Common Mode SS Coils, 21V/21VB Series

Overview

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

Applications

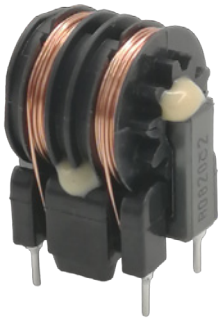
- Industrial equipment
- Audio-visual equipment
- Office automation equipment
- Digital appliances
- Power supplies

Benefits

- Proprietary 7H and 10H ferrite materials and equivalents
- Suitable for ≥ 150 kHz range
- Wide variety of sizes and specifications
- Operating temperature range from −40°C to +120°C
- UL 94 V–0 flame retardant rated base and bobbin
- High rated voltage up to 500 VAC

SS21V

SS21VB



Part Number System

SS	21	V	B-	03	1380
Series	Core Size Code	Core Orientation	Rated Voltage (VAC)	Rated Current (A)	Inductance (mH) Minimum
SS	21	V = Vertical	Blank = 250 VAC B = 500 VAC"	0x = 0.x A xx = x.x A Examples: 03 = 0.3 A 13 = 1.3 A	xxx0 = xxx mH 0xxx = xx mH 00xx = x.x mH 000x = 0.x mH Examples: 1380 = 138 mH 0179 = 17.9 mH 0026 = 2.6 mH 0008 = 0.8 mH

Magnetic Permeability of Ferrite Material

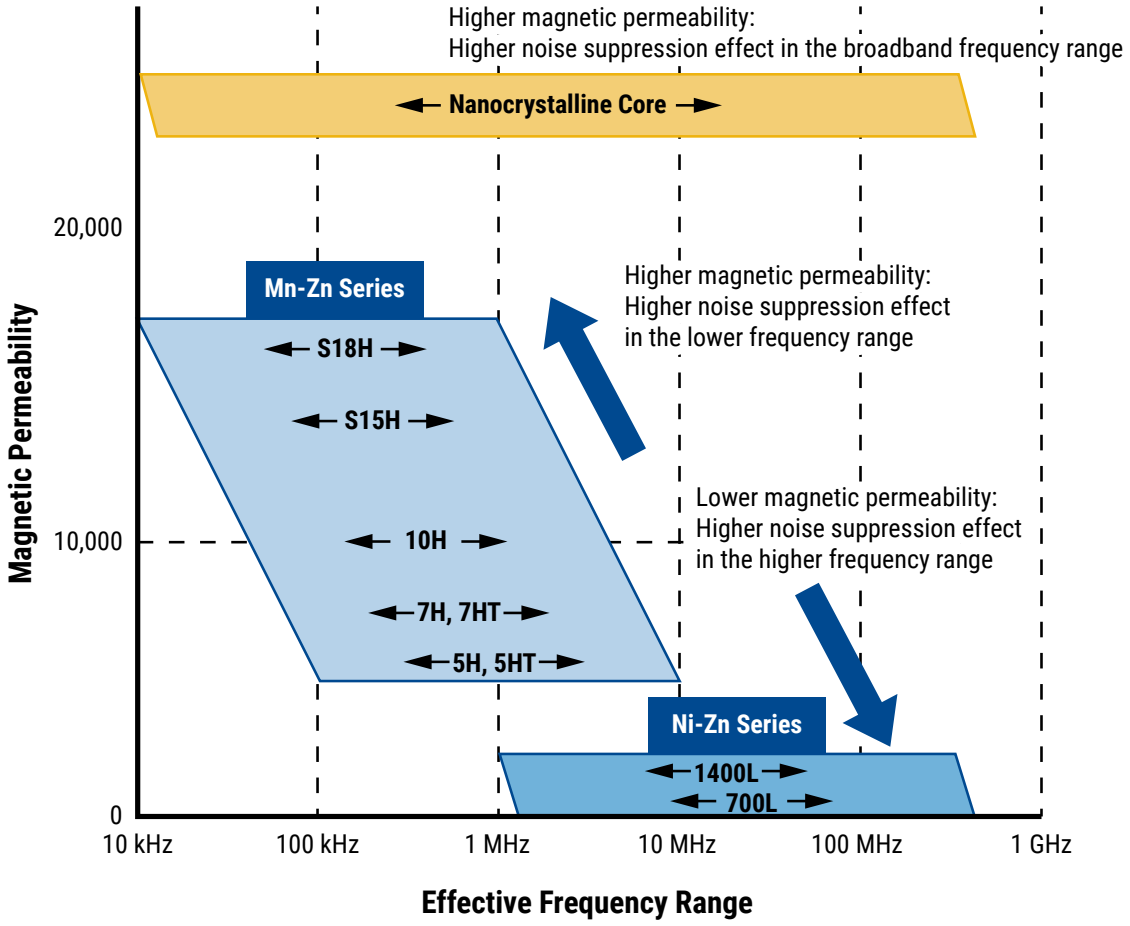
In order to achieve efficient noise reduction, it is important to select the material according to the target frequency band. Depending on its magnetic permeability, a particular ferrite material or metal material will be effective in a certain frequency band. A schematic representation of the relationship 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. Metal materials, however, are effective throughout the broadband frequency range, in low as well as high frequencies.

