Ferrites for EMI Suppression

For Flat Cable/Flexible Substrate

SH Series(Square Type)

Issue date: May 2011

- All specifications are subject to change without notice.
- Conformity to RoHS Directive: This means that, in conformity with EU Directive 2002/95/EC, lead, cadmium, mercury, hexavalent chromium, and specific bromine-based flame retardants, PBB and PBDE, have not been used, except for exempted applications.

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

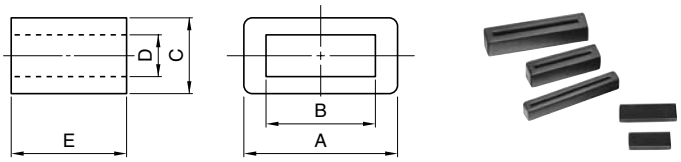
Imaging devices, audio equipment, automotive electronics, telecommunication devices, office automation equipment, and others.

- Absorption EMI and penetrating noise
- Prevent parasitic oscillation

MATERIAL CHARACTERISTICS

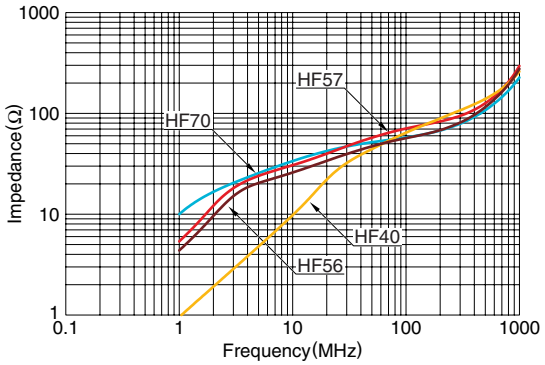
Material	Initial permeability μi	Temperature factor of initial permeability αμir ×10⁻⁶/°C	Curie temperature Tc (°C)	Saturation magnetic flux density Bs (mT)
HF70	1500	1 to 6	>100	280[H=1600A/m]
HF57	600	3 to 15	>150	370[H=4000A/m]
HF56	600	18 to 28	>130	290[H=4000A/m]
HF40	120	8 to 18	>250	410[H=4000A/m]

SHAPES AND DIMENSIONS/CHARACTERISTICS



TYPICAL MATERIAL CHARACTERISTICS

SHAPE: T20X10X12



Part No.	Dimensions(mm)					Impedance Z (Ω)[at 23°C]		Features
	A	B	C	D	E	10MHz typ.	100MHz typ.	
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

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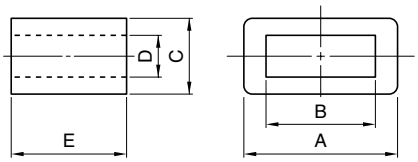
SHAPES AND DIMENSIONS/CHARACTERISTICS



Part No.	Dimensions(mm)					Impedance Z (Ω)[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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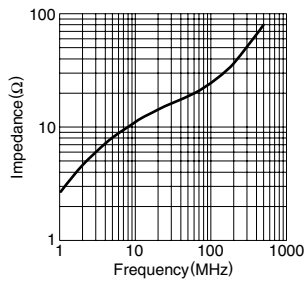

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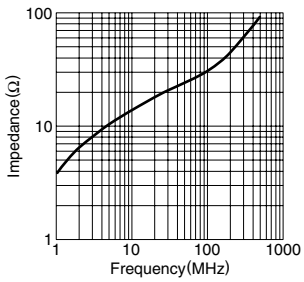

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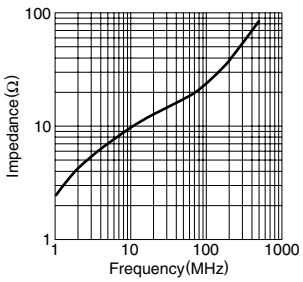

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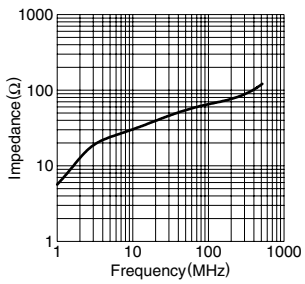

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

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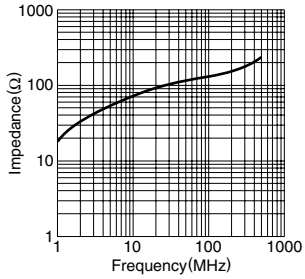

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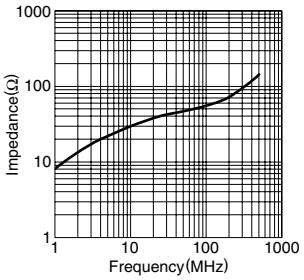

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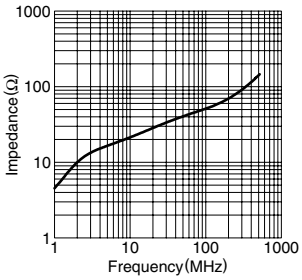

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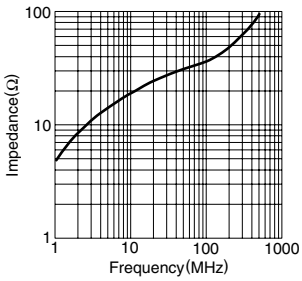

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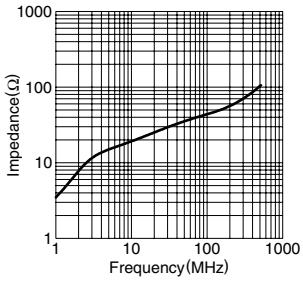

