# Common Mode SS Coils, 11VL 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

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

## Benefits

- Proprietary 5H 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



## Part Number System

| SS | 11 | VL- | R | 03 | 820 |
|---|---|---|---|---|---|
| Series | Core Size Code | Core Orientation | Core Type | Rated Current (A) | Inductance (H) Minimum |
| SS | 11 | VL = Vertical | Blank = Standard<br>R = High permeability | 0x = 0.x A<br>xx = x.x A<br><br>Examples:<br>03 = 0.3 A<br>13 = 1.3 A | xx0 = xx mH<br>0xx = x.x mH<br><br>Examples:<br>820 = 82 mH<br>024 = 2.4 mH |



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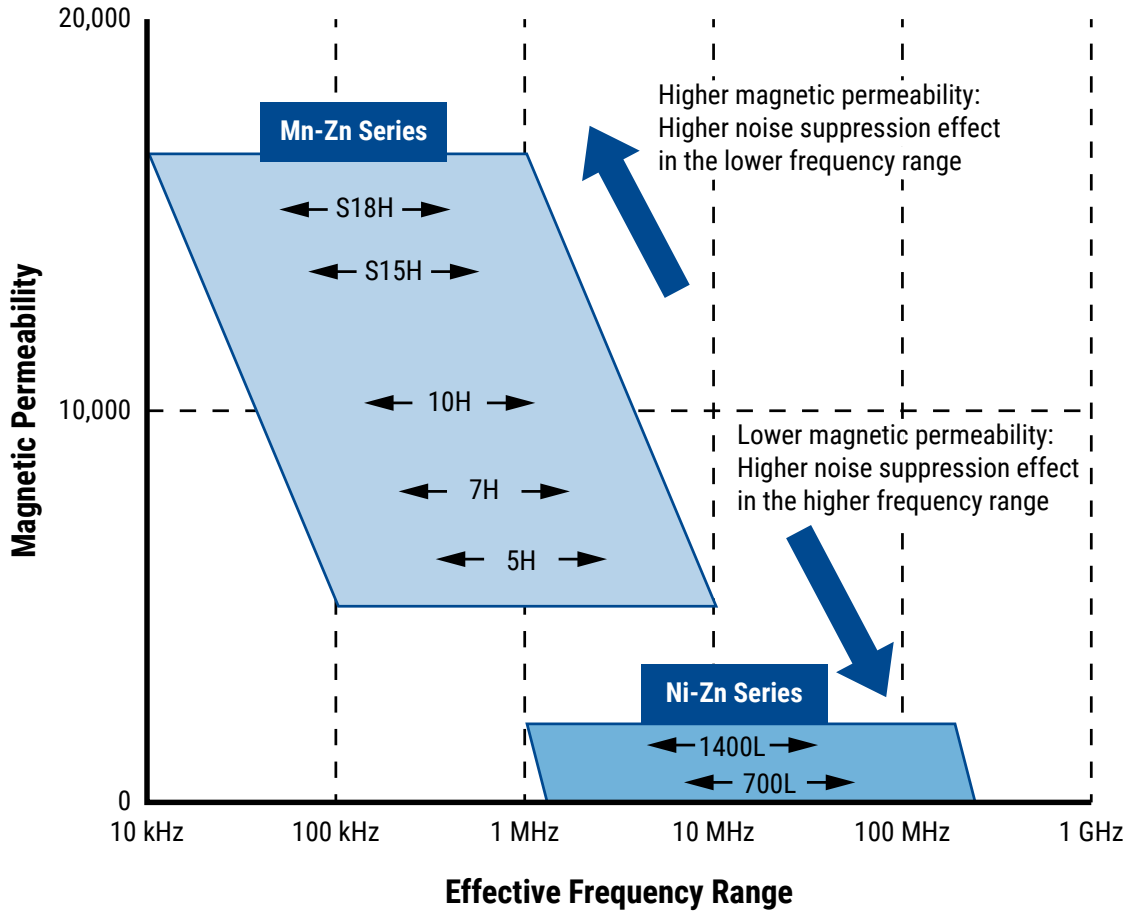
## Magnetic Permeability of Ferrite Material

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.

