

# Common Mode for Power Line, Through-Hole Type, SH Series

## Overview

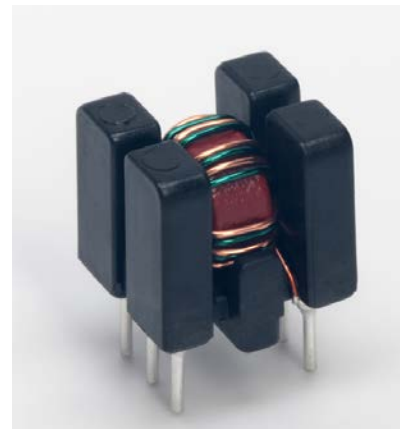
The KEMET SH coils are common mode chokes with a wide variety of characteristics. These through-hole toroidal coils are suitable for noise countermeasure in DC power line circuits.

## Applications

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

## Benefits

- Nickel-Zinc (Ni-Zn) ferrite core
- Operating temperature range from  $-25^{\circ}\text{C}$  to  $+80^{\circ}\text{C}$  (except SH-132 and SH-432:  $-25^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$ )
- UL94 V-0 flame retardant rated terminal base
- RoHS Compliant



## Part Number System

| SH-    | S                                      | 1  | 3                   | 2                        |
|--------|--|--|---------------------|--------------------------|
| Series | Number of Lines                        | Core Size  | Terminal Shape Type | Internal Management Code |
| SH-    | Blank = For 2 lines<br>S = For 3 lines | 1 = 7.6 mm<br>2 = 7.6 mm<br>3 = 7.6 mm<br>4 = 5.4 mm | 0<br>1<br>2<br>3    | 1<br>2<br>3              |

## Dimensions – Millimeters

| Part Number  | Dimensions - Millimeters |
|--|--------------------------|
| SH-101<br>SH-102<br>SH-201<br>SH-202<br>SH-301<br>SH-302 |                          |
| SH-211<br>SH-212<br>SH-311<br>SH-312                     |                          |
| SH-121<br>SH-122<br>SH-321<br>SH-322                     |                          |
| SH-132<br>SH-432   |                          |
| SH-S132  |                          |

## Environmental Compliance

All KEMET DC line filters are RoHS Compliant.



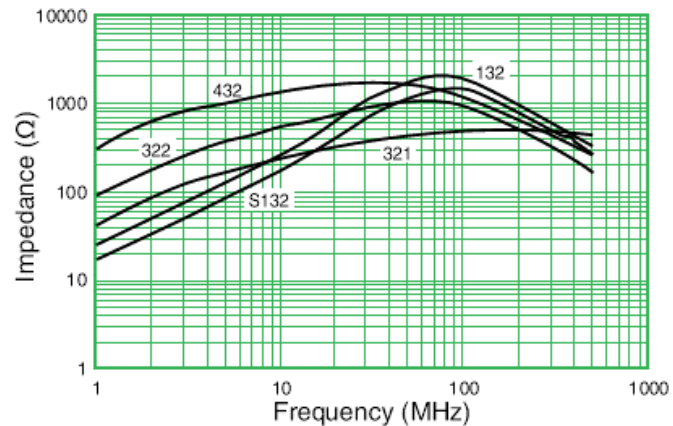
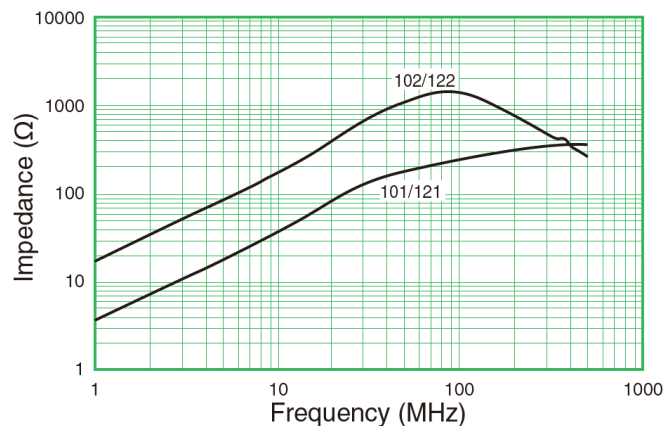
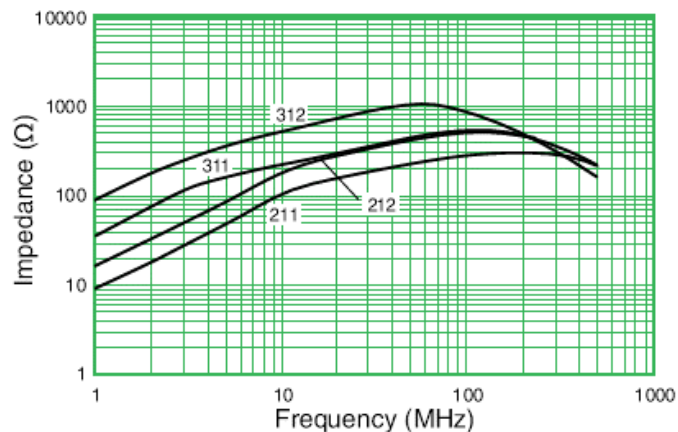
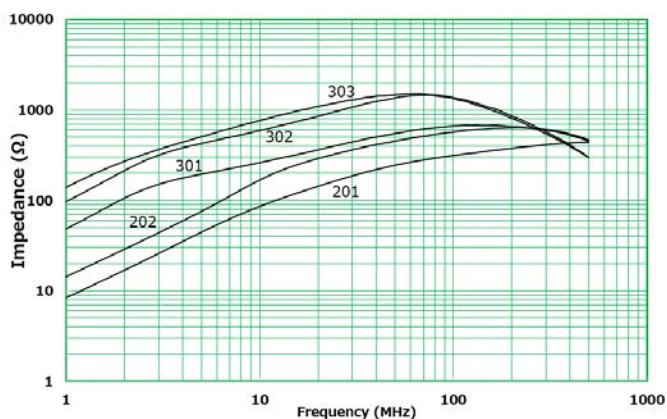
## Performance Characteristics

