Dual Mode SSHB Coils, 10HS Series, Wide Range Impedance Type

Overview

The KEMET SSHB coils are dual mode chokes with a wide variety of characteristics. These hybrid coils combine the two functions of normal mode countermeasure and common mode noise suppression, with just one coil. Reducing the number of required products ensures cost savings and space efficiency. Our proprietary core materials provide optimized solutions for high-temperature requirements (standard type) or for high permeability needs (R type). In addition, the specially developed shape is efficient with normal noise suppression.

Applications

- LED lighting
- Audio-visual equipment
- Office automation equipment
- Power supplies

Benefits

- Proprietary 5HT and 10H ferrite materials and equivalents
- Optimization of magnetic circuit and material
- One coil to suppress both common and normal noise
- High impedance in wide frequency range due to divided bobbin
- High permeability for R type
- Operating temperature range from −25°C to +130°C for standard type
- Operating temperature range from −25°C to +120°C for R type
- Low leakage magnetic flux to outside
- Compact size and low height
- UL 94 V–0 flame retardant rated base and bobbin

Part Number System

SSHB	10	HS-	R	04	620
Series	Core Size Code	Core Orientation and Bobbin Type	Core Type	Rated Current (A)	Inductance (mH) Minimum
SSHB	10	HS = Horizontal, bobbin with sectional winding structure	Blank = Standard R = High permeability	0x = 0.x A xx = x.x A Examples: 03 = 0.3 A 13 = 1.3 A	xx0 = xx mH xxx = xx.x mH 0xx = x.x mH Examples: 620 = 62 mH 122 = 12.2 mH 071 = 7.1 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.

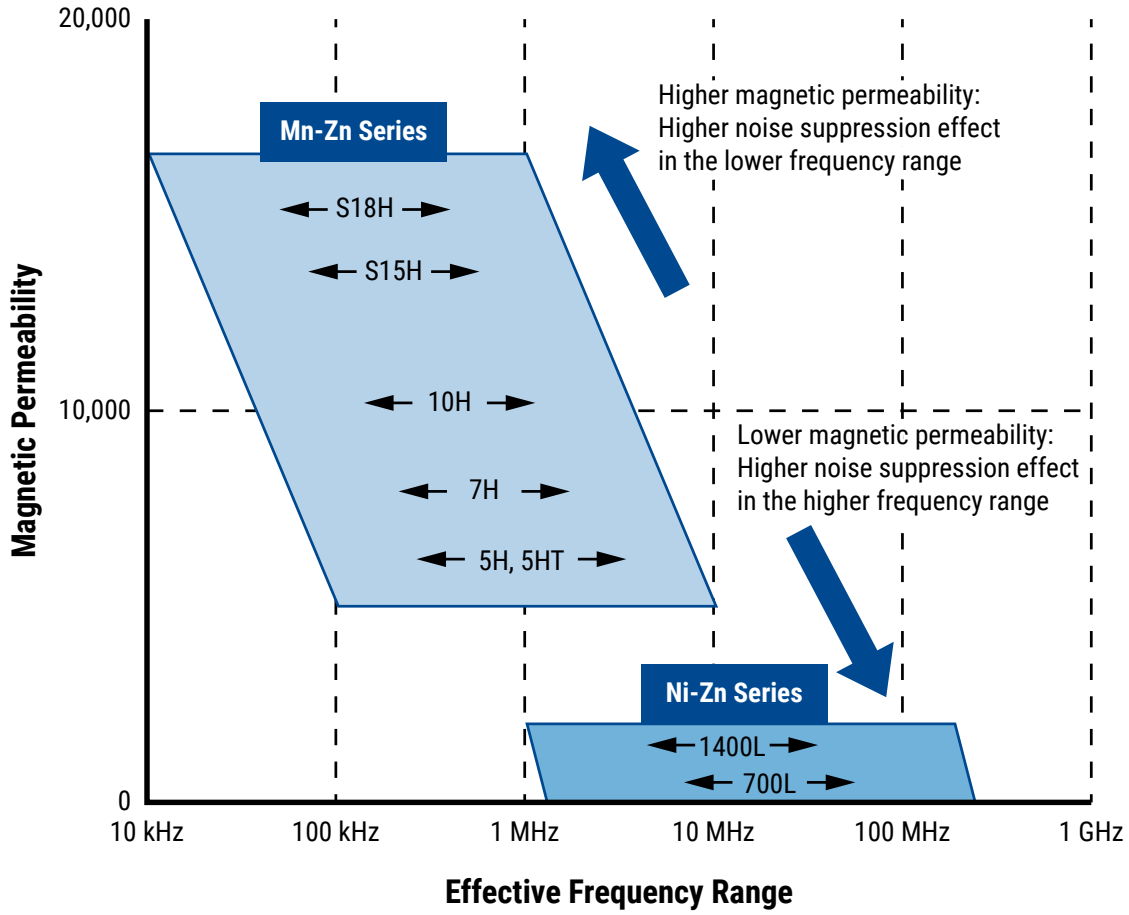
Depending on its magnetic permeability, a particular ferrite material will be effective in a certain frequency band.
A schematic representation of the relationship between the magnetic permeability of each material and the corresponding effective band range is shown in Figure 1.

