

# Ferrite Cores for EMI Suppression For Flat Cable and Flexible Substrate

## SH Series(Square Type)

### 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.

### APPLICATIONS

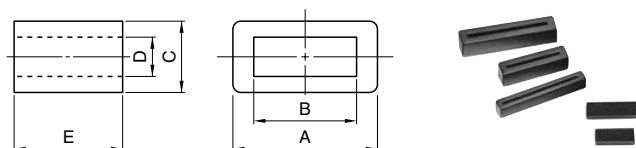
Imaging devices, audio equipment, automotive electronics, telecommunication devices, office automation equipment, and others.

- Absorption EMI and penetrating noise
- Prevent parasitic oscillation

### MATERIAL CHARACTERISTICS

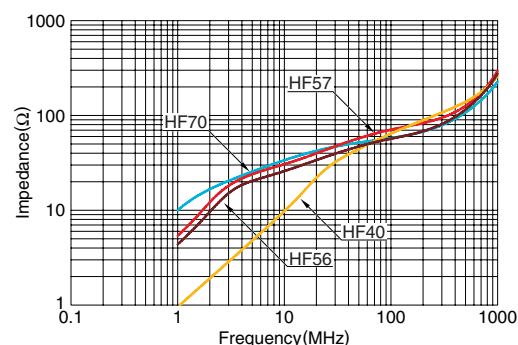
Material	Initial permeability $\mu_i$	Temperature factor of initial permeability $\alpha_{\mu ir} \times 10^{-6}/^{\circ}\text{C}$	Curie temperature $T_c$ ( $^{\circ}\text{C}$ )	Saturation magnetic flux density $B_s$ (mT)
HF70	1500	1 to 6	>100	280[H=1600A/m]
HF57	600	3 to 15	>150	370[H=4000A/m]
HF56	600	18 to 28	>130	290[H=4000A/m]
HF40	120	8 to 18	>250	410[H=4000A/m]

