



Ni-Zn

Ferrites for EMI Suppression

SH/SU series(Square Type)

SH
SU

**REMINDERS FOR USING THESE PRODUCTS**

Please be sure to read this manual thoroughly before using the products.

The products listed on this catalog are intended for use in general electronic equipment (AV equipment, telecommunications equipment, home appliances, amusement equipment, computer equipment, personal equipment, office equipment, measurement equipment, industrial robots) under a normal operation and use condition.

The products are not designed or warranted to meet the requirements of the applications listed below, whose performance and/or quality require a more stringent level of safety or reliability, or whose failure, malfunction or trouble could cause serious damage to society, person or property.

When using the products for specific purposes, please first make confirmations in areas such as safety, reliability, and quality.

Please understand that we are not in a position to be held responsible for any damage or the like caused by any use exceeding the range or conditions of this specification sheet or by any use in the specific applications.

- | | |
|---|--|
| (1) Aerospace/Aviation equipment | (9) Military equipment |
| (2) Transportation equipment (electric trains, ships, etc.) | (10) Electric heating apparatus, burning equipment |
| (3) Medical equipment | (11) Disaster prevention/crime prevention equipment |
| (4) Power-generation control equipment | (12) Safety equipment |
| (5) Atomic energy-related equipment | (13) Other applications that are not considered general-purpose applications |
| (6) Seabed equipment | |
| (7) Transportation control equipment | |
| (8) Public information-processing equipment | |

When using this product in general-purpose standard applications, you are kindly requested to take into consideration securing protection circuit/equipment or providing backup circuits, etc to ensure higher safety.

Ferrites for EMI Suppression

Product compatible with RoHS directive
Halogen-free

Overview of the SH

FEATURES

- Both regular and clamp-on types are available for use with flat cables and flexible substrate. Moreover, the thin type matched to small space is prepared.

APPLICATION

Imaging devices, audio equipment, automotive electronics, telecommunication devices, office automation equipment, and digital interface various other cables.

- Absorption EMI and penetrating noise
- Prevent parasitic oscillation

PART NUMBER CONSTRUCTION

SH series (Regular type)

HF70	SH	6	×	0.6	×	5	□□□□
Material	Core shape	Inside width dimensions (B)		Inside height dimensions (D)		Outside width dimensions (E)	Internal code

SU series (Clamp-on type)

HF70	SU	18.8	×	1.1	×	7	□□□□
Material	Core shape	Inside width dimensions (B)		Inside height dimensions (D)		Length dimensions (E)	Internal code

RANGE OF USE AND STORAGE TEMPERATURE

Temperature range*	
Operating temperature (°C)	Storage temperature** (°C)
-40 to +85	-40 to +85

* The temperature range has a different case by materials.

** The Storage temperature range is for after the circuit board is mounted.

RoHS Directive Compliant Product: See the following for more details related to RoHS Directive compliant products. <http://www.tdk.co.jp/rohs/>

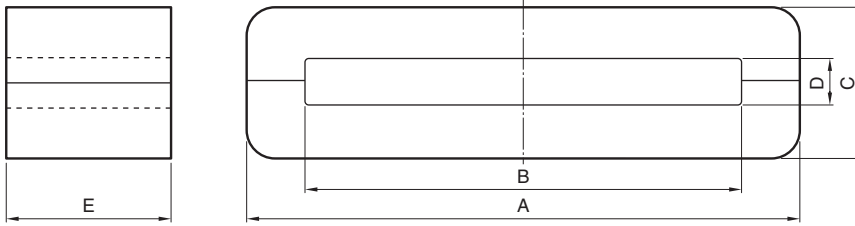
Halogen-free: Indicates that Cl content is less than 900ppm, Br content is less than 900ppm, and that the total Cl and Br content is less than 1500ppm.

• All specifications are subject to change without notice.

Ni-Zn SH series



SHAPES AND DIMENSIONS



HF70	SH	6	×	0.6	×	5	□□□□
Material	Core shape	Inside width dimensions (B)		Inside height dimensions (D)		Outside width dimensions (E)	Internal code