| Item                             | Performance Characteristics   |
|----------------------------------|---|
| Rated Voltage Range              | 50 – 150 VDC  |
| Rated Current Range              | 1 – 3 A   |
| Rated Inductance Range           | 0.35 – 30.00 $\mu$ H minimum  |
| Inductance Measurement Condition | 100 kHz, 1 mA   |
| Rated DC Resistance Range        | 10 – 81 m $\Omega$ maximum  |
| Operating Temperature Range      | -25°C to +80°C (not including self temperature rise)<br>Except SH-132 and SH-432:<br>-25°C to +60°C (not including self temperature rise) |

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

| Part Number | Rated Voltage DC (V) | Rated Current (A) | Inductance ( $\mu$ H) Minimum | DC Resistance/ Line (m $\Omega$ ) Maximum | Number of Lines | Weight (g) |
|-------------|----------------------|-------------------|-------------------------------|---|-----------------|------------|
| SH-101      | 150                  | 3.0               | 0.35                          | 16  | For 2 lines     | 1.63       |
| SH-102      | 150                  | 3.0               | 1.50                          | 26  | For 2 lines     | 1.67       |
| SH-201      | 150                  | 3.0               | 0.50                          | 16  | For 2 lines     | 1.63       |
| SH-202      | 150                  | 3.0               | 1.50                          | 20  | For 2 lines     | 1.65       |
| SH-301      | 150                  | 3.0               | 3.20                          | 22  | For 2 lines     | 1.71       |
| SH-302      | 150                  | 3.0               | 7.50                          | 26  | For 2 lines     | 1.74       |
| SH-303      | 50                   | 2.1               | 15.00                         | 10  | For 2 lines     | 1.70       |
| SH-211      | 150                  | 3.0               | 0.50                          | 18  | For 2 lines     | 1.74       |
| SH-212      | 150                  | 3.0               | 1.50                          | 23  | For 2 lines     | 1.78       |
| SH-311      | 150                  | 3.0               | 3.20                          | 25  | For 2 lines     | 1.74       |
| SH-312      | 150                  | 3.0               | 7.50                          | 30  | For 2 lines     | 1.78       |
| SH-121      | 50                   | 3.0               | 0.35                          | 11  | For 2 lines     | 1.53       |
| SH-122      | 50                   | 3.0               | 1.50                          | 20  | For 2 lines     | 1.63       |
| SH-321      | 50                   | 3.0               | 3.50                          | 14  | For 2 lines     | 1.53       |
| SH-322      | 50                   | 3.0               | 7.50                          | 20  | For 2 lines     | 1.58       |
| SH-132      | 50                   | 2.4               | 2.60                          | 51  | For 2 lines     | 1.10       |
| SH-432      | 50                   | 2.4               | 30.00                         | 51  | For 2 lines     | 1.12       |
| SH-S132     | 50                   | 1.0               | 1.70                          | 81  | For 3 lines     | 1.00       |

## Frequency Characteristics



## Packaging

| Part Type               | Packaging Type | Pieces per Box |
|-------------------------|----------------|----------------|
| SH-*0* Terminal Shape 0 | Bulk           | 3,000          |
| SH-*1* Terminal Shape 1 |                |                |
| SH-*2* Terminal Shape 2 | Tray           | 1,100          |
| SH-*3* Terminal Shape 3 | Bulk           | 3,000          |

## Handling Precautions

### Precautions for product storage

DC 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. Do not store near strong magnetic fields, as this might magnetize the product.

For optimized solderability, DC line filter stock should be used promptly, preferably within six 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, check and evaluate the value of the core temperature rise under actual operating conditions.

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## Export Control

### For customers in Japan

For products that are controlled items subject to the “Foreign Exchange and Foreign Trade Law” of Japan, the export license specified by the law is required for export.

### For customers outside Japan

DC Line Filters should not be used or sold for use in the development, production, stockpiling or utilization of any conventional weapons or mass-destructive weapons (nuclear weapons, chemical or biological weapons, or missiles) or any other weapons.

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