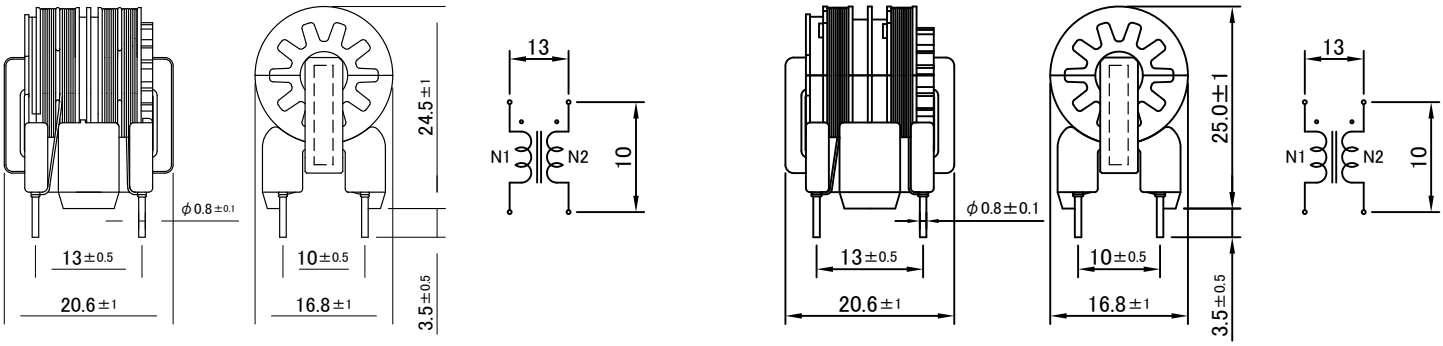
The effective frequency range varies depending on core shape, size, and number of windings. This frequency dependence of the magnetic permeability as shown in the figure serves for reference purposes only. It should be tested on the actual device to determine its effectiveness.

S18H, S15H, 10H, 7H, 7HT, 5H, 5HT, 1400L, and 700L are KEMET's proprietary ferrite material names. Other materials are available upon 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.