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.

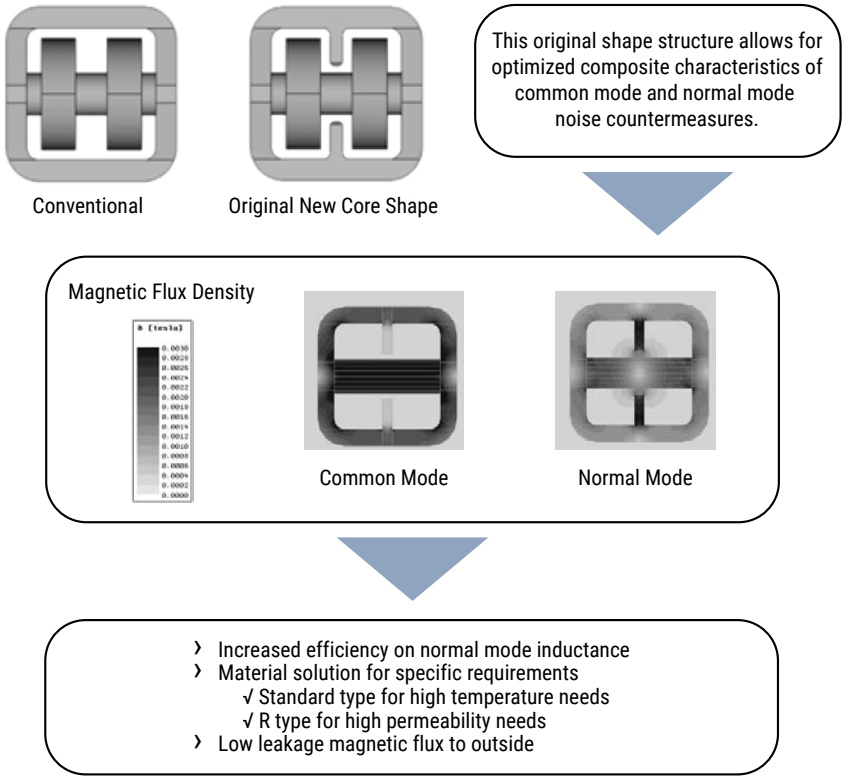
The effective frequency range varies depending on core shape, size and number of windings. This frequency dependence of the magnetic permeability as shown in the figure serves for reference purposes only and it should be tested on the actual device to determine its effectiveness.

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

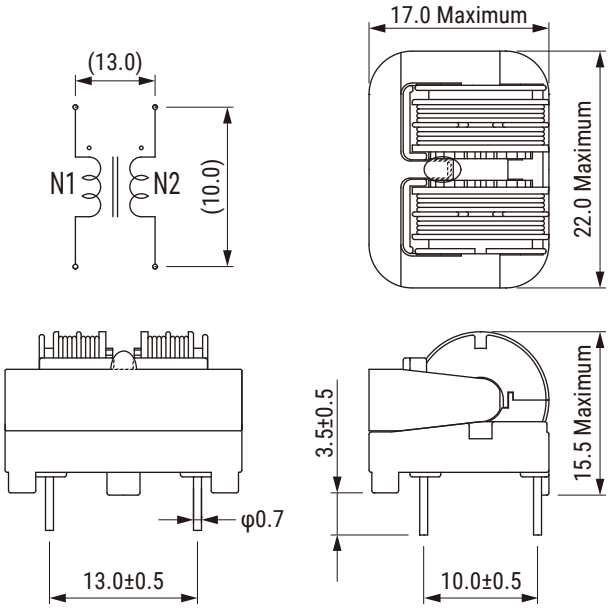
Figure 1 - Relationship between the magnetic permeability of each material and its effective frequency range