### SHAPES AND DIMENSIONS/CHARACTERISTICS



### TYPICAL MATERIAL CHARACTERISTICS

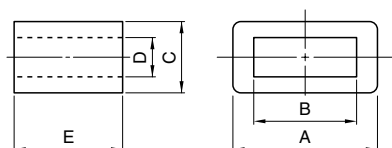
#### SHAPE: T20X10X12



Part No.	Dimensions(mm)					Impedance Z ( $\Omega$ ) [at 23 $^{\circ}\text{C}$ ]		Features
	A	B	C	D	E	10MHz typ.	100MHz typ.	
HF70SH6X0.6X5	8.5 $\pm$ 0.25	6.0 $\pm$ 0.2	2.0 $\pm$ 0.2	0.6 $\pm$ 0.2	5.0 $\pm$ 0.3	11	25	Thin type
HF70SH7X0.6X8	9.5 $\pm$ 0.3	7.0 $\pm$ 0.3	2.1 $\pm$ 0.25	0.6 $\pm$ 0.2	8.0 $\pm$ 0.3	14	30	Thin type
HF70SH8X0.6X5	10.5 $\pm$ 0.3	8.0 $\pm$ 0.3	2.1 $\pm$ 0.25	0.6 $\pm$ 0.2	5.0 $\pm$ 0.3	10	24	Thin type
HF56SH8X1X10	12.2 $\pm$ 0.3	8.0 $\pm$ 0.3	5.5 $\pm$ 0.3	1.0 $\pm$ 0.3	10.0 $\pm$ 0.3	30	65	
HF70SH8X1X18	12.2 $\pm$ 0.3	8.0 $\pm$ 0.3	5.5 $\pm$ 0.3	1.0 $\pm$ 0.3	18.0 $\pm$ 0.5	71	128	
HF70SH9X0.7X10	12.6 $\pm$ 0.3	9.0 $\pm$ 0.3	3.75 $\pm$ 0.3	0.7 $\pm$ 0.3	10.0 $\pm$ 0.3	27	54	
HF56SH9X0.7X10	12.6 $\pm$ 0.3	9.0 $\pm$ 0.3	3.75 $\pm$ 0.3	0.7 $\pm$ 0.3	10.0 $\pm$ 0.3	21	51	
HF70SH10X1X6	14.0 $\pm$ 0.3	10.0 $\pm$ 0.3	5.0 $\pm$ 0.3	1.0 $\pm$ 0.3	6.0 $\pm$ 0.3	20	37	
HF56SH10X1X8	14.0 $\pm$ 0.3	10.0 $\pm$ 0.3	5.0 $\pm$ 0.3	1.0 $\pm$ 0.3	8.0 $\pm$ 0.3	19	43	
HF40SH10X0.6X3-G	12.5 $\pm$ 0.3	10.0 $\pm$ 0.3	2.1 $\pm$ 0.25	0.6 $\pm$ 0.2	3.0 $\pm$ 0.2	3	21	Thin type
HF70SH10X0.6X5	12.5 $\pm$ 0.3	10.0 $\pm$ 0.3	2.1 $\pm$ 0.25	0.6 $\pm$ 0.2	5.0 $\pm$ 0.3	8	23	Thin type
HF70SH11X0.7X8	13.5 $\pm$ 0.3	11.0 $\pm$ 0.3	2.75 $\pm$ 0.3	0.7 $\pm$ 0.3	8.0 $\pm$ 0.3	15	32	Thin type
HF70SH12X0.9X12	16.0 $\pm$ 0.3	12.0 $\pm$ 0.3	4.65 $\pm$ 0.7	0.9 $\pm$ 0.1	12.0 $\pm$ 0.4	31	58	
HF70SH13X0.7X3A	17.0 $\pm$ 0.5	13.0 $\pm$ 0.4	2.3 $\pm$ 0.25	0.7 $\pm$ 0.2	3.0 $\pm$ 0.2	5	19	Thin type
HF70SH13X0.7X7	17.0 $\pm$ 0.5	13.0 $\pm$ 0.4	2.75 $\pm$ 0.3	0.7 $\pm$ 0.3	7.0 $\pm$ 0.4	12	36	Thin type
HF56SH13X0.7X8B	16.6 $\pm$ 0.4	13.0 $\pm$ 0.3	3.75 $\pm$ 0.3	0.7 $\pm$ 0.3	8.0 $\pm$ 0.3	13	36	
HF70SH13X0.7X10	17.0 $\pm$ 0.5	13.0 $\pm$ 0.4	2.75 $\pm$ 0.3	0.7 $\pm$ 0.3	10.0 $\pm$ 0.4	17	40	Thin type
HF70SH13X0.7X12	17.0 $\pm$ 0.5	13.0 $\pm$ 0.4	2.75 $\pm$ 0.3	0.7 $\pm$ 0.3	12.0 $\pm$ 0.4	19	45	Thin type
HF56SH13X0.7X12B	16.6 $\pm$ 0.4	13.0 $\pm$ 0.3	3.75 $\pm$ 0.3	0.7 $\pm$ 0.3	12.0 $\pm$ 0.5	19	53	
HF70SH13X1.3X12	17.0 $\pm$ 0.5	13.0 $\pm$ 0.4	3.5 $\pm$ 0.3	1.3 $\pm$ 0.3	12.0 $\pm$ 0.4	19	41	
HF70SH15X0.7X8	17.5 $\pm$ 0.4	15.0 $\pm$ 0.3	2.75 $\pm$ 0.3	0.7 $\pm$ 0.3	8.0 $\pm$ 0.3	12	36	Thin type
HF40SH15X0.7X8-G	17.5 $\pm$ 0.4	15.0 $\pm$ 0.3	2.75 $\pm$ 0.3	0.7 $\pm$ 0.3	8.0 $\pm$ 0.3	4.5	34	Thin type
HF70SH15X0.7X10	17.5 $\pm$ 0.4	15.0 $\pm$ 0.3	2.75 $\pm$ 0.3	0.7 $\pm$ 0.3	10.0 $\pm$ 0.3	14	40	Thin type
HF56SH15X0.7X12A	18.6 $\pm$ 0.4	15.0 $\pm$ 0.3	3.75 $\pm$ 0.3	0.7 $\pm$ 0.3	12.0 $\pm$ 0.5	17	52	
HF70SH17.5X0.6X8	20.5 $\pm$ 0.4	17.5 $\pm$ 0.4	2.0 $\pm$ 0.2	0.6 $\pm$ 0.2	8.0 $\pm$ 0.4	8	33	Thin type

