

# Common Mode SC Coils, SC-JKH Series, Terminal Fixing Cap Type

## Overview

The KEMET SC-JKH coils are common mode chokes with a wide variety of characteristics. These toroidal coils are designed with our proprietary ferrite cores and are useful in various noise countermeasure fields.

## Applications

- Audio-visual equipment
- Home appliances
- Power supplies

## Benefits

- Proprietary 10H ferrite material and equivalents
- Suitable for  $\geq 150$  kHz range
- Wide variety of sizes and specifications
- Operating temperature range from  $-25^{\circ}\text{C}$  to  $+120^{\circ}\text{C}$
- UL 94 V-0 flame retardant rated cap



## Part Number System

SC-	02-	E	120	JKH
Series	Rated Current (A)	Thermal Class	Inductance (mH) Minimum	Terminal Base Type
SC	0x = x A  Examples: 02 = 2 A  Note: With exceptions, see Table 1 for details.	E = Class E	xx = x.x mH xxx = xx.x mH  Examples: 30 = 3.0 mH 120 = 12.0 mH  Note: With exceptions, see Table 1 for details.	JKH

## Magnetic Permeability of Ferrite Material

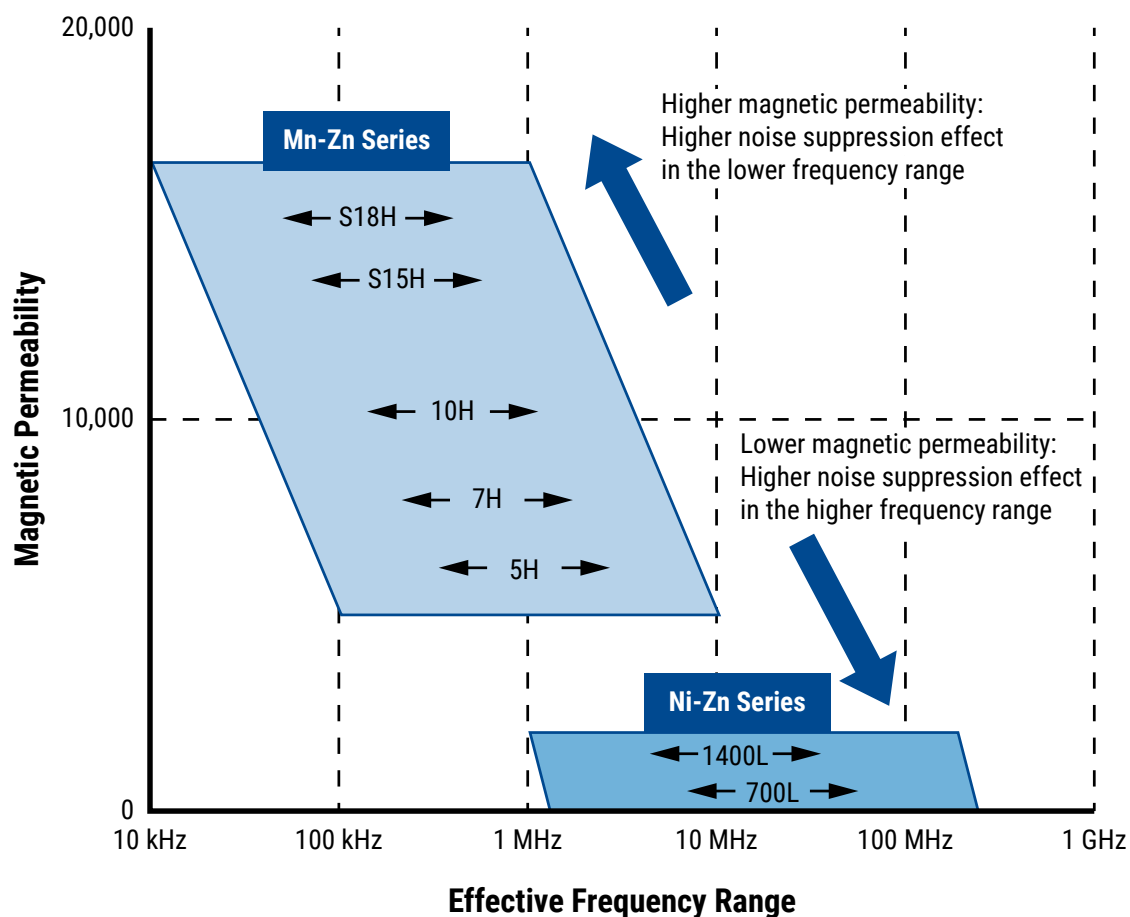
In order to achieve most efficient noise reduction, it is important to select the material according to the target frequency band. Depending on its magnetic permeability, a particular ferrite material will be effective in a certain frequency band. A schematic representation of the relationship between 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.