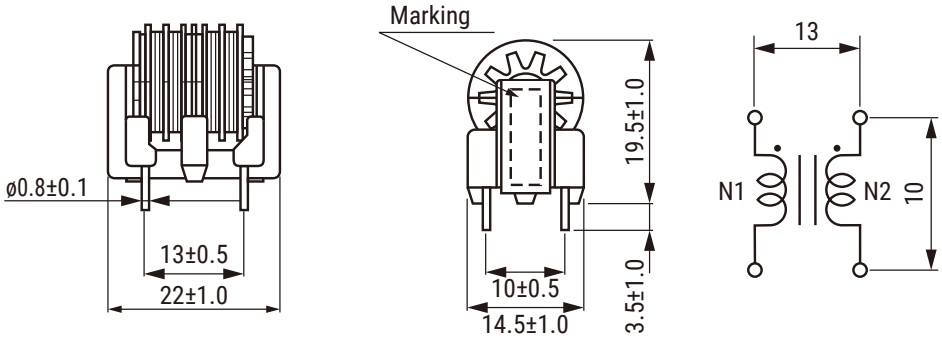
The effective frequency range varies depending on core shape, size and number of windings. This frequency dependence of the magnetic permeability as shown in the figure serves for reference purposes only and it should be tested on the actual device to determine its effectiveness.

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.

RoHS

## 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 | 0.3 – 3.0 A |
| Rated Inductance Range | 0.6 – 82.0 mH minimum |
| Inductance Measurement Condition | 1 kHz |
| Thermal Class | E (120°C) |
| Operating Temperature Range | –40°C to +120°C (include self temperature rise) |

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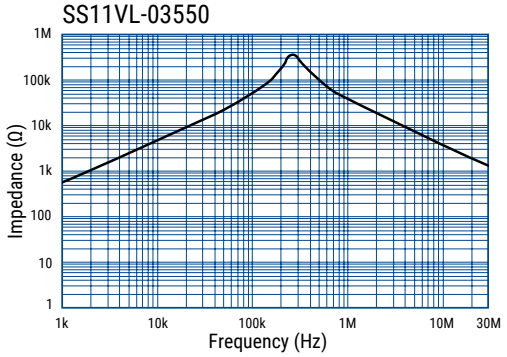
## Table 1 – Ratings & Part Number Reference

| Part Number | Rated Current (A) | Inductance (mH) Minimum | DC Resistance/ Line (Ω) Maximum | Temperature Rise (K) Maximum | Marking | Weight (g) Approximate |
|---|---|---|---|---|---|---|
| SS11VL-03550 | 0.3 | 55.0 | 4.10 | 45 | 03 Lot No. | 10.5 |
| SS11VL-04350 | 0.4 | 35.0 | 2.60 | 45 | 04 Lot No. | 10.7 |
| SS11VL-05230 | 0.5 | 23.0 | 1.80 | 45 | 05 Lot No. | 10.5 |
| SS11VL-06180 | 0.6 | 18.0 | 1.30 | 45 | 06 Lot No. | 11.1 |
| SS11VL-07120 | 0.7 | 12.0 | 0.90 | 45 | 07 Lot No. | 10.8 |
| SS11VL-08083 | 0.8 | 8.3 | 0.74 | 45 | 08 Lot No. | 9.8 |
| SS11VL-10062 | 1.0 | 6.2 | 0.44 | 45 | 10 Lot No. | 11.1 |
| SS11VL-11050 | 1.1 | 5.0 | 0.40 | 45 | 11 Lot No. | 10.7 |
| SS11VL-13035 | 1.3 | 3.5 | 0.28 | 45 | 13 Lot No. | 10.5 |
| SS11VL-17024 | 1.7 | 2.4 | 0.19 | 45 | 17 Lot No. | 10.8 |
| SS11VL-22013 | 2.2 | 1.3 | 0.12 | 45 | 22 Lot No. | 10.4 |
| SS11VL-30006 | 3.0 | 0.6 | 0.06 | 45 | 30 Lot No. | 9.6 |
| SS11VL-R03820 | 0.3 | 82.0 | 4.10 | 45 | R03 Lot No. | 10.5 |
| SS11VL-R04520 | 0.4 | 52.0 | 2.60 | 45 | R04 Lot No. | 10.7 |
| SS11VL-R05350 | 0.5 | 35.0 | 1.80 | 45 | R05 Lot No. | 10.5 |
| SS11VL-R06270 | 0.6 | 27.0 | 1.30 | 45 | R06 Lot No. | 11.1 |
| SS11VL-R07190 | 0.7 | 19.0 | 0.90 | 45 | R07 Lot No. | 10.8 |
| SS11VL-R08125 | 0.8 | 12.5 | 0.74 | 45 | R08 Lot No. | 9.8 |
| SS11VL-R10093 | 1.0 | 9.3 | 0.44 | 45 | R10 Lot No. | 11.1 |
| SS11VL-R11076 | 1.1 | 7.6 | 0.40 | 45 | R11 Lot No. | 10.7 |
| SS11VL-R13052 | 1.3 | 5.2 | 0.28 | 45 | R13 Lot No. | 10.5 |
| SS11VL-R17036 | 1.7 | 3.6 | 0.19 | 45 | R17 Lot No. | 10.8 |
| SS11VL-R22020 | 2.2 | 2.0 | 0.12 | 45 | R22 Lot No. | 10.4 |
| SS11VL-R30009 | 3.0 | 0.9 | 0.06 | 45 | R30 Lot No. | 9.6 |