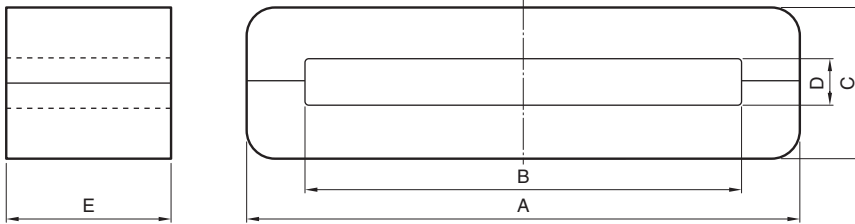
Part No.	Dimensions					Electrical characteristics		Features
	A (mm)	B	C	D	E	Impedance Z typ. (Ω) 23°C 10MHz	100MHz	
HF70SH6X0.6X5	8.5±0.25	6.0±0.2	2.0±0.2	0.6±0.2	5.0±0.3	11	25	Thin type
HF70SH7X0.6X8	9.5±0.3	7.0±0.3	2.1±0.25	0.6±0.2	8.0±0.3	14	30	Thin type
HF70SH8X0.6X5	10.5±0.3	8.0±0.3	2.1±0.25	0.6±0.2	5.0±0.3	10	24	Thin type
HF56SH8X1X10	12.2±0.3	8.0±0.3	5.5±0.3	1.0±0.3	10.0±0.3	30	65	
HF70SH8X1X18	12.2±0.3	8.0±0.3	5.5±0.3	1.0±0.3	18.0±0.5	71	128	
HF70SH9X0.7X10	12.6±0.3	9.0±0.3	3.75±0.3	0.7±0.3	10.0±0.3	27	54	
HF56SH9X0.7X10	12.6±0.3	9.0±0.3	3.75±0.3	0.7±0.3	10.0±0.3	21	51	
HF70SH10X1X6	14.0±0.3	10.0±0.3	5.0±0.3	1.0±0.3	6.0±0.3	20	37	
HF56SH10X1X8	14.0±0.3	10.0±0.3	5.0±0.3	1.0±0.3	8.0±0.3	19	43	
HF40SH10X0.6X3-G	12.5±0.3	10.0±0.3	2.1±0.25	0.6±0.2	3.0±0.2	3	21	Thin type
HF70SH10X0.6X5	12.5±0.3	10.0±0.3	2.1±0.25	0.6±0.2	5.0±0.3	8	23	Thin type
HF70SH11X0.7X8	13.5±0.3	11.0±0.3	2.75±0.3	0.7±0.3	8.0±0.3	15	32	Thin type
HF70SH12X0.9X12	16.0±0.3	12.0±0.3	4.65±0.7	0.9±0.1	12.0±0.4	31	58	
HF70SH13X0.7X3A	17.0±0.5	13.0±0.4	2.3±0.25	0.7±0.2	3.0±0.2	5	19	Thin type
HF70SH13X0.7X7	17.0±0.5	13.0±0.4	2.75±0.3	0.7±0.3	7.0±0.4	12	36	Thin type
HF56SH13X0.7X8B	16.6±0.4	13.0±0.3	3.75±0.3	0.7±0.3	8.0±0.3	13	36	
HF70SH13X0.7X10	17.0±0.5	13.0±0.4	2.75±0.3	0.7±0.3	10.0±0.4	17	40	Thin type
HF70SH13X0.7X12	17.0±0.5	13.0±0.4	2.75±0.3	0.7±0.3	12.0±0.4	19	45	Thin type
HF56SH13X0.7X12B	16.6±0.4	13.0±0.3	3.75±0.3	0.7±0.3	12.0±0.5	19	53	
HF70SH13X1.3X12	17.0±0.5	13.0±0.4	3.5±0.3	1.3±0.3	12.0±0.4	19	41	
HF70SH15X0.7X8	17.5±0.4	15.0±0.3	2.75±0.3	0.7±0.3	8.0±0.3	12	36	Thin type
HF40SH15X0.7X8-G	17.5±0.4	15.0±0.3	2.75±0.3	0.7±0.3	8.0±0.3	4.5	34	Thin type
HF70SH15X0.7X10	17.5±0.4	15.0±0.3	2.75±0.3	0.7±0.3	10.0±0.3	14	40	Thin type
HF56SH15X0.7X12A	18.6±0.4	15.0±0.3	3.75±0.3	0.7±0.3	12.0±0.5	17	52	
HF70SH17.5X0.6X8	20.5±0.4	17.5±0.4	2.0±0.2	0.6±0.2	8.0±0, -0.4	8	33	Thin type
HF40SH18.5X0.7X8-G	21.5±0.4	18.5±0.4	3.0±0.3	0.7±0.3	8.0±0.3	5	36	Thin type
HF70SH18.5X0.7X6	21.5±0.4	18.5±0.4	3.0±0.3	0.7±0.3	6.0±0.3	9	27	Thin type
HF70SH18.5X0.7X8	21.5±0.4	18.5±0.4	3.0±0.3	0.7±0.3	8.0±0.3	11	33	Thin type
HF70SH18.8X1.1X7	23.8±0.4	18.8±0.4	6.3±0.4	1.1±0.2	7.0±0.5	19	41	
HF56SH18.8X1.1X7	23.8±0.4	18.8±0.4	6.3±0.4	1.1±0.3	7.0±0.3	13	35	
HF70SH18.8X1.1X15	23.8±0.4	18.8±0.4	6.3±0.4	1.1±0.2	15.0±0.5	38	75	
HF56SH18.8X1.1X15	23.8±0.4	18.8±0.4	6.3±0.4	1.1±0.2	15.0±0.5	29	74	
HF70SH20X0.5X8	22.6±0.4	20.0±0.4	1.8±0.25	0.5±0.2	8.0±0.3	8	35	Thin type
HF70SH20X0.7X8	23.0±0.6	20.0±0.6	3.0±0.4	0.7±0.4	8.0±0.5	12	37	Thin type
HF70SH20X0.7X12	23.0±0.6	20.0±0.6	3.0±0.4	0.7±0.4	12.0±0.5	15	50	Thin type
HF70SH20X0.9X12	23.0±0.6	20.0±0.6	3.0±0.4	0.9±0.2	12.0±0.5	14	40	Thin type

• All specifications are subject to change without notice.