Core Structure



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	0.4 – 3.0 A
Rated Inductance Range	0.6 – 62.0 mH minimum
Inductance Measurement Condition	10 kHz
Thermal Class	E (120°C) (R Type) and B (130°C)
Operating Temperature Range	–25°C to +120°C (include self temperature rise) (R Type) and –25°C to +130°C (include self temperature rise)

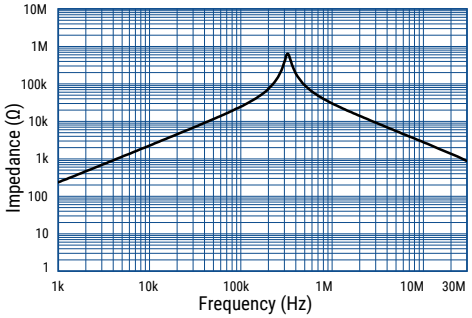
Table 1 – Ratings & Part Number Reference

Part Number	Rated Current (A)	Inductance (Common) (mH) Minimum	Inductance (Normal) (µH) Typical	DC Resistance/ Line (Ω) Maximum	Temperature Rise (K) Maximum	Marking	Weight (g) Approximate
SSHB10HS-04265	0.4	26.5	949	2.45	50	04 Lot No.	10
SSHB10HS-05177	0.5	17.7	615	1.55	50	05 Lot No.	10
SSHB10HS-06140	0.6	14.0	484	1.17	50	06 Lot No.	10
SSHB10HS-07099	0.7	9.9	339	0.81	50	07 Lot No.	10
SSHB10HS-08068	0.8	6.8	231	0.58	50	08 Lot No.	10
SSHB10HS-10051	1.0	5.1	185	0.43	55	10 Lot No.	10
SSHB10HS-11043	1.1	4.3	135	0.35	50	11 Lot No.	10
SSHB10HS-13030	1.3	3.0	100	0.25	50	13 Lot No.	10
SSHB10HS-17019	1.7	1.9	64	0.17	50	17 Lot No.	10
SSHB10HS-22011	2.2	1.1	41	0.11	55	22 Lot No.	10
SSHB10HS-30006	3.0	0.6	23	0.06	60	30 Lot No.	10
SSHB10HS-R04620	0.4	62.0	949	2.45	50	R04 Lot No.	10
SSHB10HS-R05415	0.5	41.5	615	1.55	50	R05 Lot No.	10
SSHB10HS-R06330	0.6	33.0	484	1.17	50	R06 Lot No.	10
SSHB10HS-R07230	0.7	23.0	339	0.81	50	R07 Lot No.	10
SSHB10HS-R08160	0.8	16.0	231	0.58	50	R08 Lot No.	10
SSHB10HS-R10122	1.0	12.2	185	0.43	55	R10 Lot No.	10
SSHB10HS-R11100	1.1	10.0	135	0.35	50	R11 Lot No.	10
SSHB10HS-R13071	1.3	7.1	100	0.25	50	R13 Lot No.	10
SSHB10HS-R17046	1.7	4.6	64	0.17	50	R17 Lot No.	10
SSHB10HS-R22027	2.2	2.7	41	0.11	55	R22 Lot No.	10
SSHB10HS-R30015	3.0	1.5	23	0.06	60	R30 Lot No.	10

Frequency Characteristics

Common mode

SSHB10HS-04265



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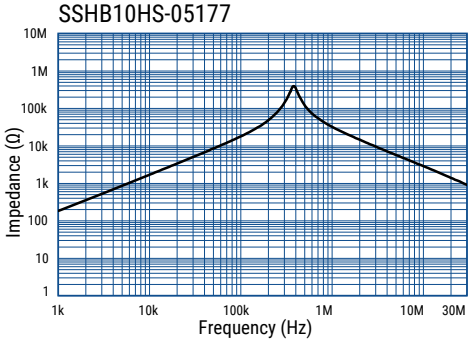

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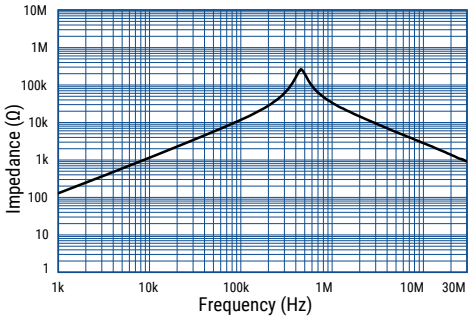