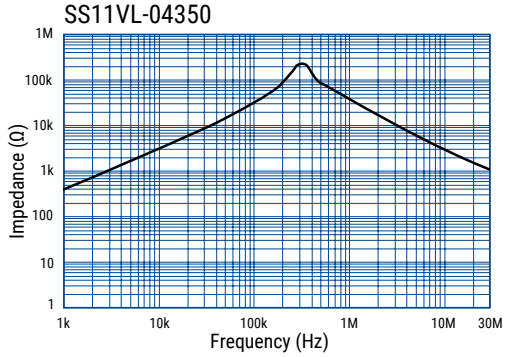
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## Frequency Characteristics

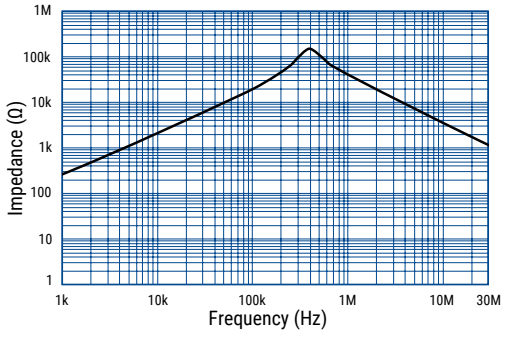
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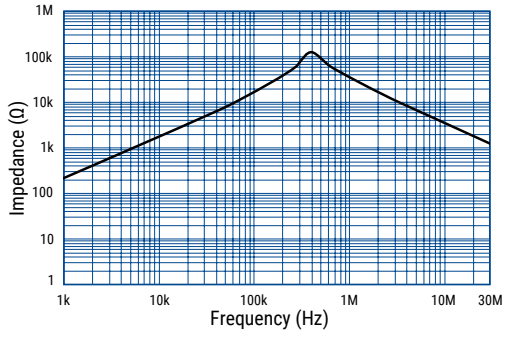

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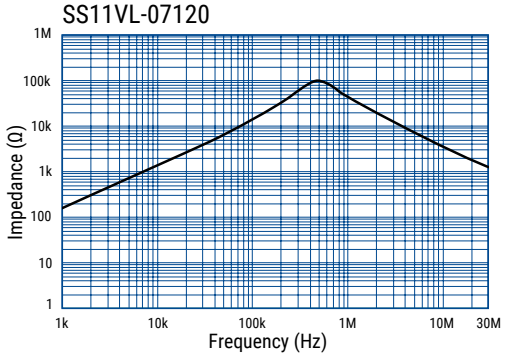

