

# Normal Mode for Signal Line, Through-Hole Type, Bead Winding Type Series

## Overview

The KEMET winding type beads intended for normal mode noise suppression have a wide variety of characteristics. These through-hole beads are designed with our proprietary ferrite material and are suitable for noise countermeasure in DC signal line circuits.

## Applications

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

## Benefits

- Proprietary Manganese-Zinc (Mn-Zn) and Nickel-Zinc (Ni-Zn) ferrite materials (except B-6-\*\*\*)
- Operating temperature range from -25°C to +65°C (except B-6-\*\*\*: -20°C to +60°C)
- RoHS Compliant

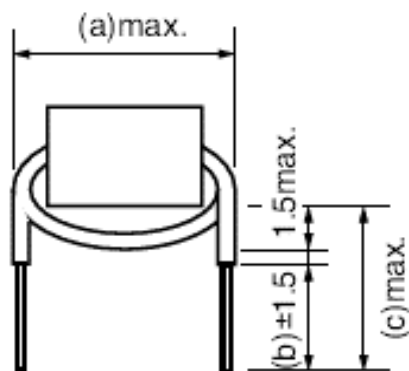
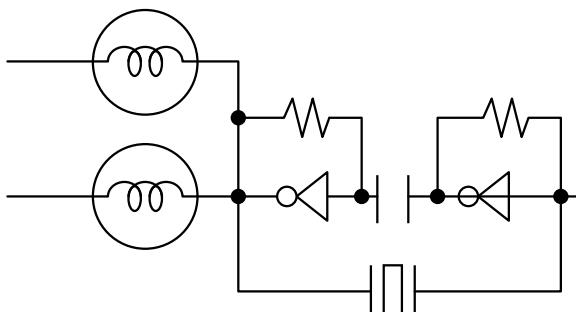


## Part Number System

| B-     | 6-                                     | 1                         |                                  |
|--------|--|---------------------------|----------------------------------|
| Series | Core Shape                             | Internal Management Code  |                                  |
| Bead   | Blank = Toroidal<br>6 = Square 6 holes | 1<br>3<br>4<br>5<br>6-22B | 6-31B<br>7<br>8<br>9<br>10<br>13 |

## Dimensions – Millimeters

Clock pulse oscillating section



| Part Number | Dimensions - Millimeters |        |           |
|-------------|--------------------------|--------|-----------|
|             | a Maximum                | b ±1.5 | c Maximum |
| B-1         | 5.5                      | 5.0    | 9.0       |
| B-3         | 9.0                      | 5.0    | 10.0      |
| B-4         | 10.5                     | 5.0    | 9.0       |
| B-5         | 11.0                     | 5.0    | 9.0       |
| B-7         | 6.0                      | 5.0    | 9.0       |

## Dimensions – Millimeters cont.

| Part Number        | Dimensions - Millimeters |
|--------------------|--------------------------|
| B-8<br>B-9<br>B-10 |                          |
| B-6-22B            |                          |
| B-6-31B            |                          |

## Environmental Compliance

All KEMET DC line filters are RoHS Compliant.



