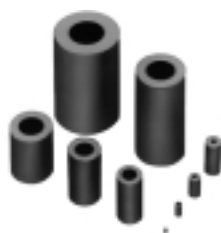


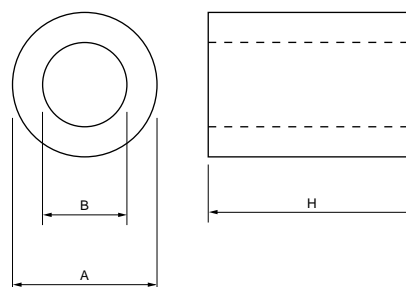
# Ferrite Cores for EMI Suppression Beads Core

## FSRH Series

### ■ Appearance



### ■ Dim. illustration



### ■ Features

1. Easy to use and excellent noise suppression. Data lines can be passed through core or wound around core several times.
2. Effective for suppressing noise at high frequencies

Murata can also supply Resin coated core which is shatter-proof with continuous noise removal functionality.

Please ask us about the resin coated core, if necessary.

### ■ Applications

1. For Data-processing equipment (PC, PDA, Game machine, etc.), and peripheral equipments (Printer, FDD, HDD, Display, etc.)
2. For digital equipments (DSC, DVC, DVD recorder, Mobile phone, Digital audio, Optical drive, PDP/LCD/FED, facsimile, etc.)


### ■ Rated Value

Part Number	A : Outer Dimension	B : Inner Dimension	H : Length Dimension	Impedance at 100MHz (1 turn)	Note
<b>FSRH021049RNB01B</b>	1.95mm±0.15mm	1.02mm±0.15mm	4.9mm±0.25mm	34ohm(typ.)	-
<b>FSRH030060RNB00B</b>	3.36mm±0.15mm	1.1mm±0.15mm	6.0mm±0.2mm	74ohm(typ.)	-
<b>FSRH041D85RNB00B</b>	3.6mm±0.2mm	1.0mm±0.2mm	4.85mm±0.2mm	66ohm(typ.)	-
<b>FSRH044C00RNB00B</b>	3.6mm±0.1mm	1.5mm±0.1mm	3.0mm±0.15mm	40ohm(typ.)	-
<b>FSRH044040RNB00B</b>	3.6mm±0.1mm	1.5mm±0.1mm	4.0mm±0.15mm	50ohm(typ.)	-
<b>FSRH044050RNB00B</b>	3.6mm±0.1mm	1.5mm±0.1mm	5.0mm±0.15mm	53ohm(typ.)	-
<b>FSRH050050RN000B</b>	4.7mm±0.3mm	1.4mm±0.2mm	5.0mm±0.3mm	64ohm(typ.)	-
<b>FSRH050100RN000B</b>	4.7mm±0.3mm	1.4mm±0.2mm	10.0mm±0.3mm	120ohm(typ.)	-
<b>FSRH060080RN001B</b>	5.5mm±0.3mm	2.7mm±0.2mm	8.0mm±0.5mm	64ohm(typ.)	-

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### ⚠ Note:

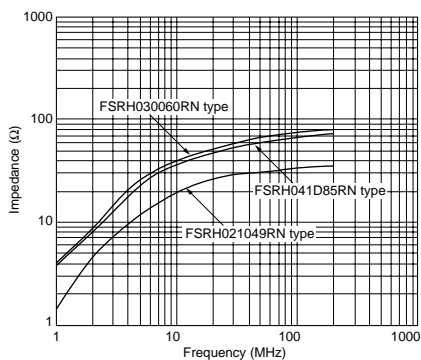
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Part Number	A : Outer Dimension	B : Inner Dimension	H : Length Dimension	Impedance at 100MHz (1 turn)	Note
<b>FSRH070080RN000B</b>	7.0mm±0.3mm	4.0mm±0.2mm	8.0mm±0.5mm	59ohm(typ.)	-
<b>FSRH070140RN000B</b>	7.0mm±0.3mm	4.0mm±0.2mm	14.0mm±0.5mm	82ohm(typ.)	-
<b>FSRH074140RNF00B</b>	7.0mm±0.3mm	4.0mm±0.4mm	14.0mm±0.5mm	93ohm(typ.)	Division Type
<b>FSRH090100RN000B</b>	9.0mm±0.3mm	5.0mm±0.3mm	10.0mm±0.5mm	72ohm(typ.)	For USB/IEEE1394
<b>FSRH090160RN000B</b>	9.0mm±0.3mm	5.0mm±0.3mm	16.0mm±0.5mm	100ohm(typ.)	For USB/IEEE1394
<b>FSRH090200RN000T</b>	9.0mm±0.3mm	5.0mm±0.3mm	20.0mm±0.8mm	135ohm(typ.)	For USB/IEEE1394
<b>FSRH091100RN000B</b>	9.0mm±0.3mm	4.3mm±0.2mm	10.0mm±0.5mm	94ohm(typ.)	For USB/IEEE1394
<b>FSRH091160RN000T</b>	9.0mm±0.3mm	4.3mm±0.2mm	16.0mm±0.5mm	145ohm(typ.)	For USB/IEEE1394
<b>FSRH100150RTB00T</b>	10.0mm±0.3mm	6.0mm±0.2mm	15.0mm±0.5mm	92ohm(typ.)	For USB/IEEE1394
<b>FSRH120150RT000T</b>	12.0mm±0.3mm	7.0mm±0.3mm	15.0mm±0.5mm	90ohm(typ.)	For USB/IEEE1394
<b>FSRH120200RT000T</b>	12.0mm±0.3mm	7.0mm±0.3mm	20.0mm±0.5mm	120ohm(typ.)	For USB/IEEE1394
<b>FSRH120285RT000T</b>	12.0mm±0.3mm	7.0mm±0.3mm	28.5mm±0.8mm	175ohm(typ.)	For USB/IEEE1394
<b>FSRH121150RT000T</b>	12.0mm±0.3mm	5.6mm±0.3mm	15.0mm±0.5mm	130ohm(typ.)	For USB/IEEE1394
<b>FSRH121200RT000T</b>	12.0mm±0.3mm	5.6mm±0.3mm	20.0mm±0.5mm	170ohm(typ.)	For USB/IEEE1394
<b>FSRH121250RT000T</b>	12.0mm±0.3mm	5.6mm±0.3mm	25.0mm±0.7mm	223ohm(typ.)	For USB/IEEE1394
<b>FSRH142150RX000T</b>	14.0mm±0.5mm	8.0mm±0.5mm	15.0mm±0.5mm	97ohm(typ.)	-
<b>FSRH142200RX000T</b>	14.0mm±0.5mm	8.0mm±0.5mm	20.0mm±0.5mm	127ohm(typ.)	-
<b>FSRH142280RX000T</b>	14.0mm±0.5mm	8.0mm±0.5mm	28.0mm±1.0mm	170ohm(typ.)	-
<b>FSRH162200RN000T</b>	16.3mm±0.5mm	8.3mm±0.4mm	20.0mm±0.8mm	162ohm(typ.)	-
<b>FSRH162280RN000T</b>	16.3mm±0.5mm	8.3mm±0.4mm	28.0mm±0.8mm	225ohm(typ.)	-
<b>FSRH190285RT000T</b>	19.0mm±0.6mm	10.0mm±0.5mm	28.5mm±0.8mm	200ohm(typ.)	-

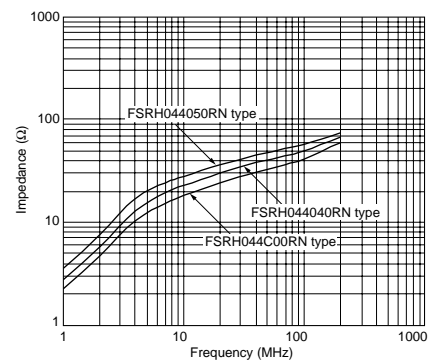
### ■ Impedance Frequency Characteristics