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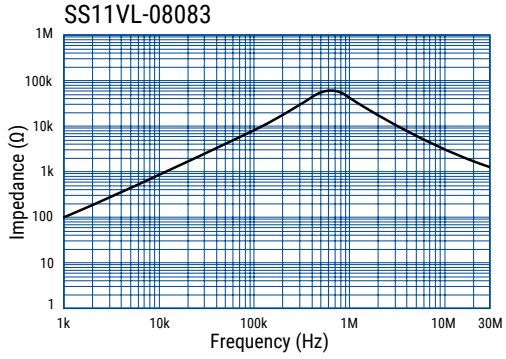

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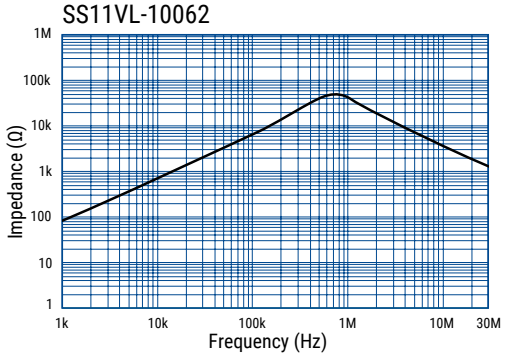

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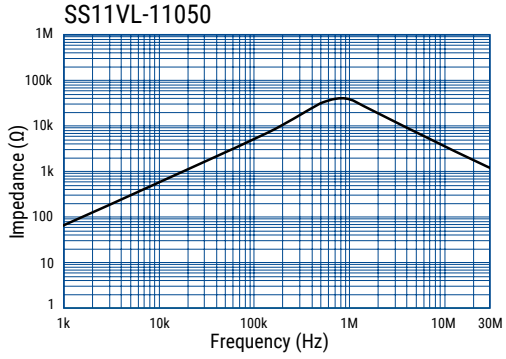

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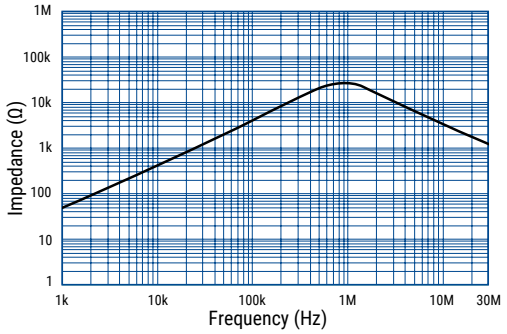



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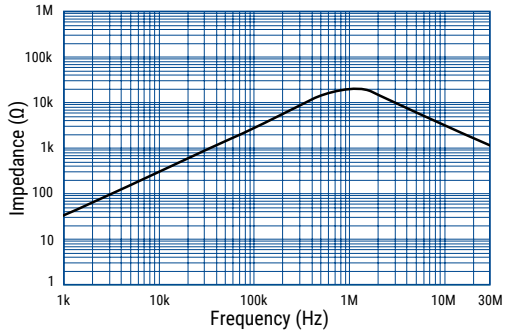


## Frequency Characteristics cont.

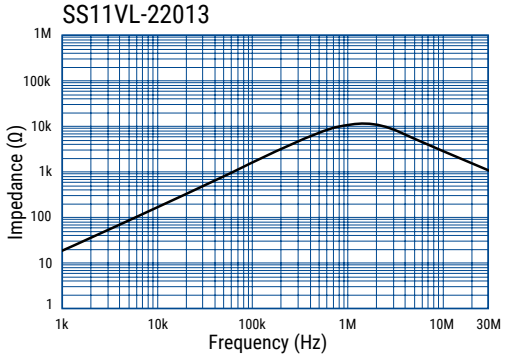
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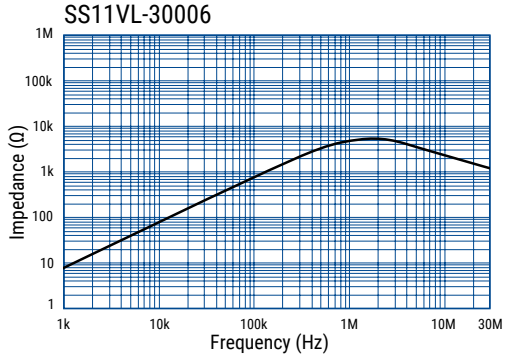