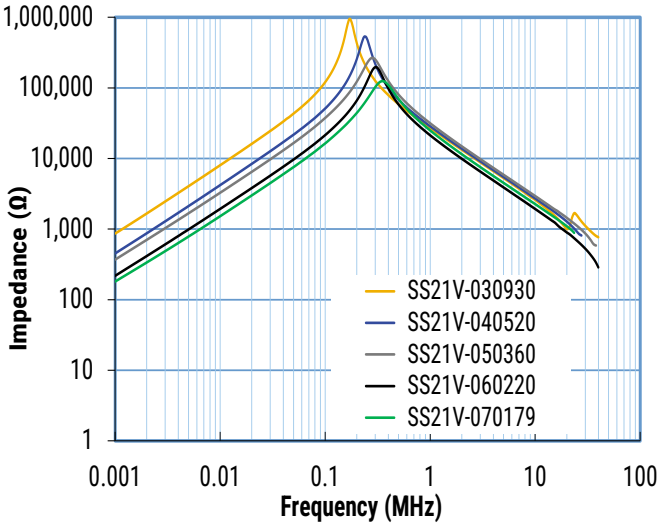
Performance Characteristics

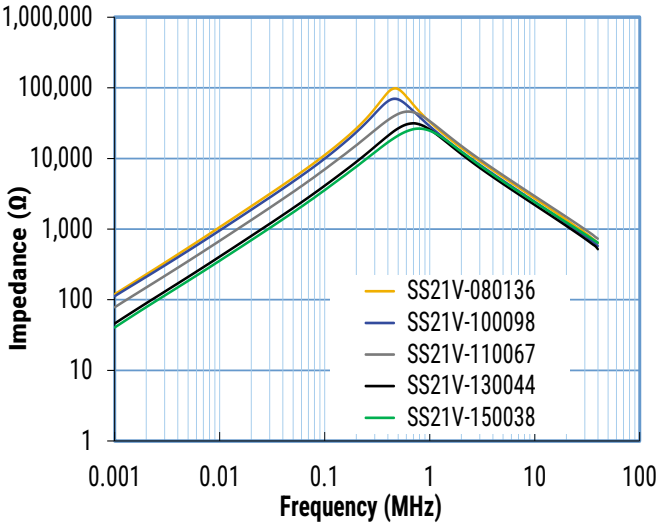
Item	Performance Characteristics
Rated Voltage	250 VAC (SS21V) and 500 VAC (SS21VB)
Withstanding Voltage	2,400 VAC (2 seconds, between lines)
Insulation Resistance	>100 MΩ at 500 VDC (between lines)
Rated Current Range	0.3 – 3.0 A
Rated Inductance Range	0.72 – 138 mH minimum
Inductance Measurement Condition	1 kHz
Thermal Class	E (120°C)
Operating Temperature Range	–40°C to +120°C (include self temperature rise)

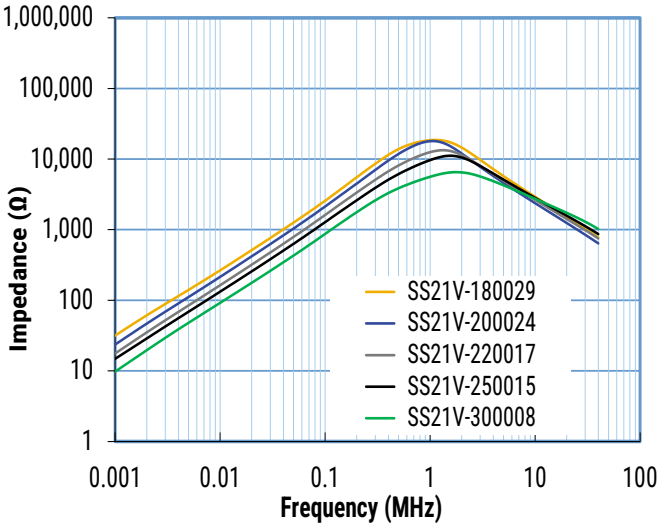
Table 1 – Ratings & Part Number Reference