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## SHAPES AND DIMENSIONS/CHARACTERISTICS

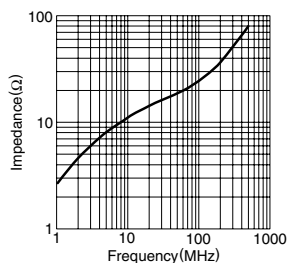


Part No.	Dimensions(mm)					Impedance Z ( $\Omega$ )[at 23°C]		Features
	A	B	C	D	E	10MHz typ.	100MHz typ.	
HF40SH18.5X0.7X8-G	21.5±0.4	18.5±0.4	3.0±0.3	0.7±0.3	8.0±0.3	5	36	Thin type
HF70SH18.5X0.7X6	21.5±0.4	18.5±0.4	3.0±0.3	0.7±0.3	6.0±0.3	9	27	Thin type
HF70SH18.5X0.7X8	21.5±0.4	18.5±0.4	3.0±0.3	0.7±0.3	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
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	

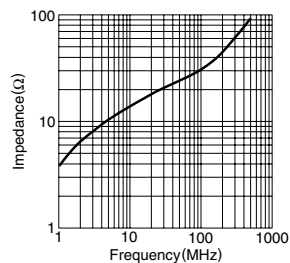
## TYPICAL ELECTRICAL CHARACTERISTICS

### IMPEDANCE vs. FREQUENCY CHARACTERISTICS

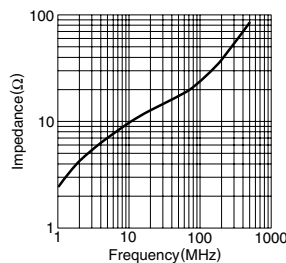
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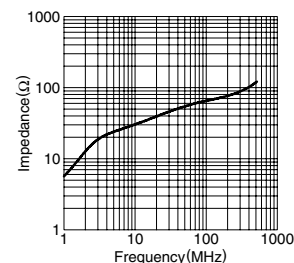
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HF70SH8X0.6X5



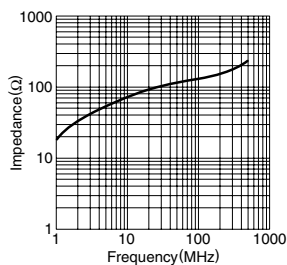
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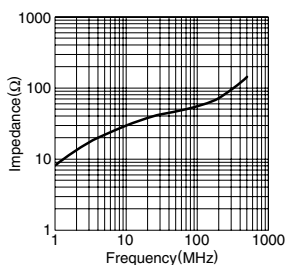
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### TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS

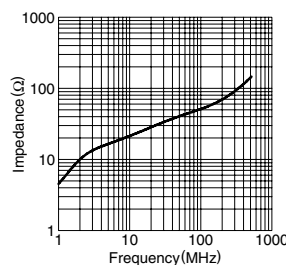
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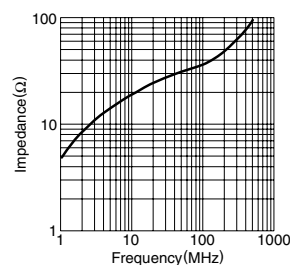
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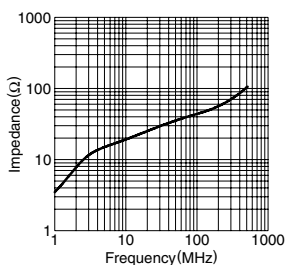
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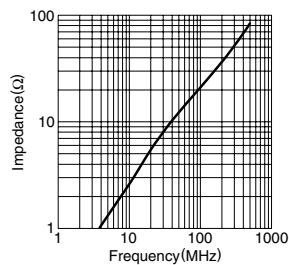
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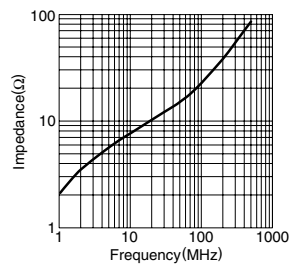
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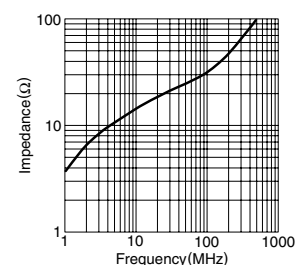
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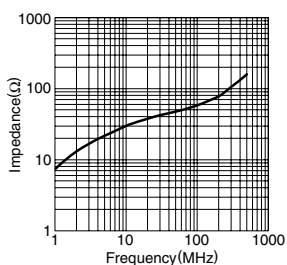
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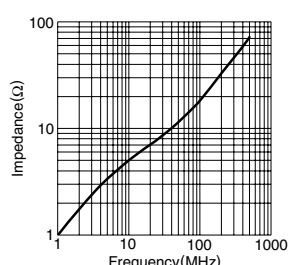
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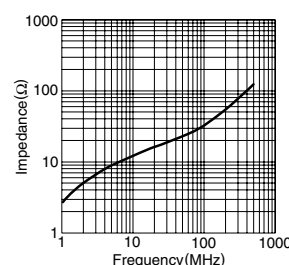
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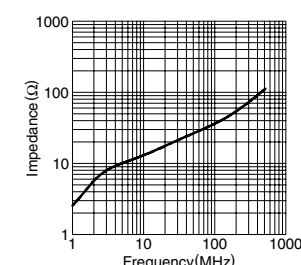
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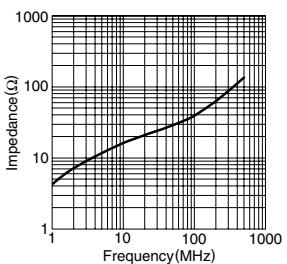
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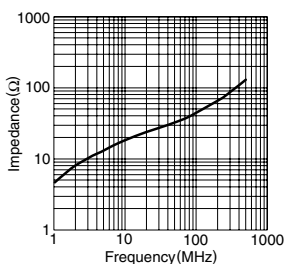
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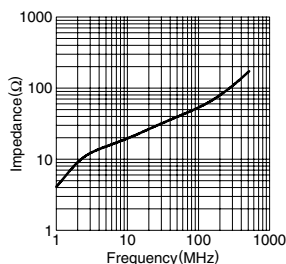
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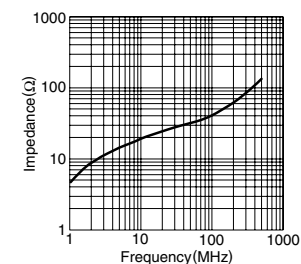
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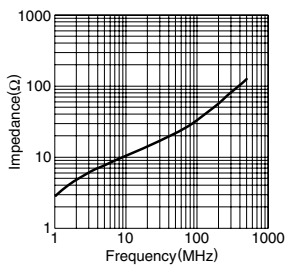
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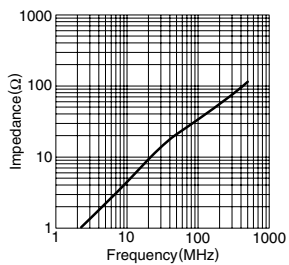
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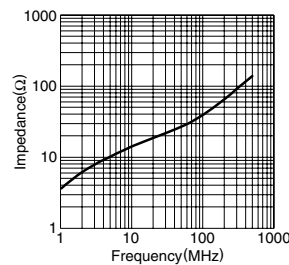
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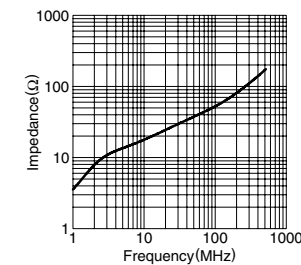
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**HF70SH15X0.7X10**