Ni-Zn SH series



SHAPES AND DIMENSIONS



HF70	SH	21	×	0.8	×	7	□□□□
Material	Core shape	Inside width dimensions (B)		Inside height dimensions (D)		Outside width dimensions (E)	Internal code

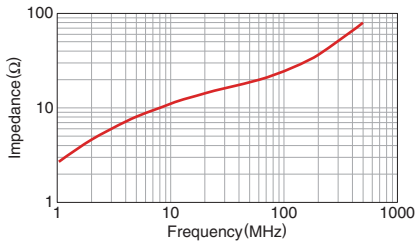
Part No.	Dimensions					Electrical characteristics		Features
	A	B	C	D	E	Impedance Z		
	(mm)					typ. (Ω) 23°C		
						10MHz	100MHz	
HF70SH21X0.8X7	25.0±0.8	21.0±0.7	5.0±0.5	0.8±0.4	7.0±0.5	16	45	
HF70SH21X0.8X12	25.0±0.8	21.0±0.7	5.0±0.5	0.8+0.4, −0.3	12.0±0.5	22	53	
HF56SH21X0.8X12	25.0±0.8	21.0±0.7	5.0±0.5	0.8±0.4	12.0±0.5	18	56	
HF70SH22X0.8X7	26.0±0.8	22.0±0.7	5.0±0.5	0.8±0.4	7.0±0.5	15	40	
HF56SH22X0.8X12	26.0±0.8	22.0±0.7	5.0±0.5	0.8±0.4	12.0±0.5	17	56	
HF70SH25X0.7X10	28.6±0.4	25.0±0.5	3.75±0.4	0.7±0.3	10.0±0.3	14	47	
HF70SH25X1X15	31.0±0.5	25.0±0.5	7.0±0.3	1.0±0.3	15.0±0.8	36	80	
HF70SH27X1.3X10	33.5±0.8	27.0±0.8	6.5±0.4	1.3±0.3	10.0±0.5	21	55	
HF56SH27X1.3X10	33.5±0.8	27.0±0.8	6.5±0.4	1.3±0.3	10.0±0.5	14	45	
HF70SH28X0.7X12	32.0±0.8	28.0±0.8	3.5±0.4	0.7±0.4	12.0±0.5	16	58	
HF70SH28X2X10	34.0±0.5	28.0±0.5	7.5±0.5	2.0±0.2	10.0±0.3	23	53	
HF70SH32X2X12.5	40.0±1.0	32.0±1.0	10.0±0.5	2.0±0.5	12.5±0.5	27	64	
HF70SH32X2X25	40.0±1.0	32.0±1.0	10.0±0.5	2.0±0.5	25.0±1.0	52	120	
HF70SH35X0.8X8	39.0±0.8	35.0±0.8	4.0±0.5	0.8±0.5	8.0±0.5	10	40	
HF70SH35X0.8X12	39.0±0.8	35.0±0.8	4.0±0.5	0.8±0.5	12.0±0.5	15	60	
HF70SH35X1.3X12	40.0±1.0	35.0±1.0	6.5±0.4	1.3±0.3	12.0±0.5	19	58	
HF56SH35X1.3X12	40.0±1.0	35.0±1.0	6.5±0.4	1.3±0.3	12.0±0.5	16	60	
HF70SH40X1.3X8	46.5±1.0	40.0±1.0	6.5±0.4	1.3±0.3	8.0±0.4	12	41	
HF70SH40X2X12	50.0+0, −2.0	40.0+2.0, −0	12.0±0.5	2.0±0.5	12.0±1.0	25	60	
HF70SH41X0.8X12	46.0±1.0	41.0±1.0	4.5±0.5	0.8+0.5, −0.2	12.0±0.5	16	60	
HF70SH42X0.9X12	47.0±1.0	42.0±0.8	4.6±0.5	0.95±0.35	12.0±0.5	14	55	
HF70SH46X1.9X10	53.0±1.0	46.0±1.0	7.1±0.6	1.9±0.5	10.0±0.5	15	48	
HF70SH46X1.9X13	56.0±1.0	46.0±1.0	12.0±0.5	1.9±0.5	13.0±0.5	29	73	
HF70SH52X1X12	57.0±1.0	52.0±1.0	5.0±0.5	1.0±0.5	12.0±0.5	16	62	