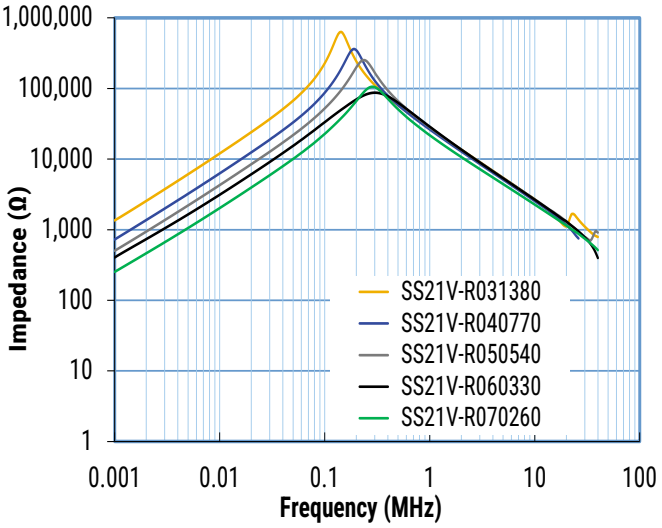
Part Number	Rated Current (A)	Inductance (mH) Minimum	DC Resistance/ Line (Ω) Maximum	Temperature Rise (K) Maximum	Marking	Weight (g) Approximate
SS21V-030930	0.3	93.0	5.90	50	03 Lot No.	12.3
SS21V-040520	0.4	52.0	5.40	50	04 Lot No.	12.2
SS21V-050360	0.5	36.0	2.40	50	05 Lot No.	12.2
SS21V-060220	0.6	22.0	1.50	45	06 Lot No.	12.9
SS21V-070179	0.7	17.9	1.10	50	07 Lot No.	13.2
SS21V-080136	0.8	13.6	0.80	45	08 Lot No.	13.4
SS21V-100098	1.0	9.8	0.60	50	10 Lot No.	13.1
SS21V-110067	1.1	6.7	0.45	45	11 Lot No.	12.8
SS21V-130044	1.3	4.4	0.35	50	13 Lot No.	11.5
SS21V-150038	1.5	3.8	0.30	50	15 Lot No.	12.4
SS21V-180029	1.8	2.9	0.20	45	18 Lot No.	13.3
SS21V-200024	2.0	2.4	0.15	50	20 Lot No.	12.6
SS21V-220017	2.2	1.7	0.13	45	22 Lot No.	12.7
SS21V-250015	2.5	1.5	0.10	50	25 Lot No.	12.3
SS21V-300008	3.0	0.8	0.07	50	30 Lot No.	11.7
SS21V-R031380	0.3	138.0	5.90	50	R03 Lot No.	12.3
SS21V-R040770	0.4	77.0	5.40	50	R04 Lot No.	12.2
SS21V-R050540	0.5	54.0	2.40	50	R05 Lot No.	12.2
SS21V-R060330	0.6	33.0	1.50	45	R06 Lot No.	12.9
SS21V-R070260	0.7	26.0	1.10	50	R07 Lot No.	13.2
SS21V-R080200	0.8	20.0	0.80	45	R08 Lot No.	13.4
SS21V-R100146	1.0	14.6	0.60	50	R10 Lot No.	13.1
SS21V-R110100	1.1	10.0	0.45	45	R11 Lot No.	12.8
SS21V-R130066	1.3	6.6	0.35	50	R13 Lot No.	11.5
SS21V-R150057	1.5	5.7	0.30	50	R15 Lot No.	12.4
SS21V-R180044	1.8	4.4	0.20	45	R18 Lot No.	13.3
SS21V-R200036	2.0	3.6	0.15	50	R20 Lot No.	12.6
SS21V-R220026	2.2	2.6	0.13	45	R22 Lot No.	12.7
SS21V-R250023	2.5	2.3	0.10	50	R25 Lot No.	12.3
SS21V-R300013	3.0	1.3	0.07	50	R30 Lot No.	11.7
SS21VB-R030613	0.3	61.30	4.146	35	R03 Lot No.	11.4
SS21VB-R040342	0.4	34.20	2.372	35	R04 Lot No.	11.6
SS21VB-R050254	0.5	25.40	1.723	40	R05 Lot No.	11.6
SS21VB-R060125	0.6	12.50	0.842	35	R06 Lot No.	11.8
SS21VB-R070099	0.7	9.90	0.658	30	R07 Lot No.	11.8
SS21VB-R080069	0.8	6.90	0.471	30	R08 Lot No.	11.8
SS21VB-R100055	1.0	5.50	0.373	30	R10 Lot No.	11.8
SS21VB-R110041	1.1	4.10	0.276	30	R11 Lot No.	11.9
SS21VB-R130033	1.3	3.30	0.226	35	R13 Lot No.	11.5
SS21VB-R150027	1.5	2.70	0.180	35	R15 Lot No.	12.1
SS21VB-R180018	1.8	1.80	0.124	30	R18 Lot No.	12.2
SS21VB-R200013	2.0	1.30	0.096	30	R20 Lot No.	11.9
SS21VB-R220010	2.2	1.00	0.072	30	R22 Lot No.	11.8
SS21VB-R250008	2.5	0.89	0.065	30	R25 Lot No.	11.3
SS21VB-R300007	3.0	0.72	0.054	35	R30 Lot No.	11.7