## Performance Characteristics

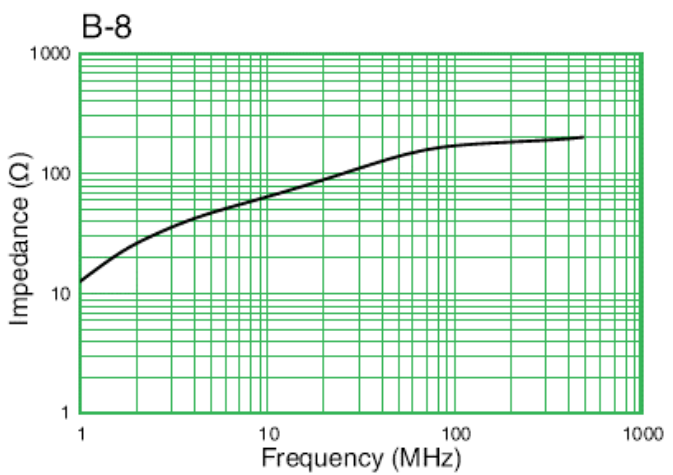
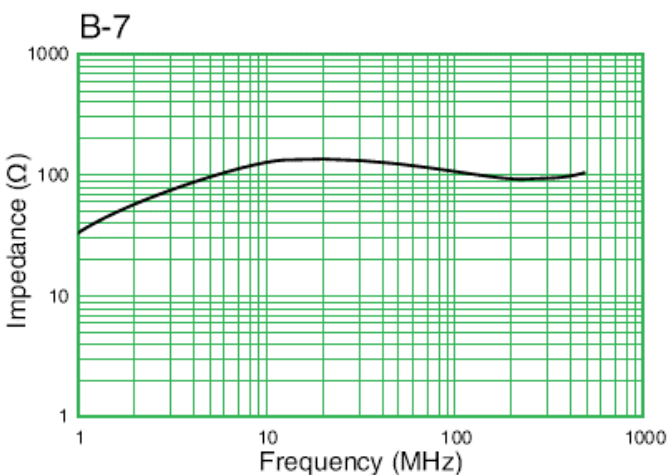
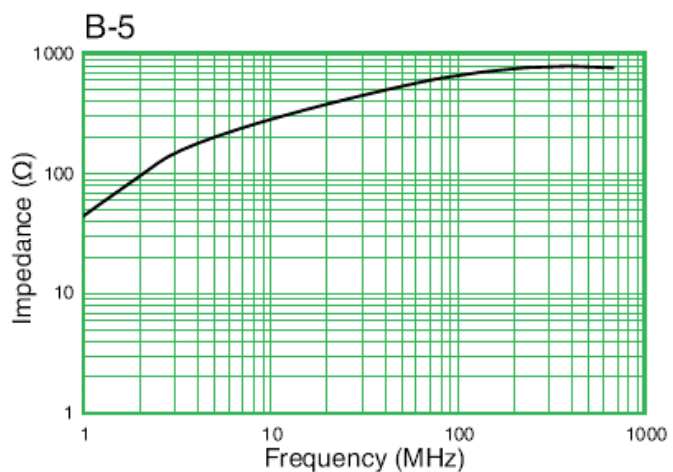
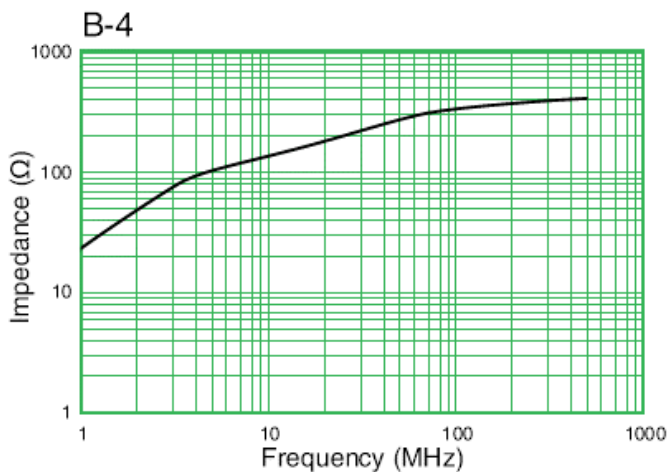
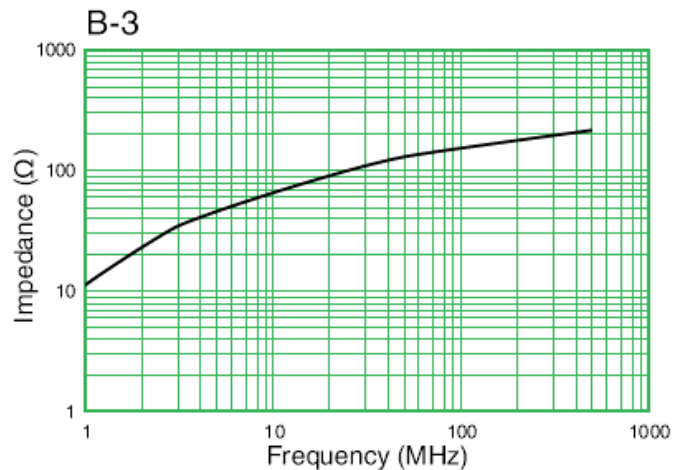
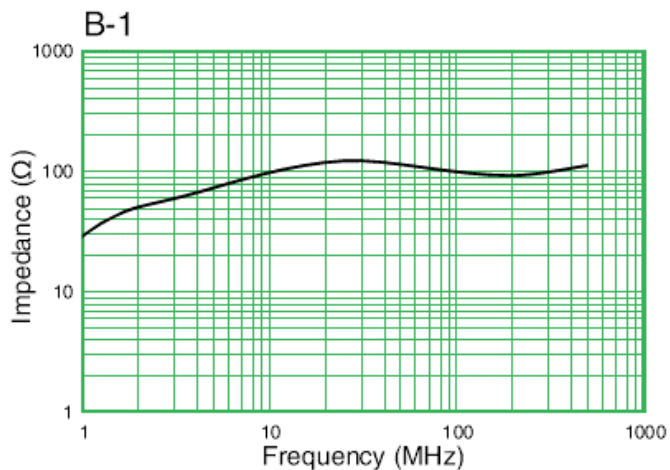
| Item                  | Performance Characteristics   |
|-----------------------|---|
| Rated Current Range   | 1.5 – 3.5 A   |
| Wire                  | Teflon and soft copper  |
| Number of Turns       | 2 – 5   |
| Operating Temperature | -25°C to +65°C (not including self-temperature rise)<br>except B-6-***:<br>-20°C to +60°C (not including self-temperature rise) |

