Common Mode SCR Coils, Standard Series

Overview

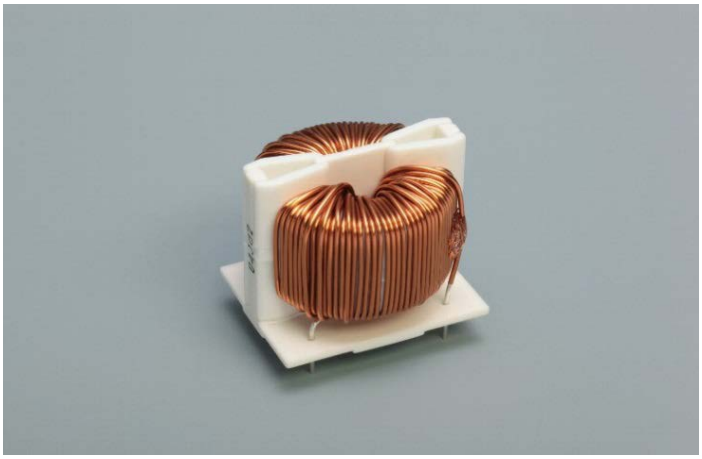
The KEMET SCR coils are common mode chokes with a wide variety of characteristics. These toroidal coils are designed with our proprietary high permeability ferrite S15H cores and are useful in various noise countermeasure fields.

Applications

- Audio-visual equipment
- Home appliances
- Power supplies

Benefits

- Proprietary S15H ferrite material
- High permeability
- High impedance
- Space saving due to high permeability material
- Operating temperature range from −40°C to +120°C
- UL 94 V–0 flame retardant rated base and cap



Part Number System

SCR-	020-	0R55	A	250	J	
Series	Rated Current (A)	Wire Diameter (mm)	Windings	Inductance (mH) Minimum	Terminal Base Type	Internal Control Code
SCR	xxx = xx.x A Examples: 050 = 5.0 A	R = Decimal point Examples: 0R55 = 0.55 mm 1R4 = 1.4 mm	A = Single	xxx = xx.xmH Examples: 015 = 1.5 mH 100 = 10 mH Note: With exceptions, see Table 1 for details.	J = Vertical type JH = Horizontal type	Blank P

© KEMET Electronics Corporation • One East Broward Boulevard
Fort Lauderdale, FL 33301 USA • 954-766-2800 • www.kemet.com