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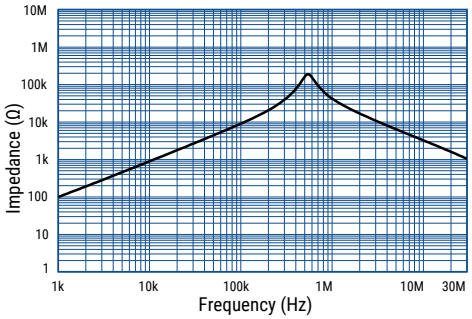
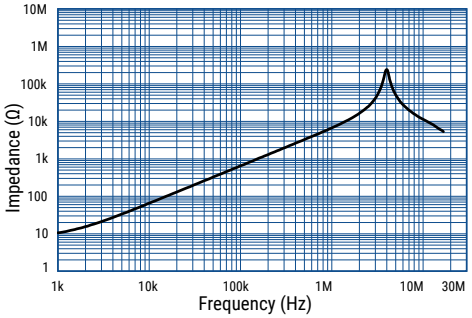


Normal mode

SSHB10HS-04265



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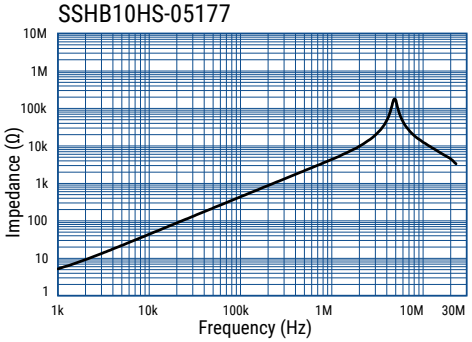

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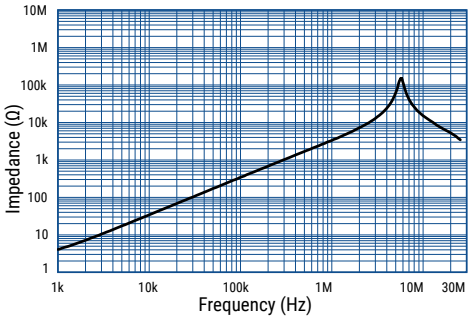

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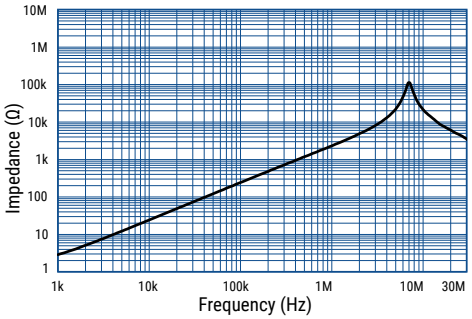
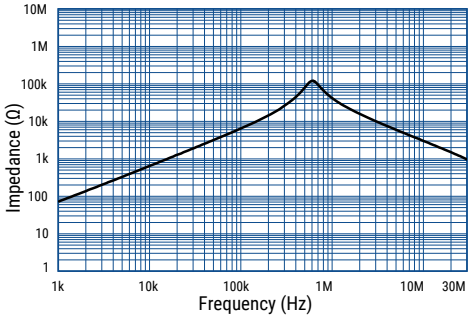


Frequency Characteristics cont.

Common mode

SSHB10HS-08068



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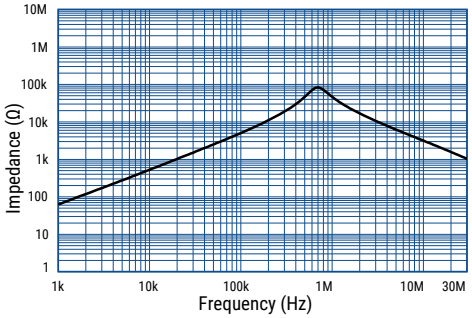

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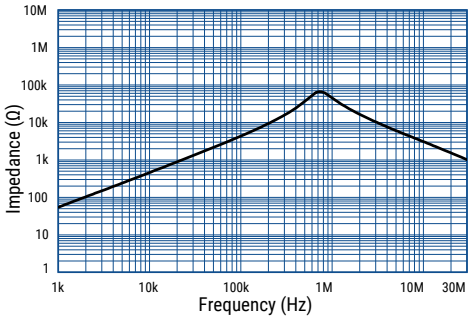