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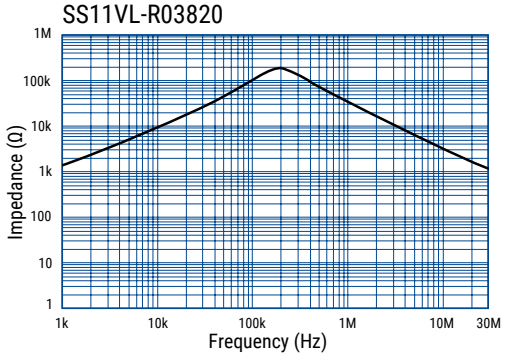

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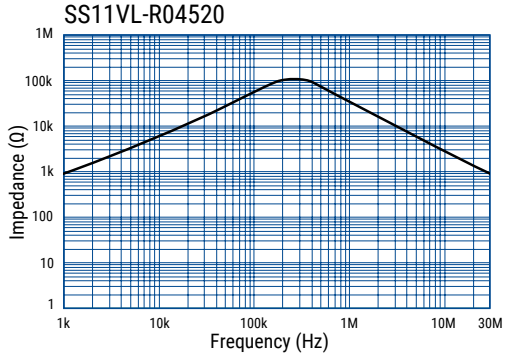

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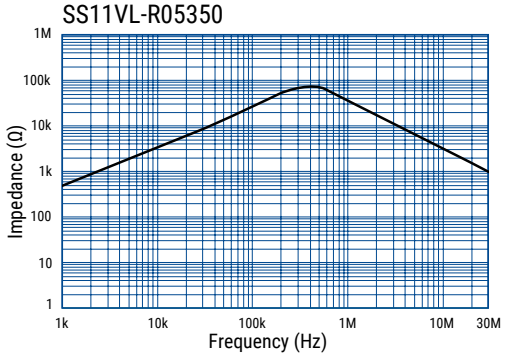

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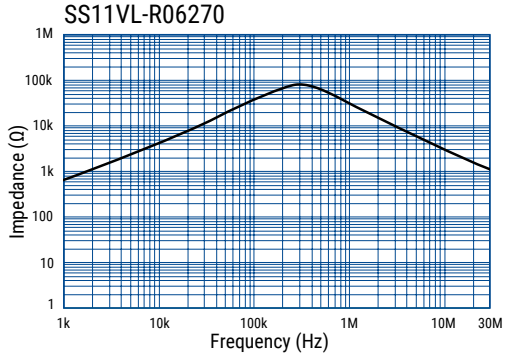

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SS11VL-R05350



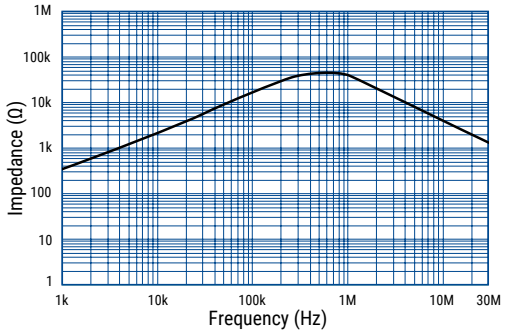

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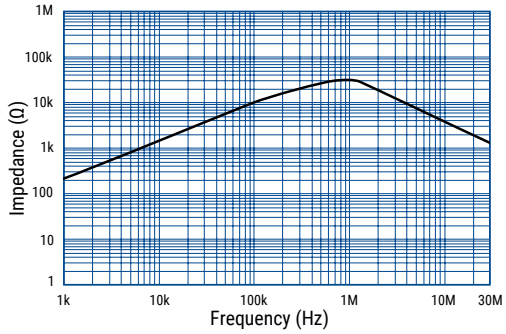

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## Frequency Characteristics cont.