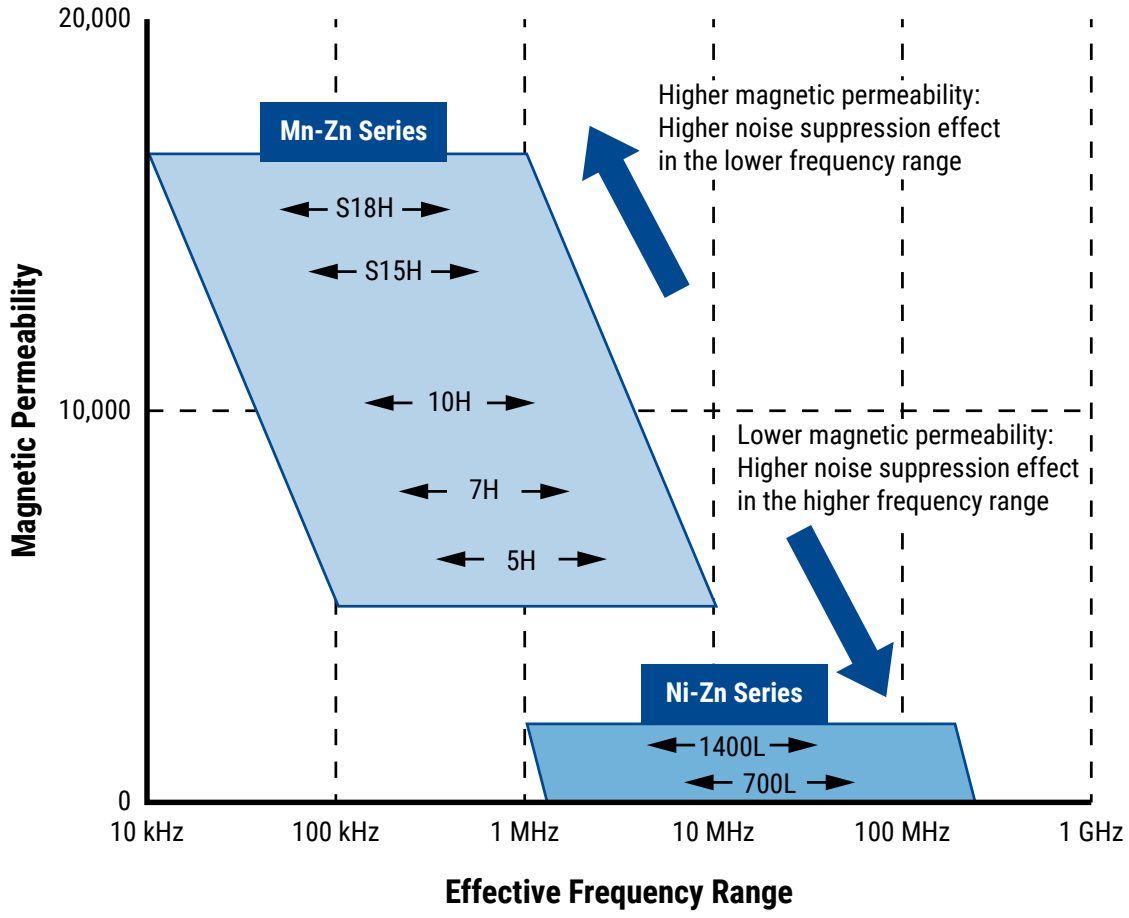
Magnetic Permeability of Ferrite Material

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

Figure 1

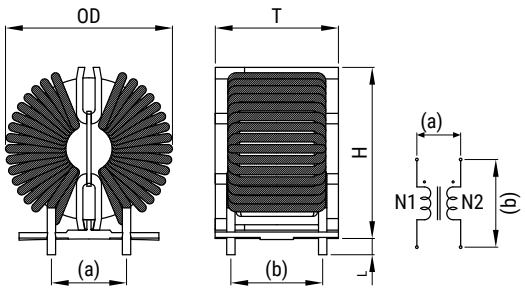
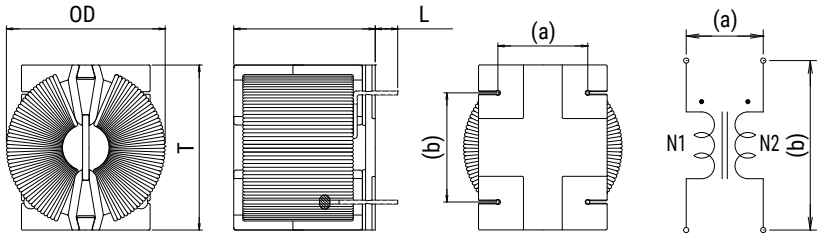


Figure 2



Part Name	Dimensions (mm)				Pin Pitch[1] (Reference)		Figure
	OD (Maximum)	T (Maximum)	H (Maximum)	L	a	b	
SCR-020-0R55A250J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-020-0R55A250JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-030-0R6A170J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-030-0R6A170JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-040-0R8A100J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-040-0R8A100JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-050-0R9A070J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-050-0R9A070JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-060-0R9A040J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-060-0R9A040JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-070-1R0A030J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-070-1R0A030JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-080-1R1A020J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-080-1R1A020JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-090-1R2A015J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-090-1R2A015JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-100-1R2A010J	29.0	23.0	29.0	4.0±1.0	18.0	16.0	Fig. 1
SCR-100-1R2A010JH	29.0	27.0	23.0	4.0±1.0	14.0	17.0	Fig. 2
SCR-150-1R4A006J-P	29.5	23.0	28.5	4.0±1.0	18.0	16.0	Fig. 1

[1] *Pin pitch listed above for reference only. Values not guaranteed.*

Environmental Compliance

All KEMET AC line filters are RoHS Compliant.

