid storage near strong magnetic fields, as this might magnetize the product.

For optimized solderability, AC line filters stock should be used promptly and preferably within 6 months of receipt.

Product temperature rise values
The values listed for temperature rise are the result of self-heating in wires when the rated current (commercial frequency) is applied.

When using the product, check and evaluate the value of the core temperature rise under actual operating conditions.

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Телефон: 8 (812) 309-75-97 (многоканальный)
Факс: 8 (812) 320-03-32
Электронная почта: ocean@oceanchips.ru
Web: http://oceanchips.ru/
Адрес: 198099, г. Санкт-Петербург, ул. Калинина, д. 2, корп. 4, лит. А