Ni-Zn SH series

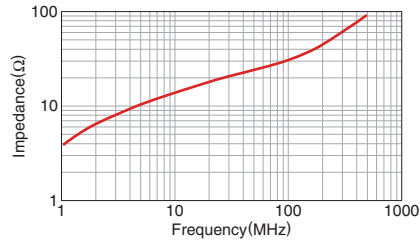
ELECTRICAL CHARACTERISTICS

IMPEDANCE VS. FREQUENCY CHARACTERISTICS

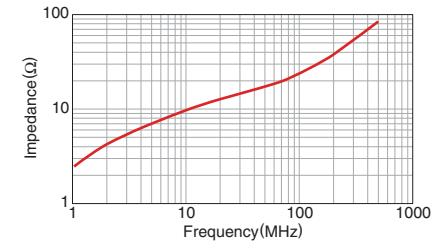
HF70SH6X0.6X5



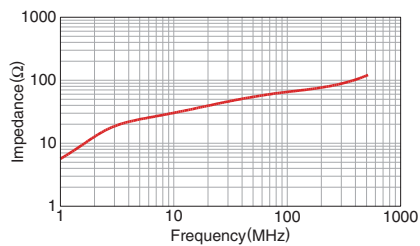
HF70SH7X0.6X8



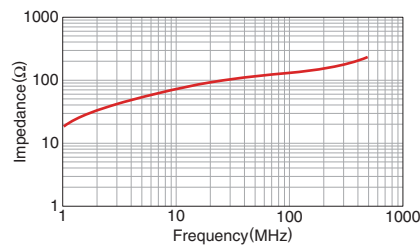
HF70SH8X0.6X5



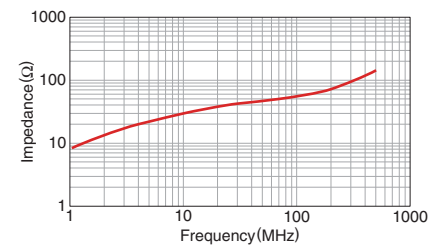
HF56SH8X1X10



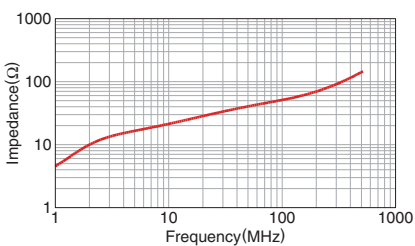
HF70SH8X1X18



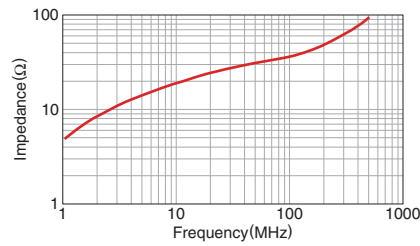
HF70SH9X0.7X10



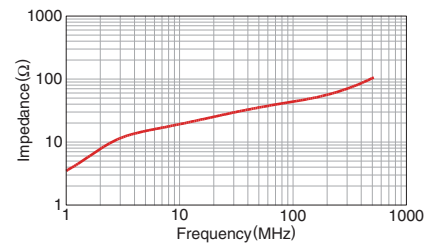
HF56SH9X0.7X10



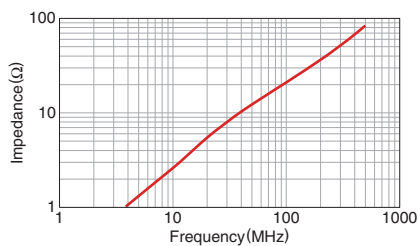
HF70SH10X1X6



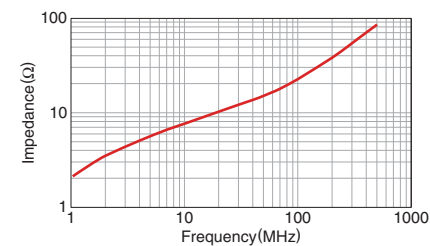
HF56SH10X1X8



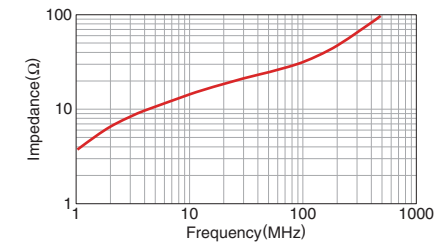
HF40SH10X0.6X3-G



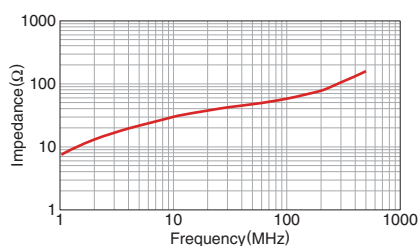
HF70SH10X0.6X5



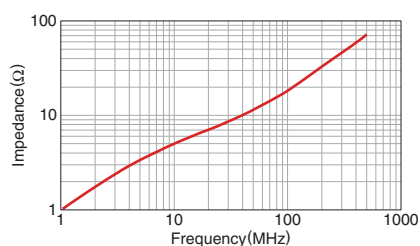
HF70SH11X0.7X8



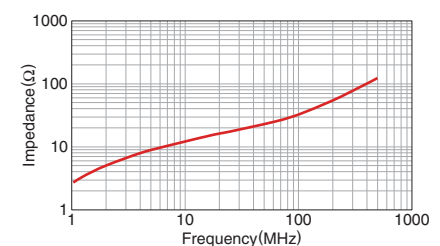
HF70SH12X0.9X12



HF70SH13X0.7X3A



HF70SH13X0.7X7



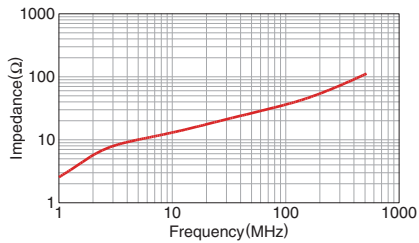
• All specifications are subject to change without notice.