© KEMET Electronics Corporation • One East Broward Boulevard
Fort Lauderdale, FL 33301 USA • 954-766-2800 • www.kemet.com

Performance Characteristics

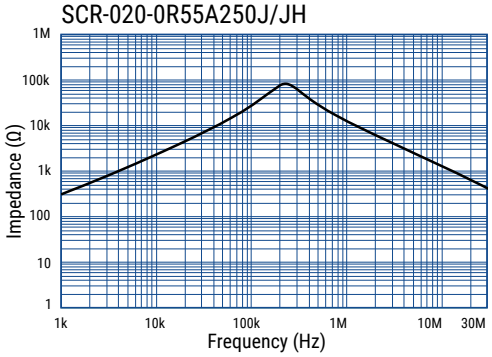
Item	Performance Characteristics
Rated Voltage	250 VAC/VDC
Withstanding Voltage	2,400 VAC (2 seconds, between lines)
Insulation Resistance	> 100 MΩ at 500 VDC (between lines)
Rated Current Range	2 – 15 A
Rated Inductance Range	0.6 - 25 mH minimum
Inductance Measurement Condition	10 kHz
Thermal Class	E (120°C)
Operating Temperature Range	–40°C to +120°C (include self temperature rise)

Table 1 – Ratings & Part Number Reference

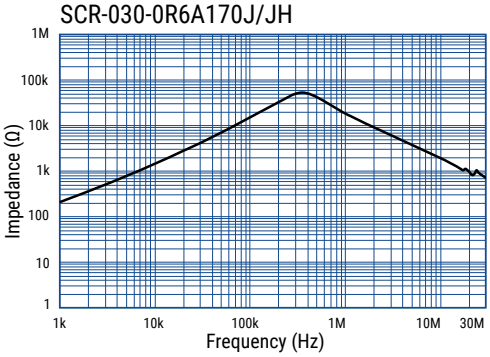
Part Number	Rated Current (A)	Inductance (mH) Minimum	DC Resistance/ Line (mΩ) Maximum	Temperature Rise (K) Maximum	Wire Diameter (mm)	Weight (g) Approximate
SCR-020-0R55A250J	2	25.0	200.0	55	0.55	23
SCR-020-0R55A250JH	2	25.0	200.0	55	0.55	23
SCR-030-0R6A170J	3	15.0	138.0	70	0.60	23
SCR-030-0R6A170JH	3	15.0	138.0	70	0.60	23
SCR-040-0R8A100J	4	10.0	66.0	62	0.80	27
SCR-040-0R8A100JH	4	10.0	66.0	62	0.80	27
SCR-050-0R9A070J	5	7.0	47.0	70	0.90	27
SCR-050-0R9A070JH	5	7.0	47.0	70	0.90	27
SCR-060-0R9A040J	6	4.0	32.6	65	0.90	24
SCR-060-0R9A040JH	6	4.0	32.6	65	0.90	24
SCR-070-1R0A030J	7	3.0	23.0	60	1.00	25
SCR-070-1R0A030JH	7	3.0	23.0	60	1.00	25
SCR-080-1R1A020J	8	2.0	15.9	55	1.10	25
SCR-080-1R1A020JH	8	2.0	15.9	55	1.10	25
SCR-090-1R2A015J	9	1.5	11.9	55	1.20	25
SCR-090-1R2A015JH	9	1.5	11.9	55	1.20	25
SCR-100-1R2A010J	10	1.0	9.6	55	1.20	25
SCR-100-1R2A010JH	10	1.0	9.6	55	1.20	25
SCR-150-1R4A006J-P	15	0.6	5.3	58	1.40	22.9