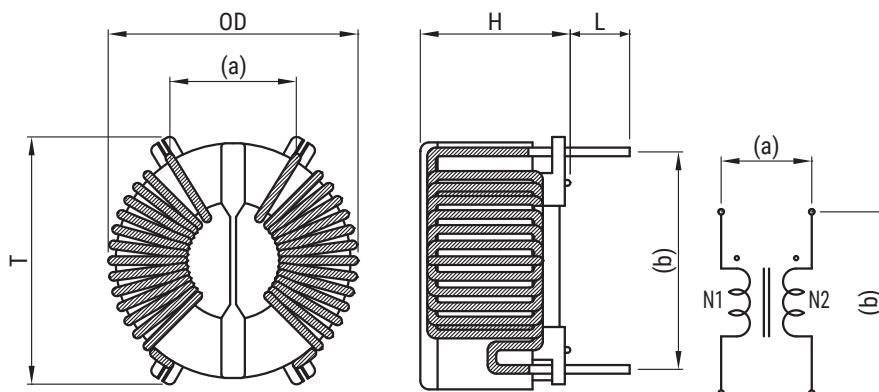
The effective frequency range varies depending on core shape, size and number of windings. This frequency dependence of the magnetic permeability as shown in the figure serves for reference purposes only and it should be tested on the actual device to determine its effectiveness.

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



Part Name	Dimensions (mm)				Pin Pitch <sup>1</sup> (Reference)	
	OD (Maximum)	T (Maximum)	H (Maximum)	L	a	b
SC-02-E120JKH	26.0	24.5	17.0	3.5±1.0	11.0	18.0
SC-02-E30JKH	17.0	17.0	14.5	3.6±1.0	8.0	13.0
SC-02-E50JKH	24.5	24.5	17.0	3.5±1.0	11.0	18.0
SC-02-E60JKH	24.5	24.5	17.0	3.5±1.0	11.0	18.0
SC-04-E120JKH	34.0	34.0	27.0	3.5±1.0	11.0	28.0
SC-04-E60JKH	34.0	34.0	17.0	3.5±1.0	11.0	28.0
SC-05-E100JKH	34.0	34.0	25.0	3.5±1.0	11.0	28.0
SC-05-E75JKH	32.0	34.0	18.0	3.5±1.0	11.0	28.0
SC-06-E42JKH	34.0	34.0	27.0	3.5±1.0	11.0	28.0
SC-06-E70JKH	34.0	34.0	27.0	3.5±1.0	11.0	28.0

<sup>1</sup> Pin pitch listed above for reference only. Values not guaranteed.

## Environmental Compliance

All KEMET AC line filters are RoHS Compliant.