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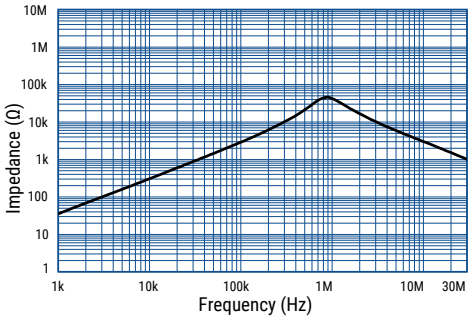
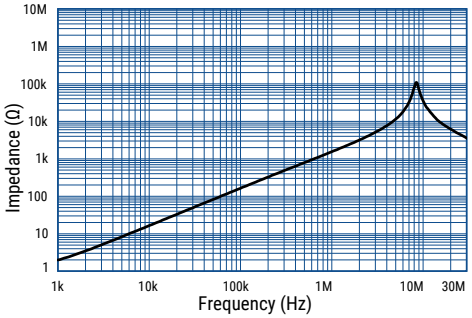


Normal mode

SSHB10HS-08068



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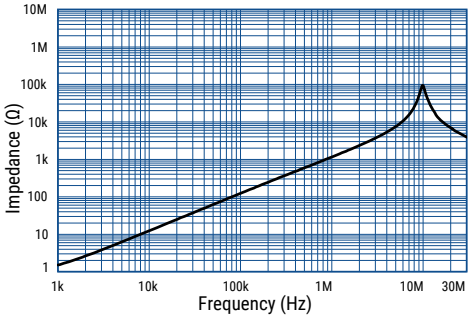

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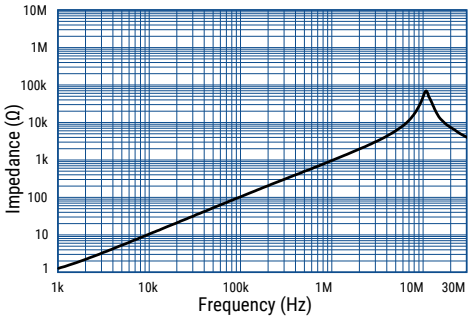

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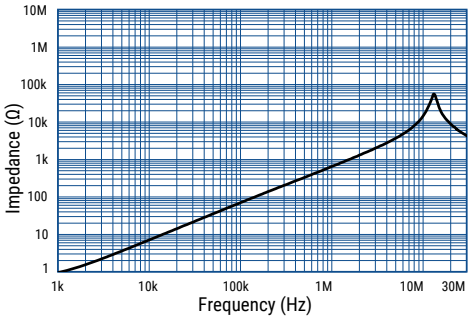
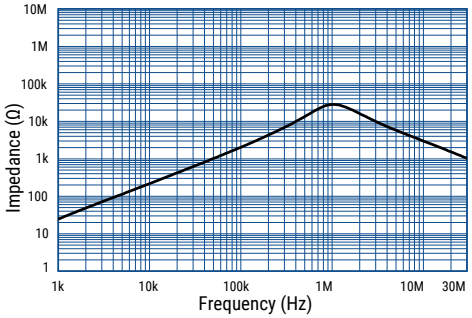


Frequency Characteristics cont.

Common mode

SSHB10HS-17019



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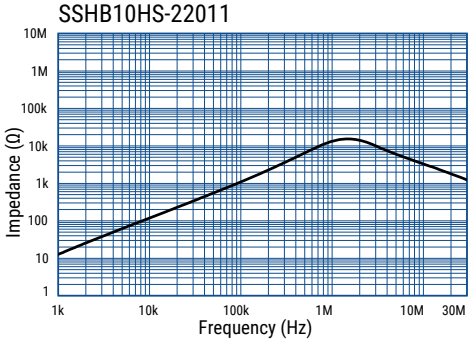

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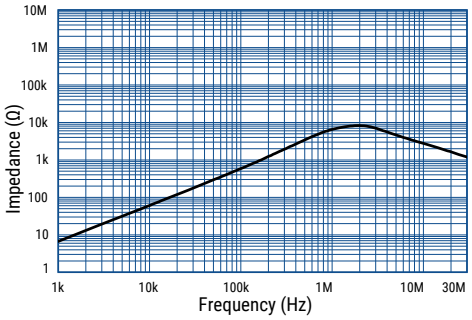