Frequency Characteristics

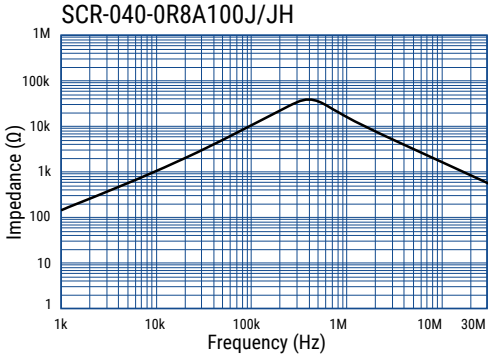
SCR-020-0R55A250J/JH



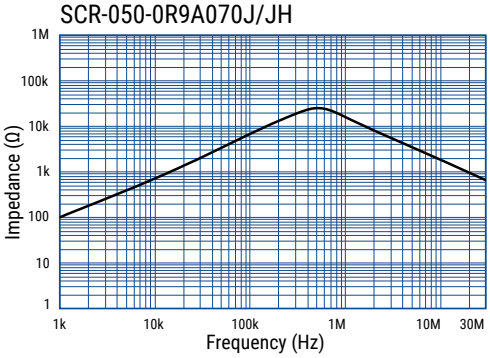
SCR-030-0R6A170J/JH



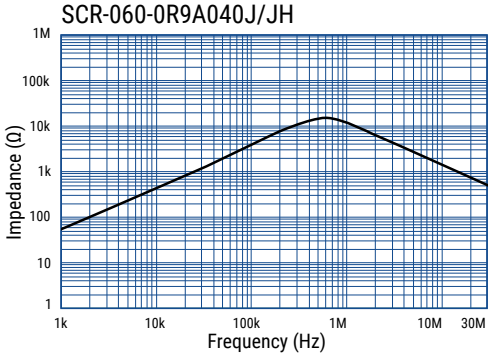
SCR-040-0R8A100J/JH



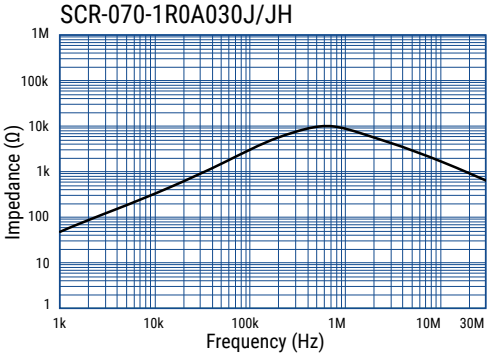
SCR-050-0R9A070J/JH



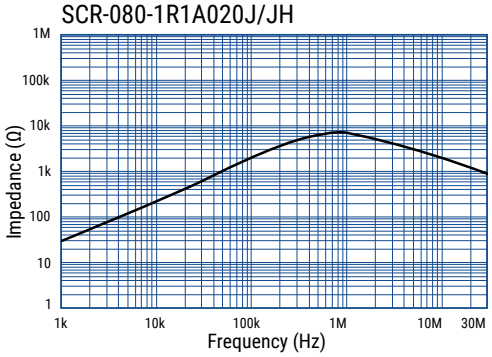
SCR-060-0R9A040J/JH



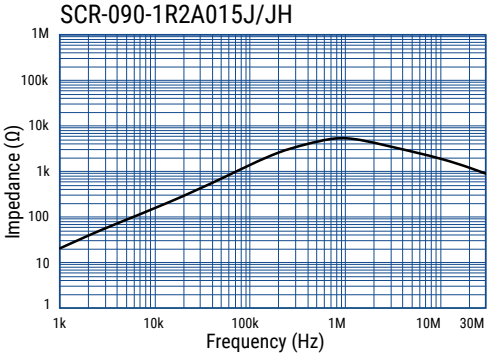
SCR-070-1R0A030J/JH



SCR-080-1R1A020J/JH



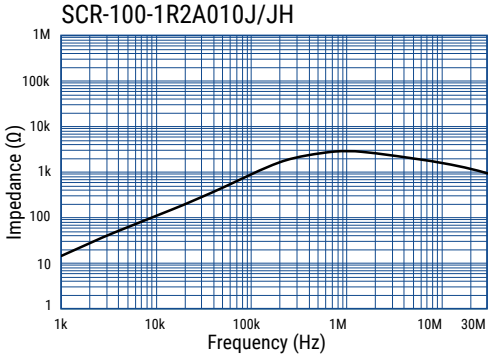
SCR-090-1R2A015J/JH



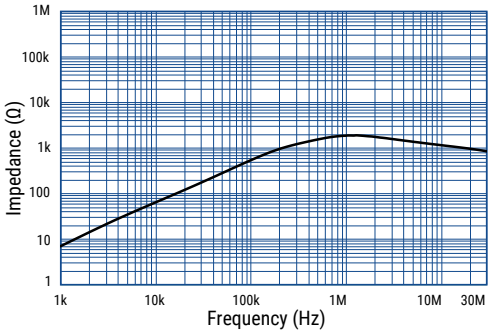
© KEMET Electronics Corporation • One East Broward Boulevard
Fort Lauderdale, FL 33301 USA • 954-766-2800 • www.kemet.com

Frequency Characteristics cont.

SCR-100-1R2A010J/JH



SCR-150-1R4A006J-P



Packaging

Type	Packaging Type	Pieces Per Box
SCR-J	Tray	240
SCR-JH		200

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.

KEMET Electronics Corporation Sales Offices

For a complete list of our global sales offices, please visit www.kemet.com/sales.

Disclaimer

YAGEO Corporation and its affiliates do not recommend the use of commercial or automotive grade products for high reliability applications or manned space flight.

All product specifications, statements, information and data (collectively, the "Information") in this datasheet are subject to change. The customer is responsible for checking and verifying the extent to which the Information contained in this publication is applicable to an order at the time the order is placed. All Information given herein is believed to be accurate and reliable, but it is presented without guarantee, warranty, or responsibility of any kind, expressed or implied.

Statements of suitability for certain applications are based on KEMET Electronics Corporation's ("KEMET") knowledge of typical operating conditions for such applications, but are not intended to constitute – and KEMET specifically disclaims – any warranty concerning suitability for a specific customer application or use. The Information is intended for use only by customers who have the requisite experience and capability to determine the correct products for their application. Any technical advice inferred from this Information or otherwise provided by KEMET with reference to the use of KEMET's products is given gratis, and KEMET assumes no obligation or liability for the advice given or results obtained.