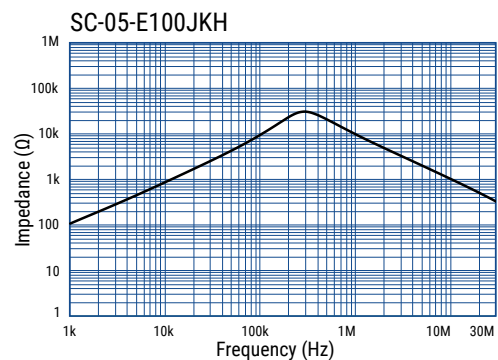
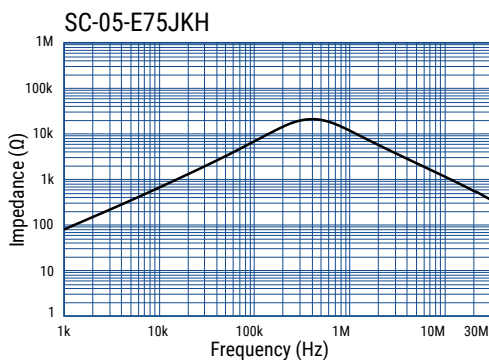
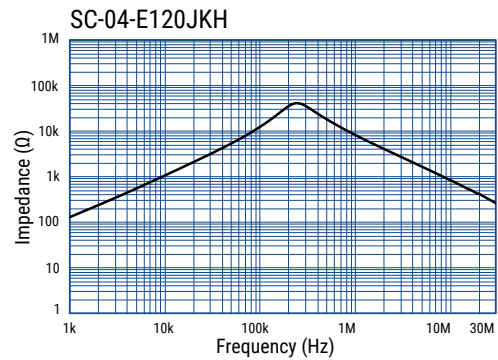
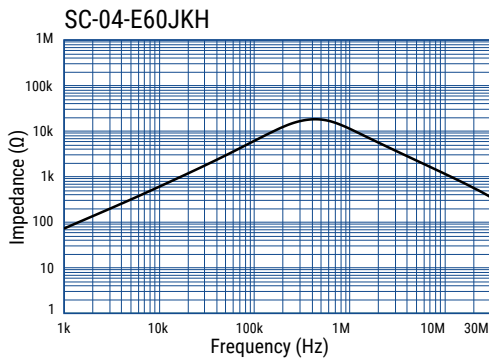
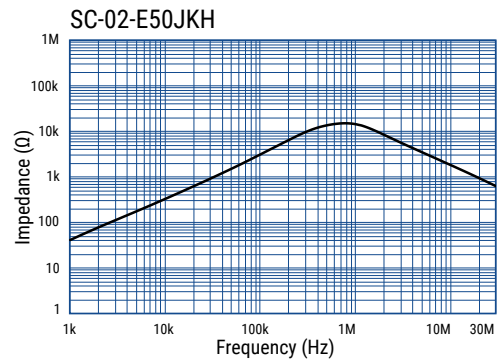
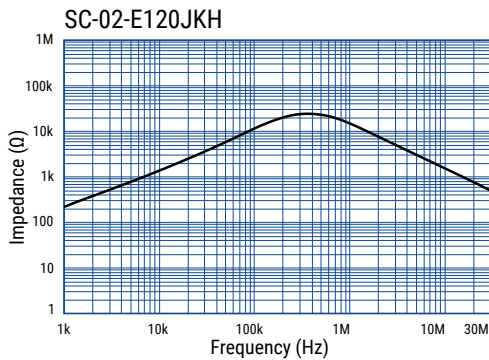
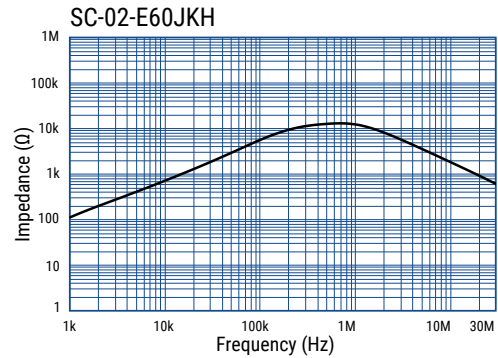
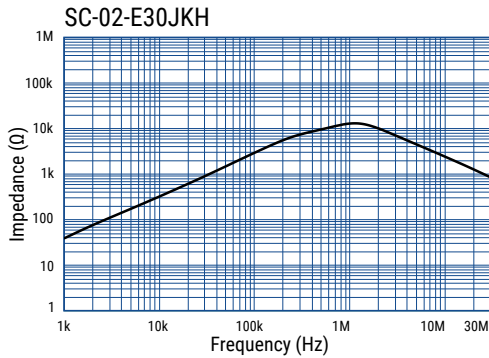
## Performance Characteristics