**FSRH021/FSRH030/FSRH041**



### ■ Impedance Frequency Characteristics

**FSRH044**



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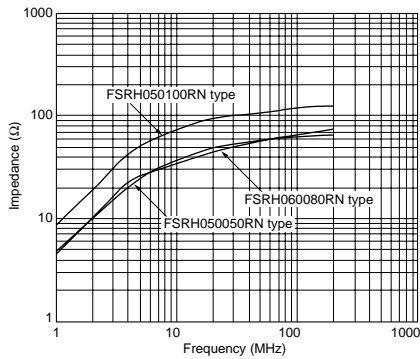
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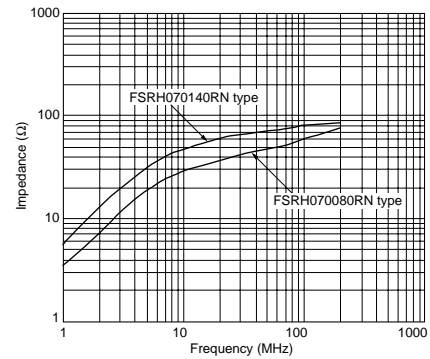
### ■ Impedance Frequency Characteristics

**FSRH050/FSRH060**



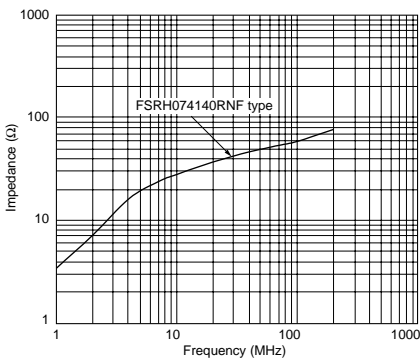
### ■ Impedance Frequency Characteristics

**FSRH070**



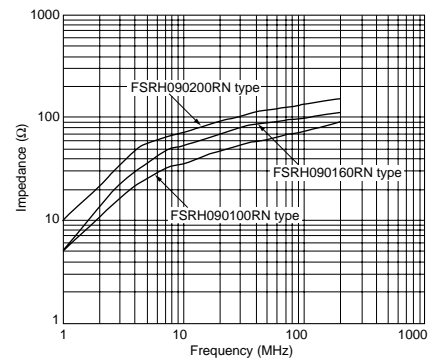
### ■ Impedance Frequency Characteristics

**FSRH074**



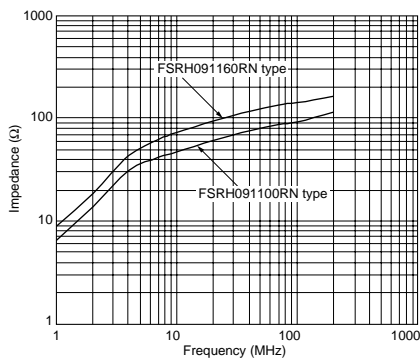
### ■ Impedance Frequency Characteristics

**FSRH090**



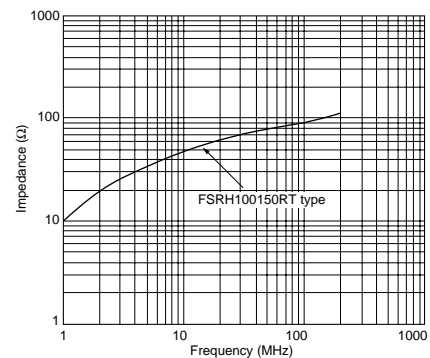
### ■ Impedance Frequency Characteristics


**FSRH091**



### ■ Impedance Frequency Characteristics

**FSRH100**



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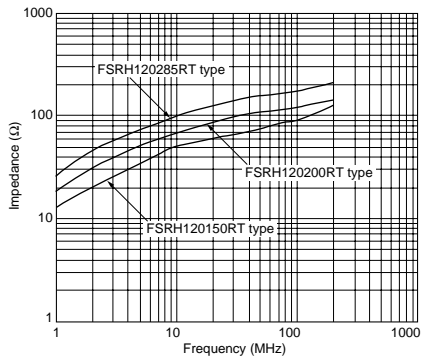
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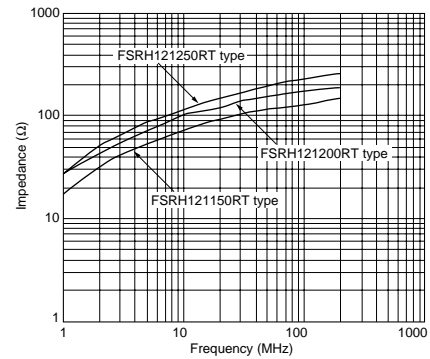
### ■ Impedance Frequency Characteristics