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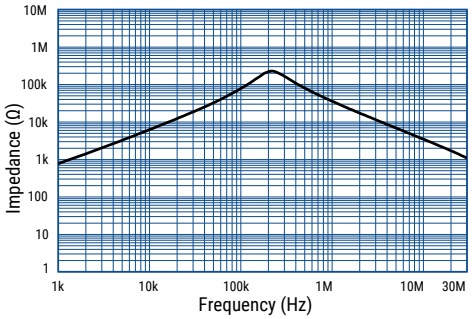
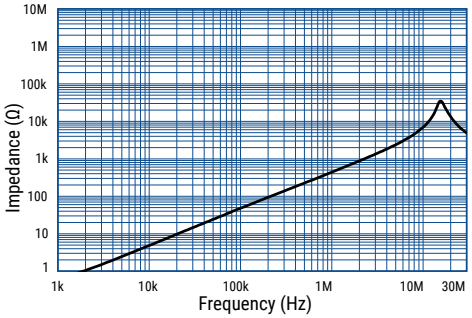


Normal mode

SSHB10HS-17019



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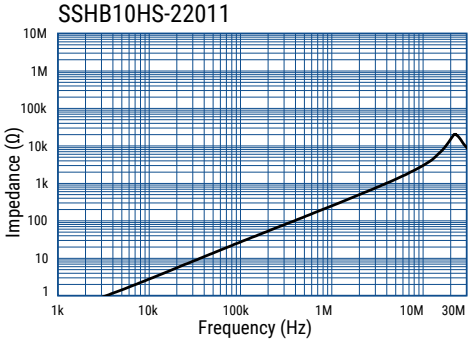

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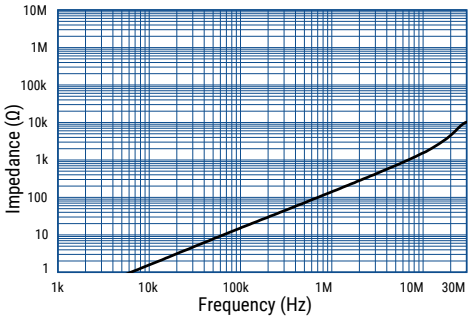

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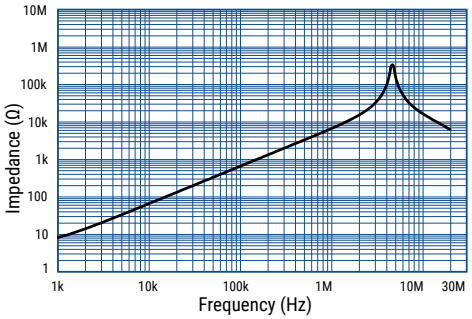
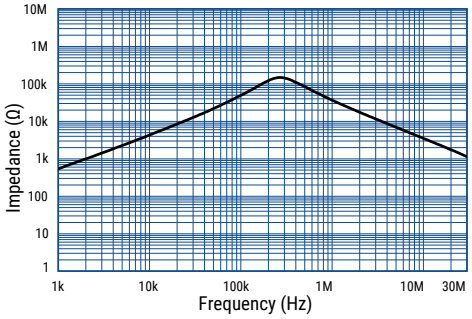


Frequency Characteristics cont.

Common mode

SSHB10HS-R05415



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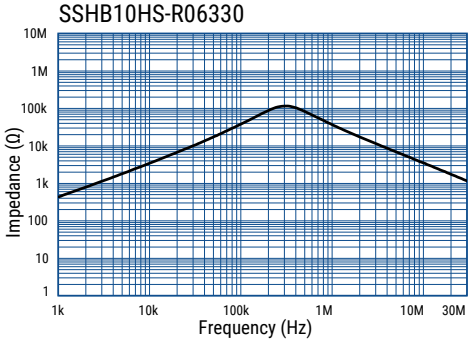

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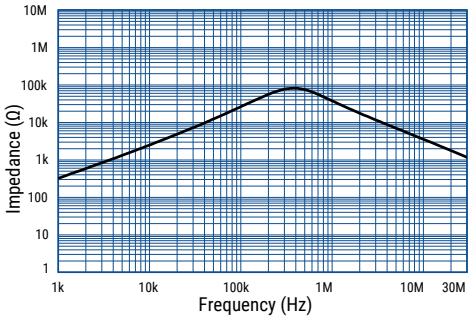

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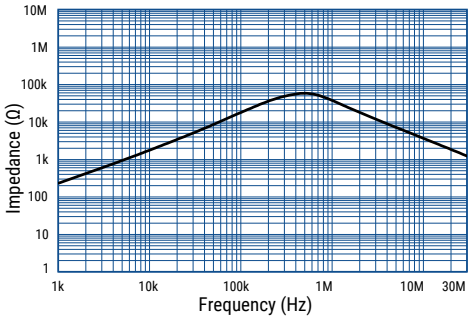