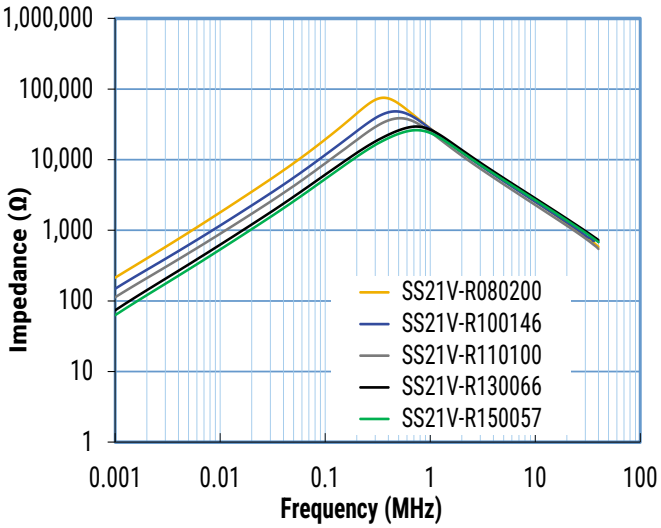
Frequency Characteristics

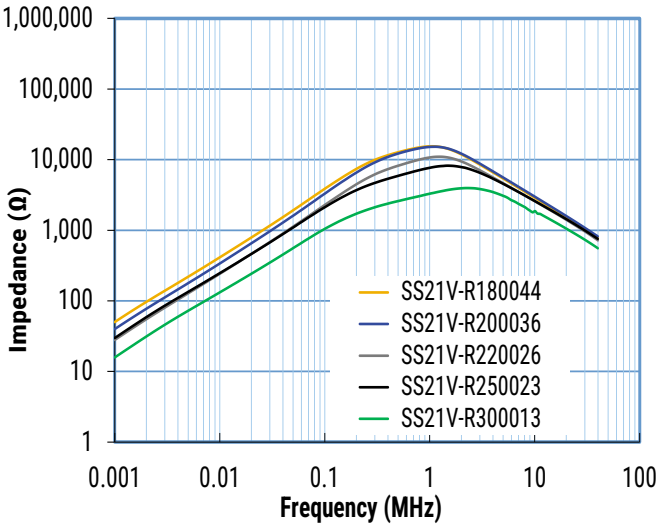




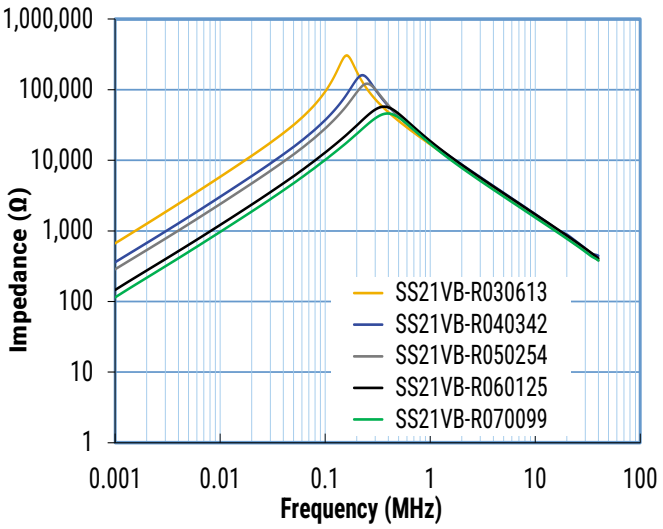


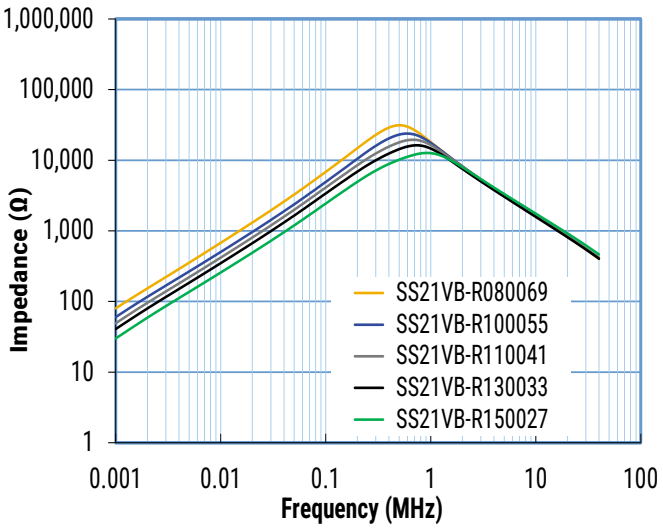


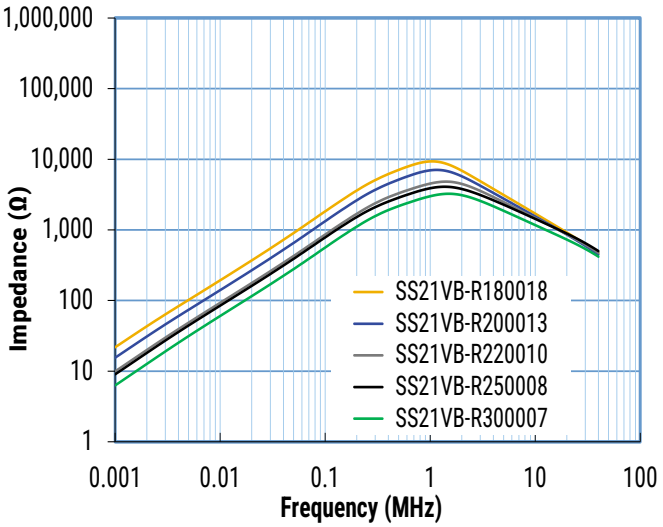




Frequency Characteristics cont.







Packaging

Type	Packaging Type	Pieces Per Box
SS21V	Tray	600
SS21VB		480

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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