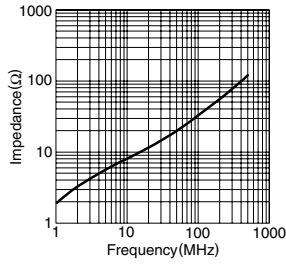
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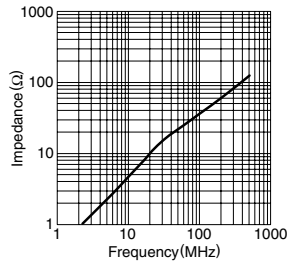
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**TYPICAL ELECTRICAL CHARACTERISTICS**  
**IMPEDANCE vs. FREQUENCY CHARACTERISTICS**

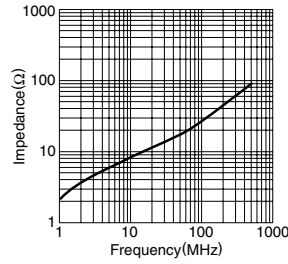
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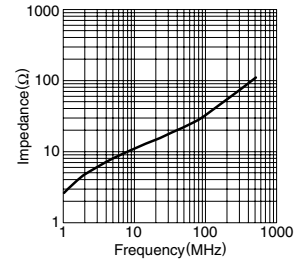
**HF40SH18.5X0.7X8-G**



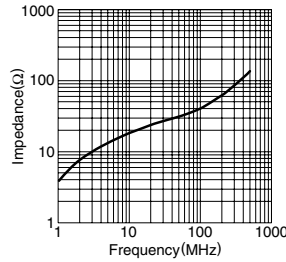
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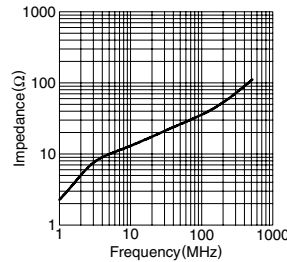
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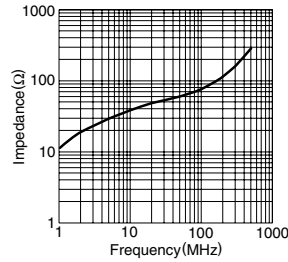
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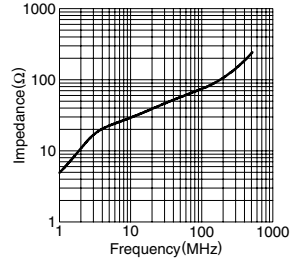
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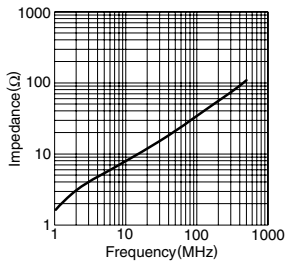
**HF70SH18.8X1.1X15**