Item	Performance Characteristics
Rated Voltage	250 VAC/VDC
Withstanding Voltage	2,400 VAC (2 seconds, between lines)
Insulation Resistance	> 100 MΩ at 500 VDC (between lines)
Rated Current Range	2 – 6 A
Rated Inductance Range	3 – 12 mH minimum
Inductance Measurement Condition	10 kHz
Thermal Class	E (120°C)
Operating Temperature Range	-25°C to +120°C (include self temperature rise)

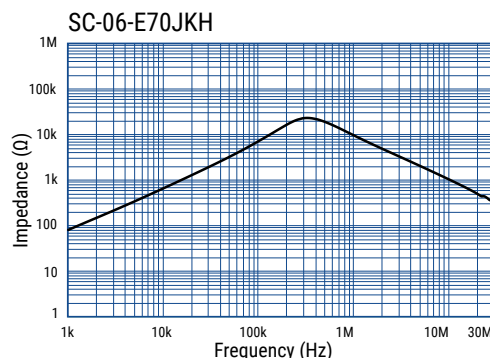
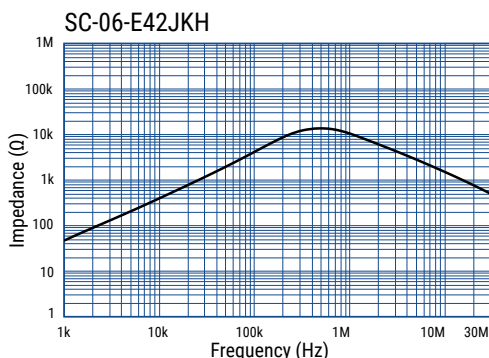
**Table 1 – Ratings & Part Number Reference**

Part Number	Rated Current (A)	Inductance (mH) Minimum	DC Resistance/Line (mΩ) Maximum	Temperature Rise (K) Maximum	Wire Diameter (mm)	Weight (g) Approximate
SC-02-E30JKH	2.0	3.0	85.00	40	0.50	6.0
SC-02-E60JKH	2.0	6.0	100.00	40	0.65	13.0
SC-02-E120JKH	2.0	12.0	180.00	70	0.55	13.1
SC-02-E50JKH	2.7	5.4	55.00	40	0.75	13.9
SC-04-E60JKH	4.0	6.0	75.00	50	0.80	27.2
SC-04-E120JKH	4.0	12.0	75.00	40	0.95	48.2
SC-05-E75JKH	5.0	8.1	72.45	80	0.80	27.2
SC-05-E100JKH	5.0	10.0	65.00	50	1.00	47.5
SC-06-E42JKH	6.0	4.2	30.00	45	1.20	47.5
SC-06-E70JKH	6.0	7.0	4.50	65	1.10	50.0

## Frequency Characteristics



## Frequency Characteristics cont.



## Packaging

Type	Packaging Type	Pieces Per Box
SC-02-E30JKH	Tray	280
SC-02-E60JKH		320
SC-02-E120JKH		200
SC-02-E50JKH		150
SC-04-E60JKH		180
SC-04-E120JKH		150
SC-05-E75JKH		120
SC-05-E100JKH		150
SC-06-E42JKH		120
SC-06-E70JKH		150

## 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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