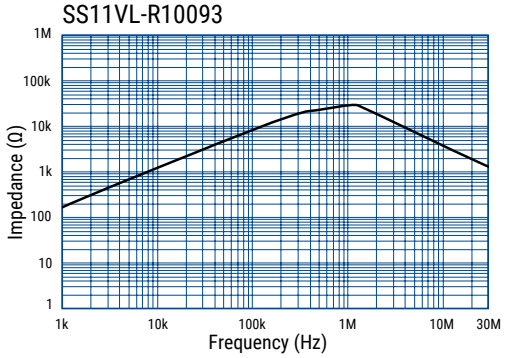
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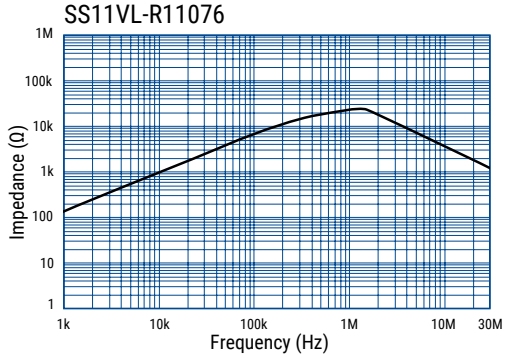

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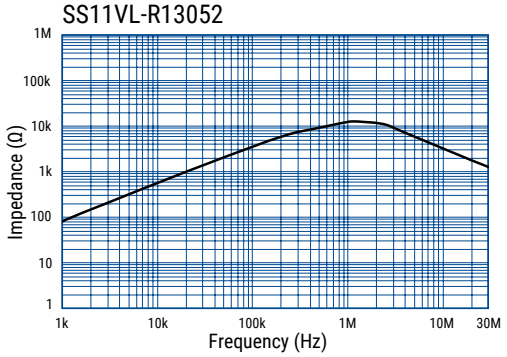

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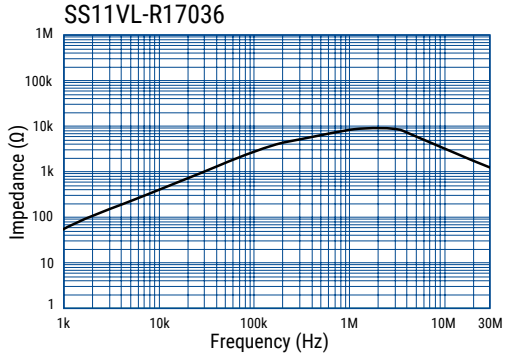

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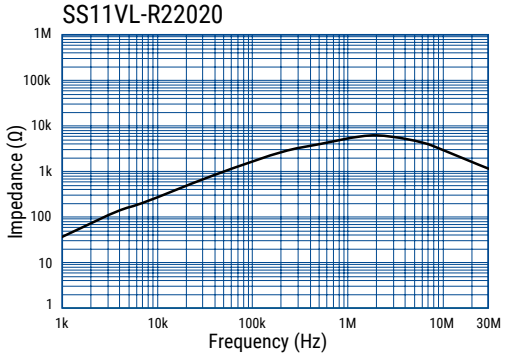

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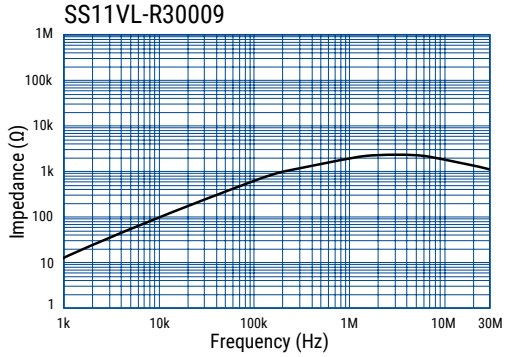

SS11VL-R17036




SS11VL-R22020




SS11VL-R30009



## Packaging

| Type | Packaging Type | Pieces Per Box |
|---|---|---|
| SS11VL | Tray | 600 |

## 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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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.

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