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

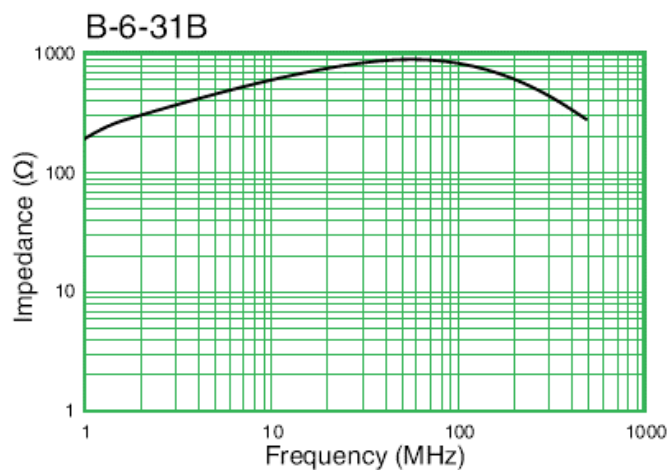
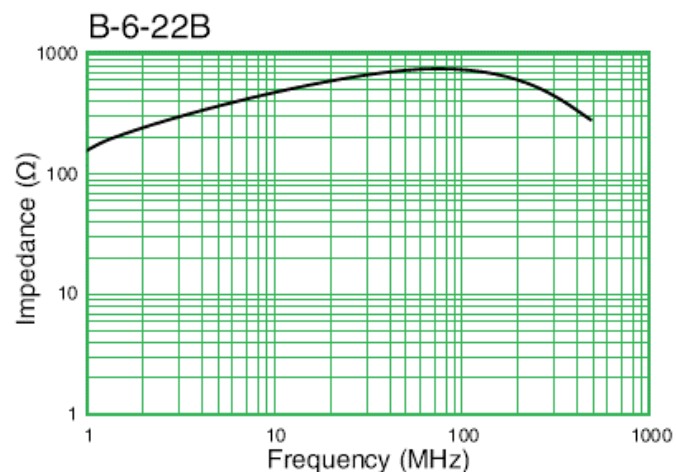
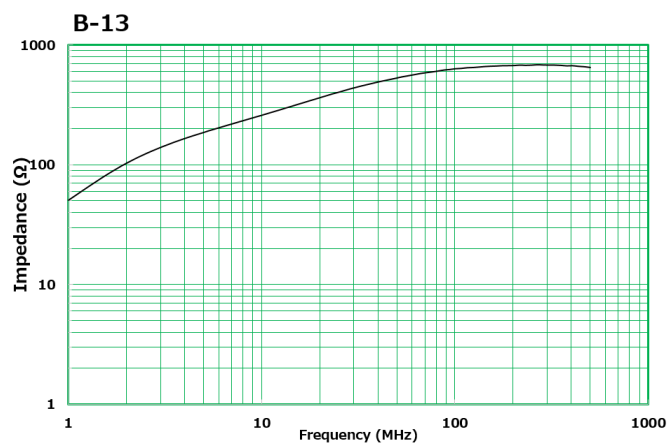
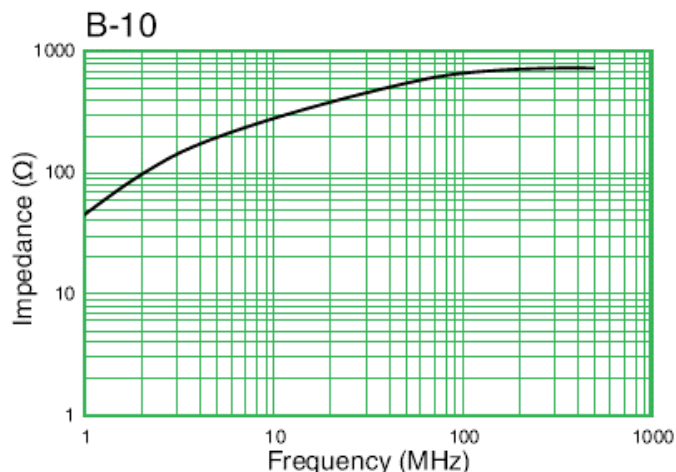
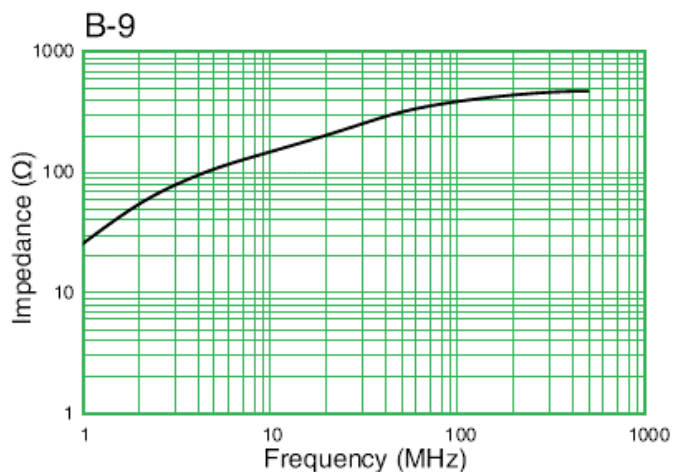
| Part Number | Rated Current DC <sup>1</sup> (A) | Core      | Wire  | Number of Turns | Weight (g) |
|-------------|-----------------------------------|-----------|---|-----------------|------------|
| B-1         | 1.5                               | B-20F-28  | Teflon Wire (φ 0.26: Single)<br>Color: White  | 2T              | 0.09       |
| B-3         | 3.5                               | B-20L-48B | Teflon Wire (φ 0.51: Single)<br>Color: Red    | 2T              | 0.44       |
| B-4         | 1.5                               | B-20L-44  | Teflon Wire (φ 0.26: Single)<br>Color: White  | 2T              | 0.48       |
| B-5         | 1.5                               | B-20L-44  | Teflon Wire (φ 0.26: Single)<br>Color: White  | 3T              | 0.50       |
| B-7         | 2.5                               | B-20F-28  | Teflon Wire (φ 0.32: Single)<br>Color: Green  | 2T              | 0.09       |
| B-8         | 2.5                               | B-20L-48B | Teflon Wire (φ 0.40: Single)<br>Color: Blue   | 2T              | 0.37       |
| B-9         | 2.5                               | B-20L-48B | Teflon Wire (φ 0.40: Single)<br>Color: Yellow | 3T              | 0.41       |
| B-10        | 2.5                               | B-20L-48B | Teflon Wire (φ 0.40: Single)<br>Color: Black  | 4T              | 0.43       |
| B-13        | 2.5                               | B-20L-48B | Teflon Wire (φ 0.40: Single)<br>Color: White  | 5T              | 0.50       |
| B-6-22B     | 2.0                               | -         | Soft Copper Wire (φ 0.6)                      | -               | 2.18       |
| B-6-31B     | 2.0                               | -         | Soft Copper Wire (φ 0.6)                      | -               | 2.20       |

<sup>1</sup> Rated current values are not guaranteed by impedance levels; these values are permissible levels when the lead wire temperature rise is 20°C.

## Frequency Characteristics



## Frequency Characteristics cont.



## Packaging

| Part Type | Packaging Type | Pieces per Package | Pieces per Box |
|-----------|----------------|--------------------|----------------|
| B-1       | Tray           | 4,000              | 24,000         |
| B-3       |                |                    |                |
| B-4       |                |                    |                |
| B-5       |                |                    |                |
| B-7       |                |                    |                |
| B-8       |                |                    |                |
| B-9       |                |                    |                |
| B-10      |                |                    |                |
| B-13      |                |                    |                |
| B-6-22B   |                |                    |                |
| B-6-31B   | 500            | 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.

## 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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