Normal mode

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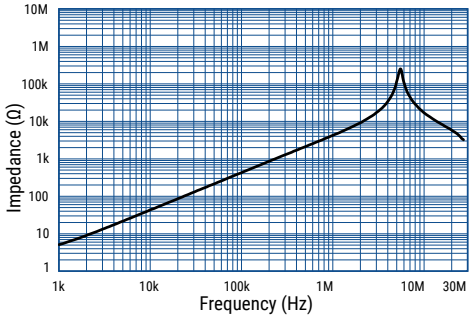

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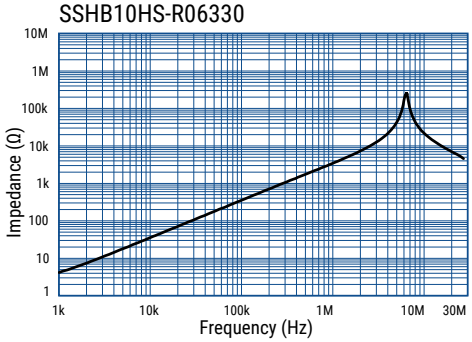

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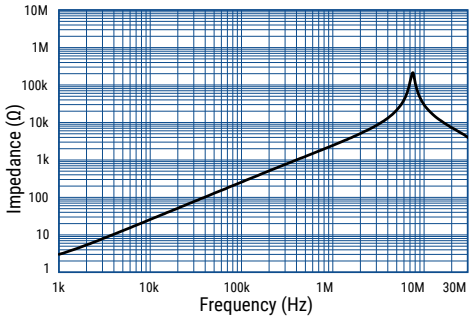

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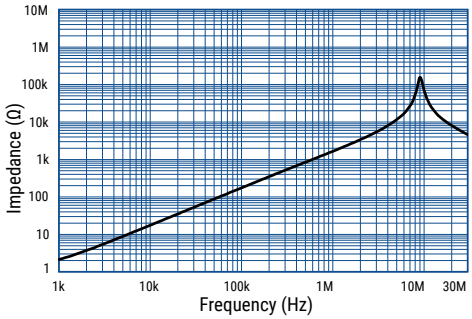
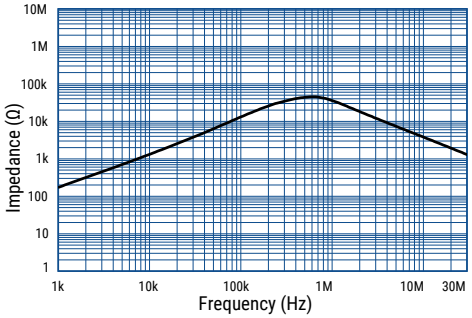


Frequency Characteristics cont.

Common mode

SSHB10HS-R10122



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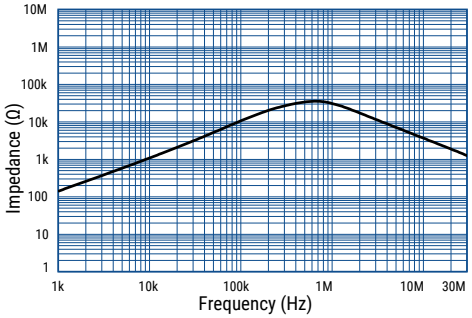

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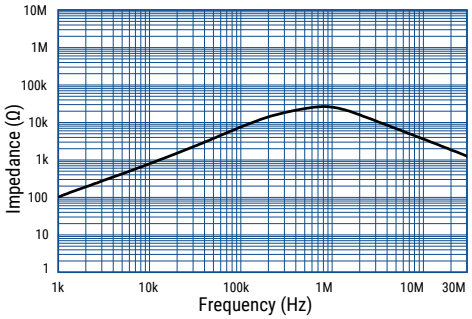