Ni-Zn SH series

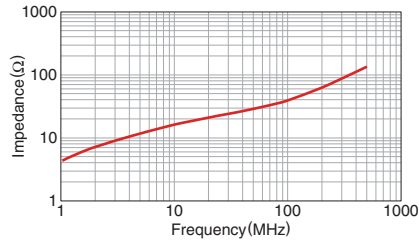
ELECTRICAL CHARACTERISTICS

IMPEDANCE VS. FREQUENCY CHARACTERISTICS

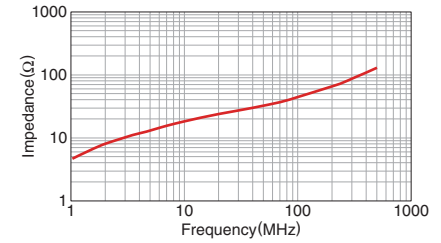
HF56SH13X0.7X8B



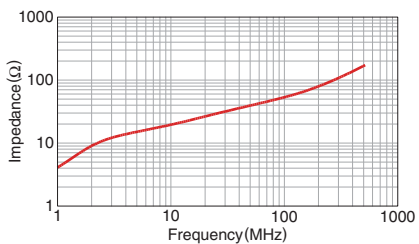
HF70SH13X0.7X10



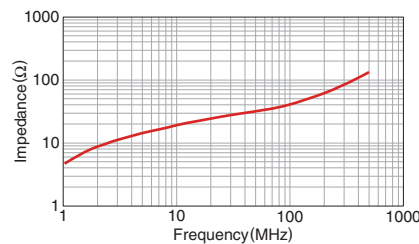
HF70SH13X0.7X12



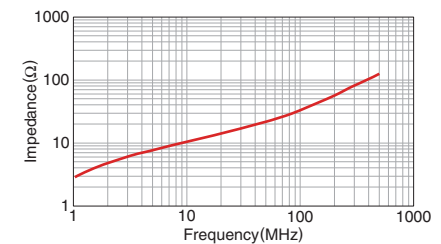
HF56SH13X0.7X12B



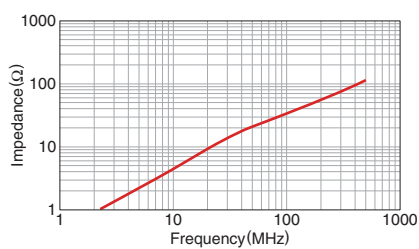
HF70SH13X1.3X12



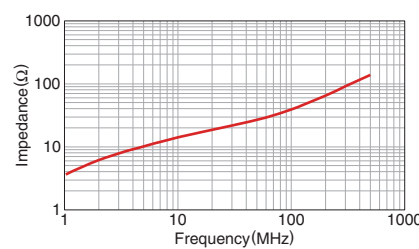
HF70SH15X0.7X8



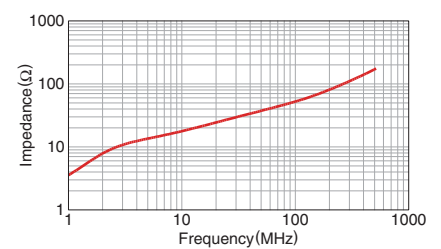
HF40SH15X0.7X8-G



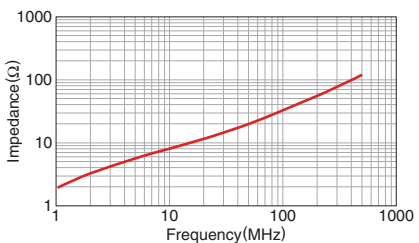
HF70SH15X0.7X10



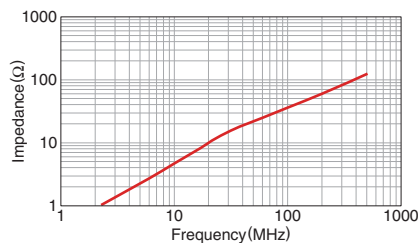
HF56SH15X0.7X12A



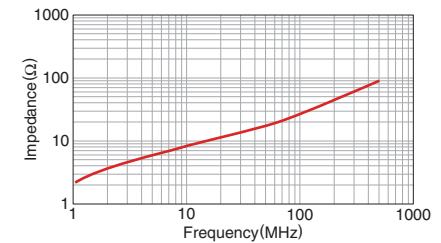
HF70SH17.5X0.6X8



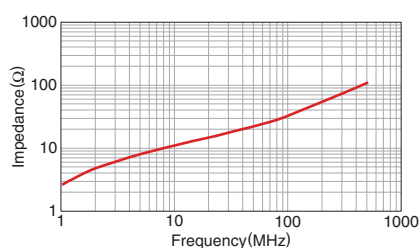
HF40SH18.5X0.7X8-G



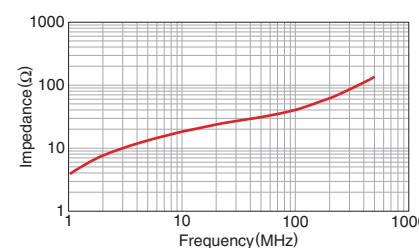
HF70SH18.5X0.7X6



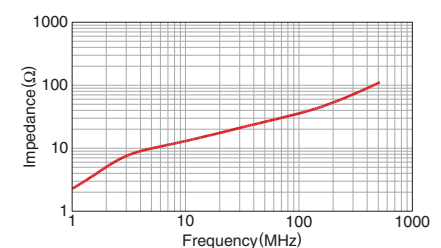
HF70SH18.5X0.7X8



HF70SH18.8X1.1X7



HF56SH18.8X1.1X7

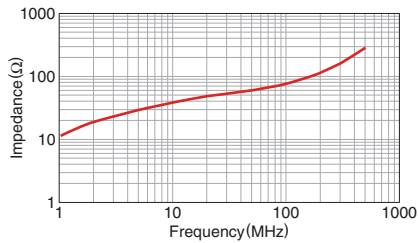


Ni-Zn SH series