**FSRH120**



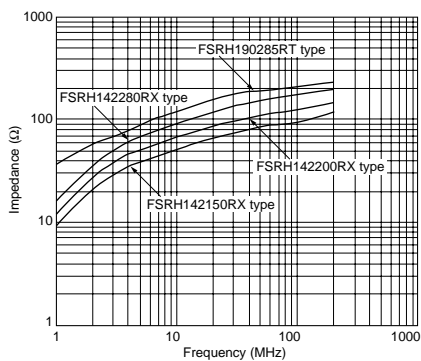
### ■ Impedance Frequency Characteristics

**FSRH121**



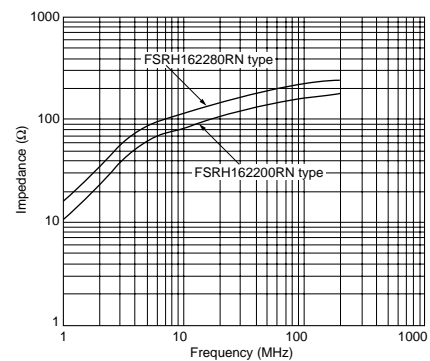
### ■ Impedance Frequency Characteristics

**FSRH142/FSRH190**

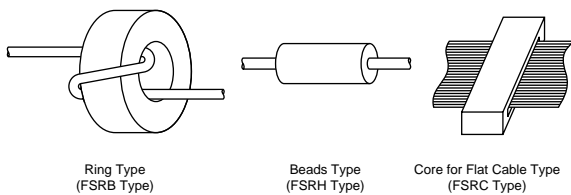


### ■ Impedance Frequency Characteristics

**FSRH162**



### ■ Cases to Use



Ring Type  
(FSRB Type)


Beads Type  
(FSRH Type)

Core for Flat Cable Type  
(FSRC Type)

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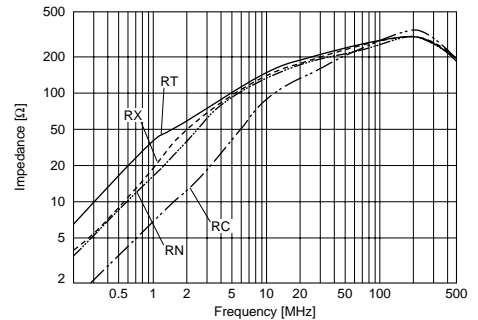
## ■ Data/Notice

### ■ Standard Characteristics of Ferrite Materials

Material	$\mu$	Bs (mT)	Tc (°C)	$\rho$ ( $\Omega$ -m)
RT	1600	290	$\geq 110$	$> 10^5$
RX	750	330	$\geq 110$	$> 10^5$
RN	550	310	$\geq 130$	$> 10^5$
RC	250	320	$\geq 140$	$> 10^5$

Size of ferrite core (30 $\phi$  - 20 $\phi$  - 6)

### ■ Ferrite Material Comparison



Size of Ferrite Core (30 $\phi$  - 20 $\phi$  - 6)  
N=3 turns

### ■ Notice (Storage and Operating Condition)

This product is designed for use in the following environment.

FSRH/FSRB/FSRC/FSMA/FSSA\_T

Operating Temperature: -25 to 85 degrees C

Storage Temperature: -25 to 125 degrees C

FSSA\_S

Operating Temperature: -25 to 85 degrees C

Storage Temperature: -25 to 85 degrees C

Do not use in the following environments or under the following conditions:

1. Ambient air containing corrosive gas  
(Chlorine gas, Hydrogen sulfide gas, Ammonia gas, Sulfuric acid gas, Nitric oxide gas, etc.)
2. In liquid
3. Other environments similar to 1 through 2

### ■ Notice (Handling)

1. Protect product from damage that may occur in transit such as cracking of core.
2. Handle product with care. Do not drop and throw.
3. Do not apply excessive force to the product.

### FSSA\_S Storage

Store in manufacture's package or tightly re-closed box with following conditions.

Temperature: -10 to +35 degrees C

Humidity: 15 to 85% RH

Use this product within 6 months after receipt.

The storage in high temperature, high humidity or quick temperature change will damage to the function of tape.

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