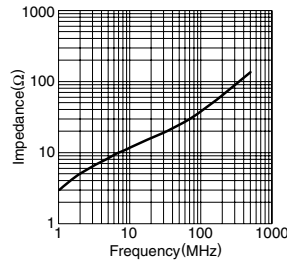
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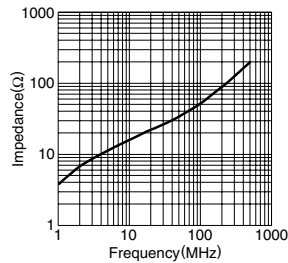
**HF70SH20X0.5X8**



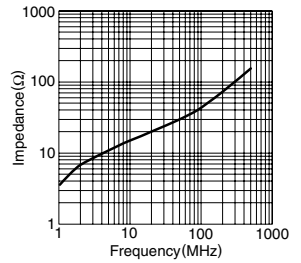
**HF70SH20X0.7X8**



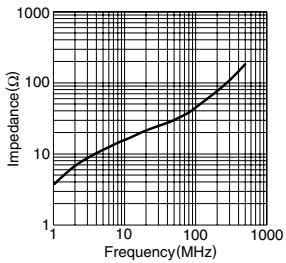
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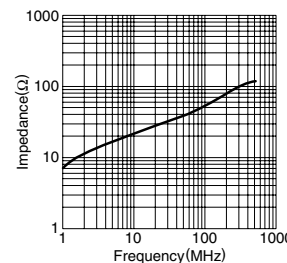
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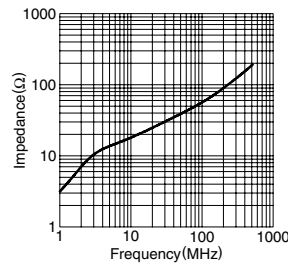
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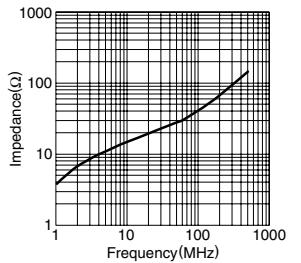
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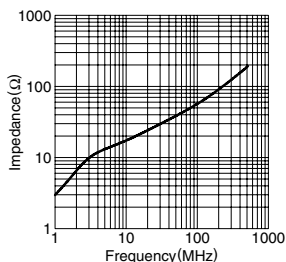
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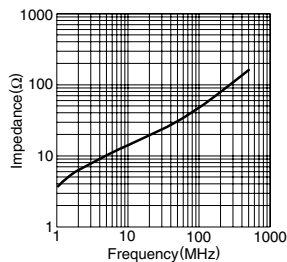
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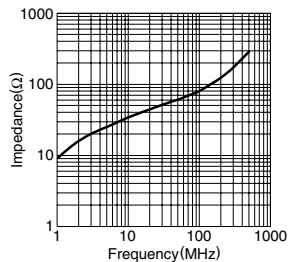
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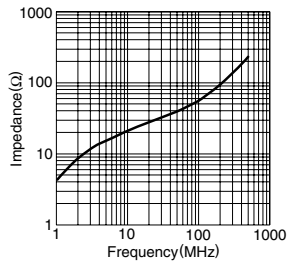
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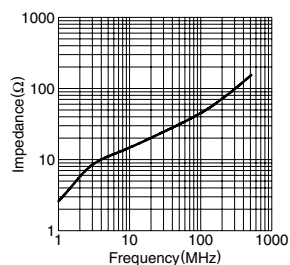
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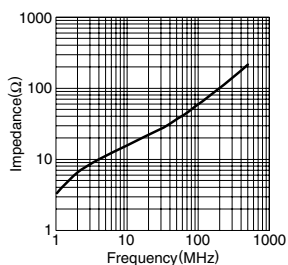
• All specifications are subject to change without notice.