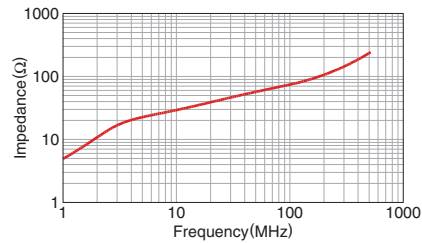
ELECTRICAL CHARACTERISTICS

IMPEDANCE VS. FREQUENCY CHARACTERISTICS

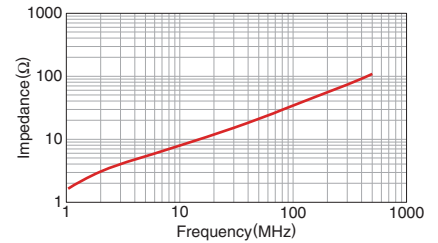
HF70SH18.8X1.1X15



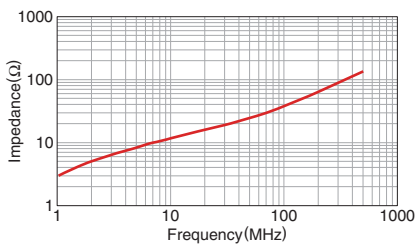
HF56SH18.8X1.1X15



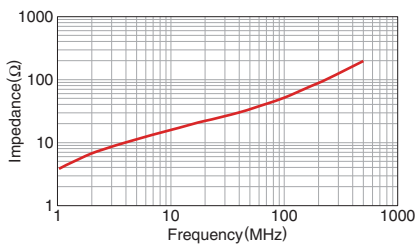
HF70SH20X0.5X8



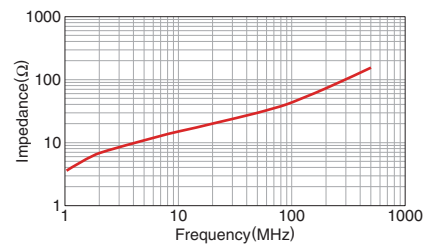
HF70SH20X0.7X8



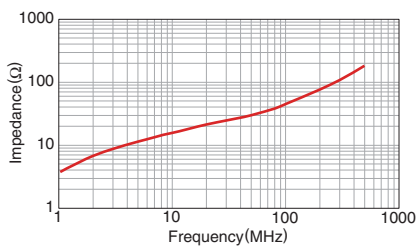
HF70SH20X0.7X12



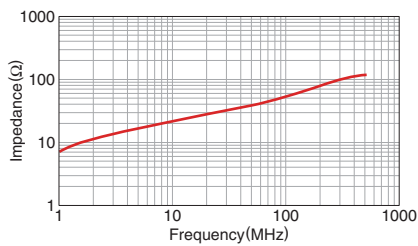
HF70SH20X0.9X12



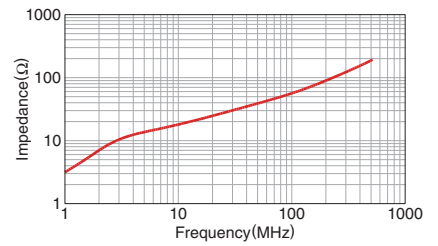
HF70SH21X0.8X7



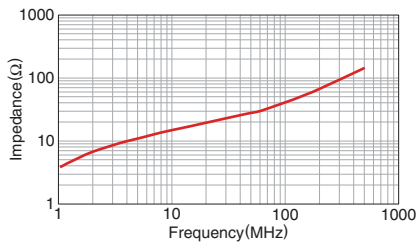
HF70SH21X0.8X12



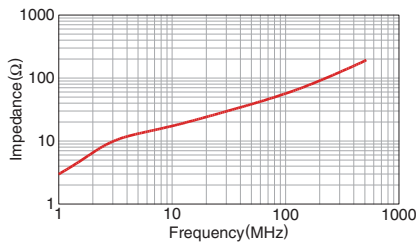
HF56SH21X0.8X12



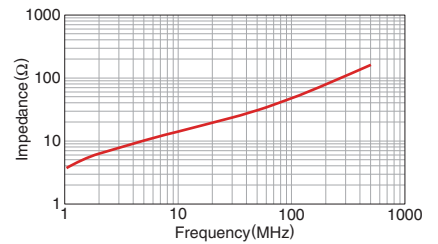
HF70SH22X0.8X7



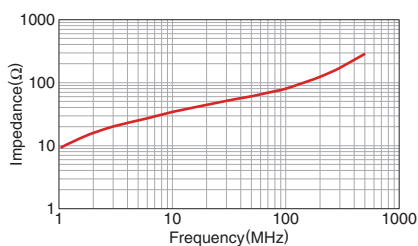
HF56SH22X0.8X12



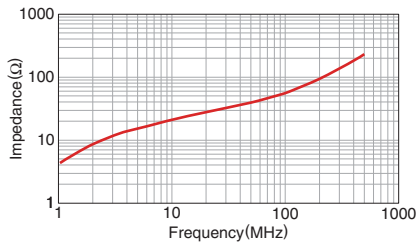
HF70SH25X0.7X10



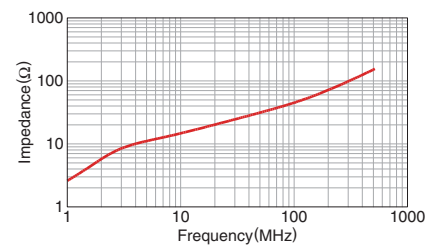
HF70SH25X1X15



HF70SH27X1.3X10



HF56SH27X1.3X10



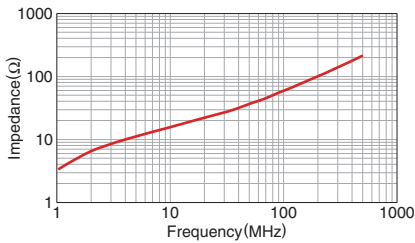
• All specifications are subject to change without notice.