Although KEMET designs and manufactures its products to the most stringent quality and safety standards, given the current state of the art, isolated component failures may still occur. Accordingly, customer applications which require a high degree of reliability or safety should employ suitable designs or other safeguards (such as installation of protective circuitry or redundancies) in order to ensure that the failure of an electrical component does not result in a risk of personal injury or property damage.

Although all product–related warnings, cautions and notes must be observed, the customer should not assume that all safety measures are indicated or that other measures may not be required.

When providing KEMET products and technologies contained herein to other countries, the customer must abide by the procedures and provisions stipulated in all applicable export laws and regulations, including without limitation the International Traffic in Arms Regulations (ITAR), the US Export Administration Regulations (EAR) and the Japan Foreign Exchange and Foreign Trade Act.

KEMET is a registered trademark of KEMET Electronics Corporation.

Unikeyic Electronics

Global Electronic Components Distributor

Click to view pricing, inventory, delivery, and lifecycle information:

KEMET:

C0402C100J5HACAUTO C1206C154K5RACTU R413I13304000M MPX1D0530LR68 MPXV1D0840LR22 ALA7DA221DD600 C0603C472J5RACTU C315C103K5R5TA7301 C44ASGP4400ZA0J T356F336K010AT T520A227M2R5ATE035 C0402C106M9PACTU C0603C561JAGACTU CGP5C103MGWDAA7301 FT0H225ZF MPXV1D0830L1R0 C0603C470J1HACTU C1206C105M4RACTU C1210C104K5HACAUTO T494X686M025AT Z0805C431ASMST C0402C102J1GECTU C0805C103M5RACTU C0402C222K5RECAUTO C0603C331G5GACTU C0603C471K4RACTU SBC9-100-422 SSR21NV-05795 T495D336K025ATE300 T525B476M006ATE080