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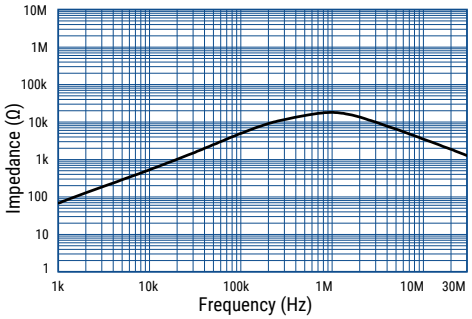
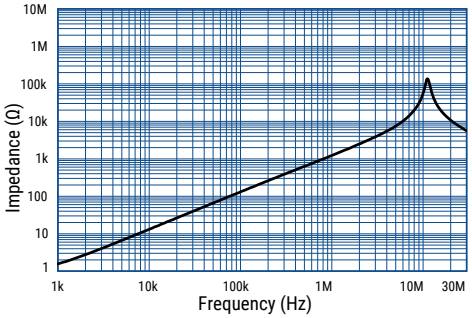


Normal mode

SSHB10HS-R10122



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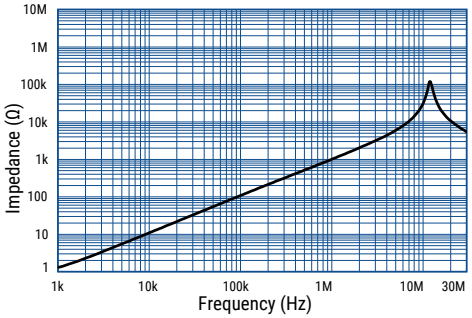

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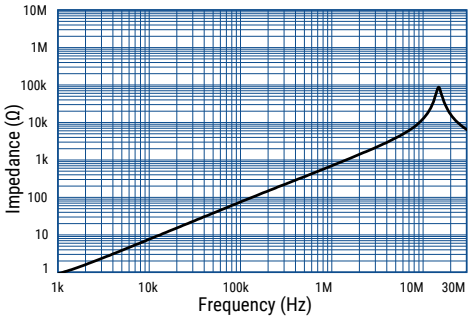

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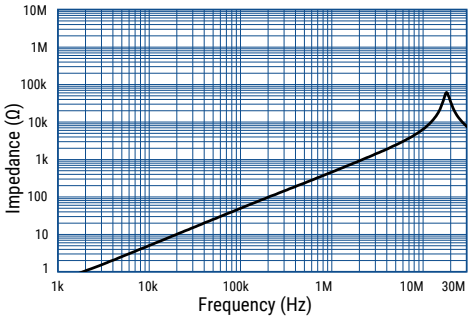

Frequency Characteristics cont.

Common mode

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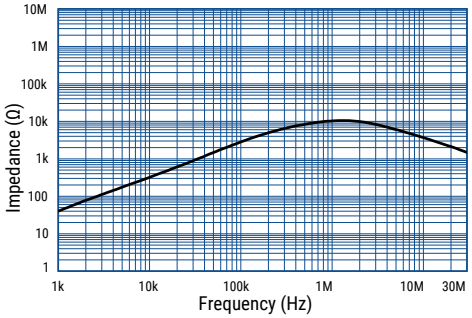

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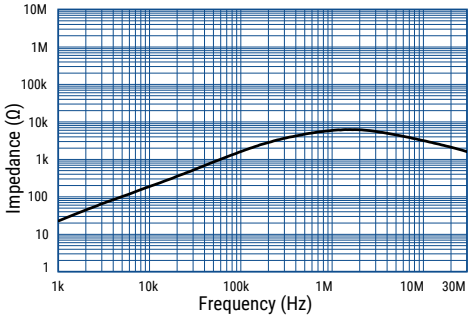
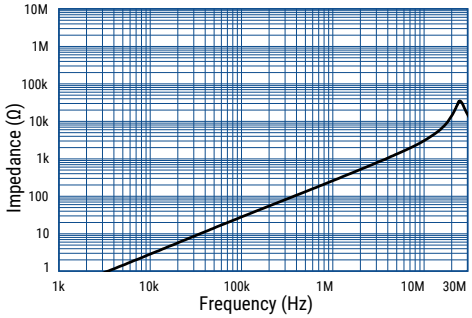
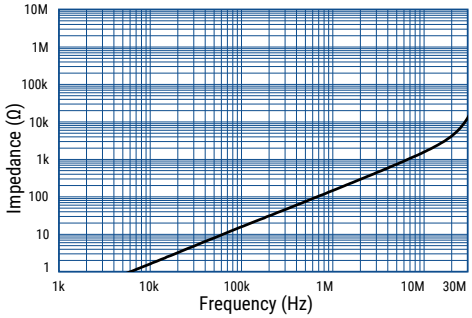


Normal mode

SSHB10HS-R22027



SSHB10HS-R30015



Packaging

Type	Packaging Type	Pieces Per Box
SSHB10HS	Tray	300

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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