Ni-Zn SH series

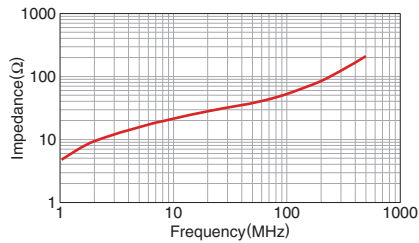
ELECTRICAL CHARACTERISTICS

IMPEDANCE VS. FREQUENCY CHARACTERISTICS

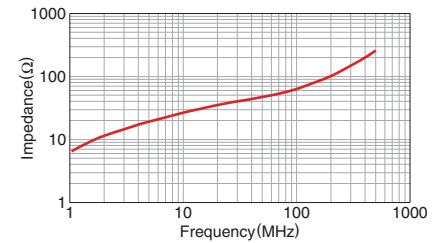
HF70SH28X0.7X12



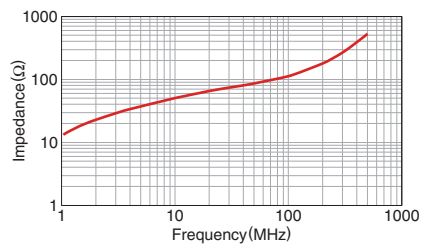
HF70SH28X2X10



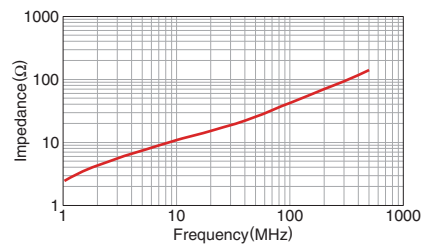
HF70SH32X2X12.5



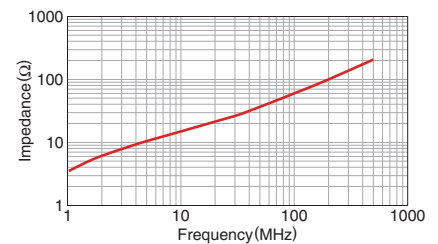
HF70SH32X2X25



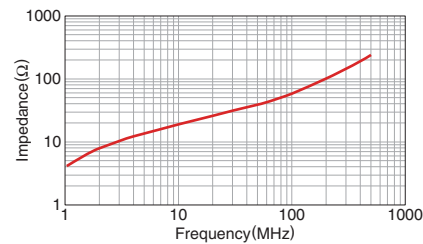
HF70SH35X0.8X8



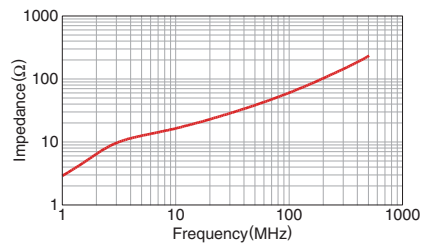
HF70SH35X0.8X12



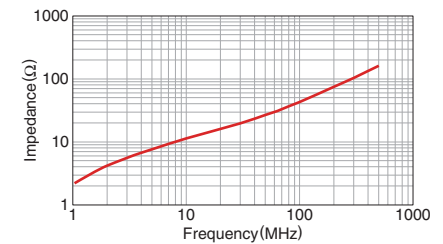
HF70SH35X1.3X12



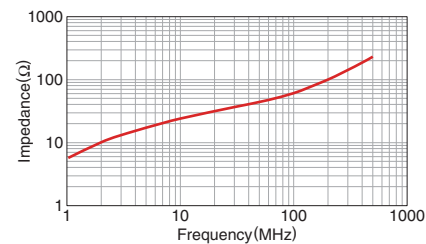
HF56SH35X1.3X12



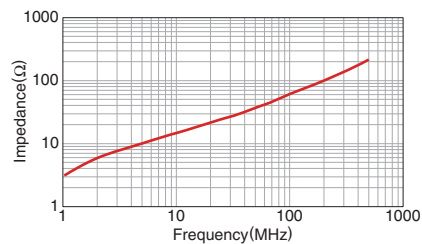
HF70SH40X1.3X8



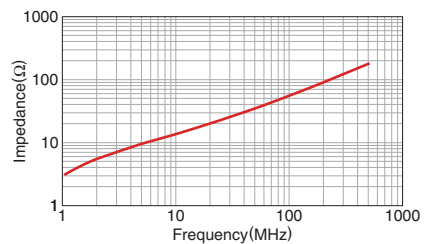
HF70SH40X2X12



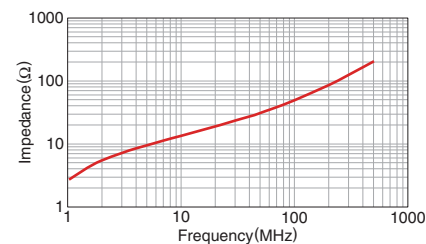
HF70SH41X0.8X12



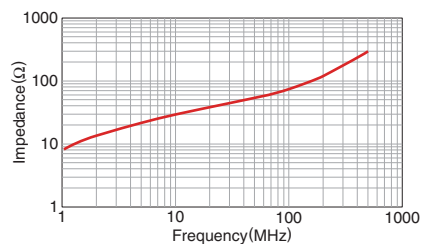
HF70SH42X0.9X12



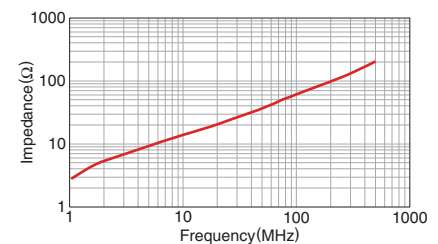