### TYPICAL ELECTRICAL CHARACTERISTICS IMPEDANCE vs. FREQUENCY CHARACTERISTICS

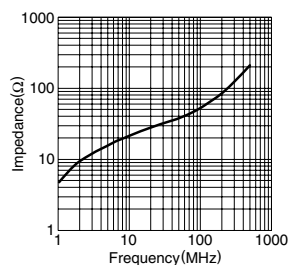
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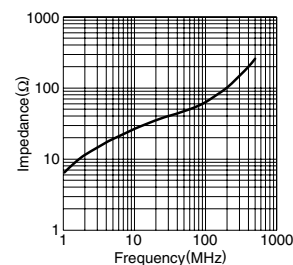
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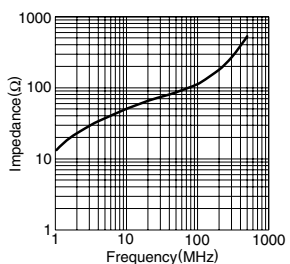
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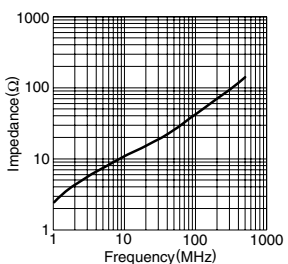
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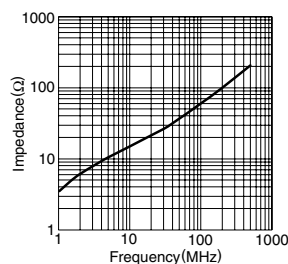
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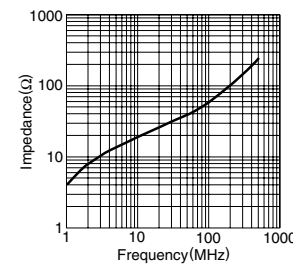
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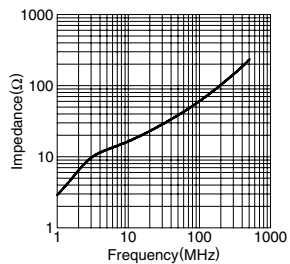
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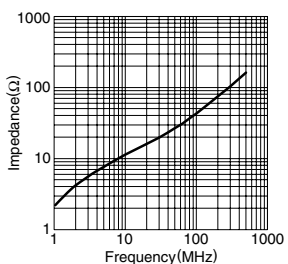
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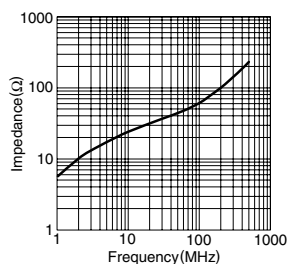
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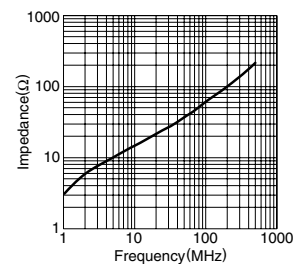
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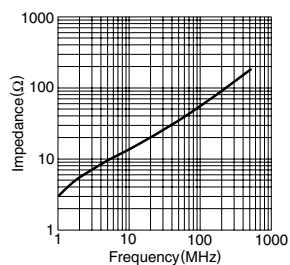
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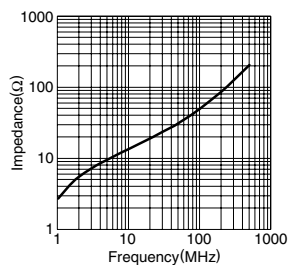
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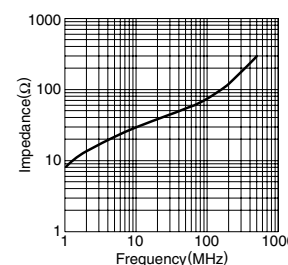
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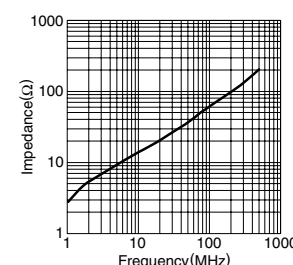
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**HF70SH46X1.9X13**



**HF70SH52X1X12**



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