HF70SH46X1.9X10



HF70SH46X1.9X13



HF70SH52X1X12

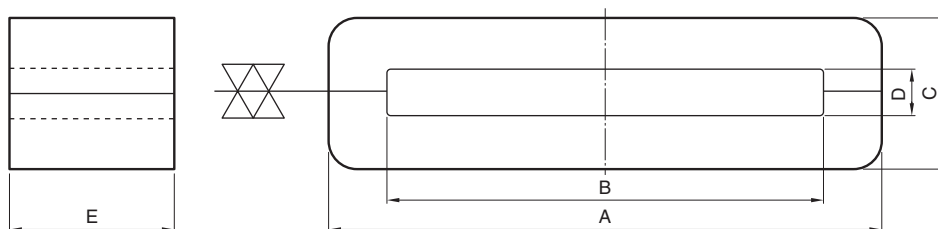


• All specifications are subject to change without notice.

Ni-Zn SU series



SHAPES AND DIMENSIONS



HF70	SU	18.8	×	1.1	×	7	□□□□
Material	Core shape	Inside width dimensions (B)		Inside height dimensions (D)		Length dimensions (E)	Internal code

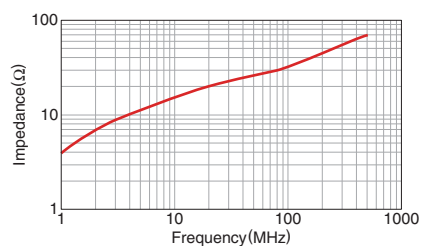
Part No.	Dimensions					Electrical characteristics	
	A (mm)	B	C	D	E	Impedance Z typ. (Ω) 23°C	
						10MHz	100MHz
HF70SU18.8X1.1X7S	23.8±0.4	18.8±0.4	6.3±0.4	1.1±0.4	7.0±0.3	15	32
HF70SU18.8X1.1X15S	23.8±0.4	18.8±0.4	6.3±0.4	1.1±0.4	15.0±0.5	35	74
HF70SU40X1.6X12S	45.2±0.5	40.0±0.5	6.7±0.4	1.6±0.4	12.0±0.3	16	49

Ni-Zn SU series

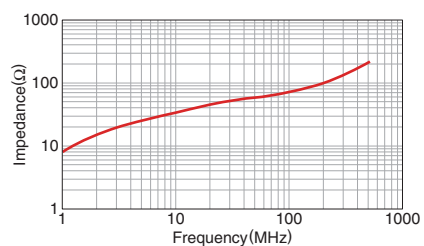
■ ELECTRICAL CHARACTERISTICS

□ IMPEDANCE VS. FREQUENCY CHARACTERISTICS

HF70SU18.8X1.1X7S



HF70SU18.8X1.1X15S



HF70SU40X1.6X12S