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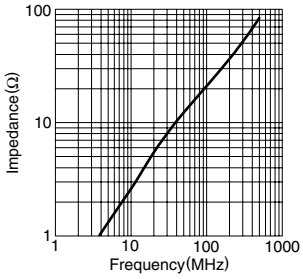

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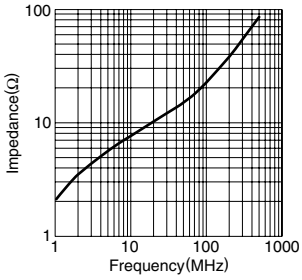

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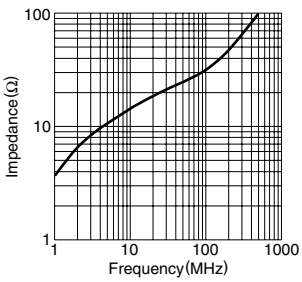

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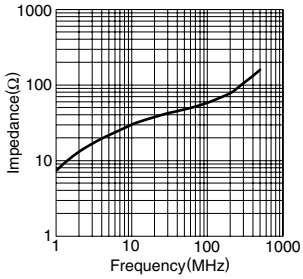

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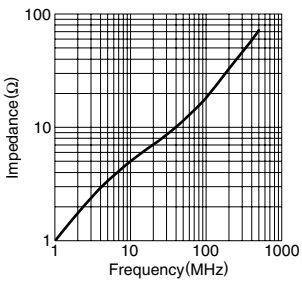

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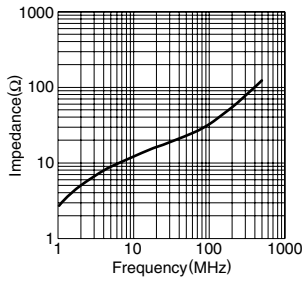

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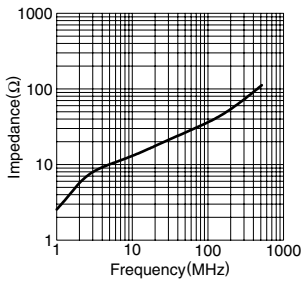

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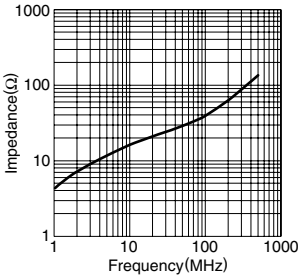

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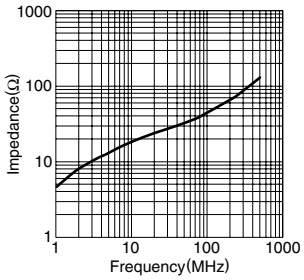

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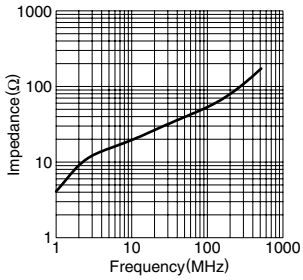

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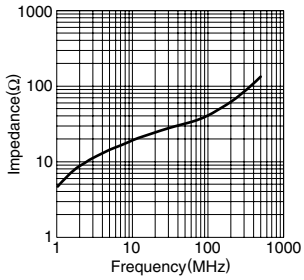

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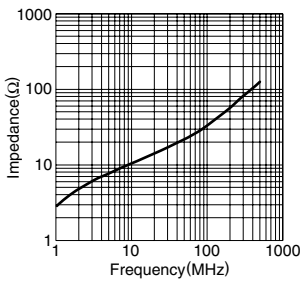

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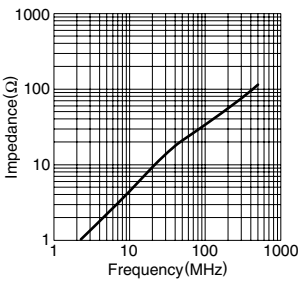

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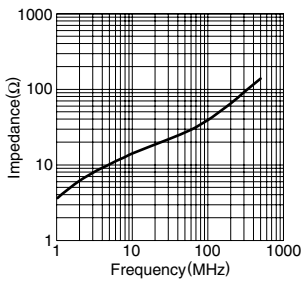

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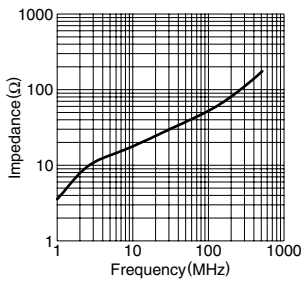

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

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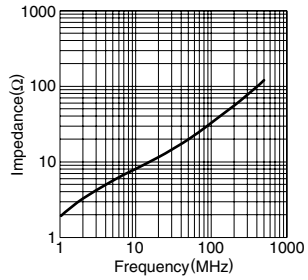

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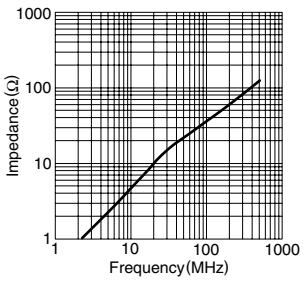

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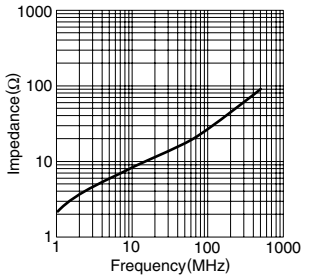

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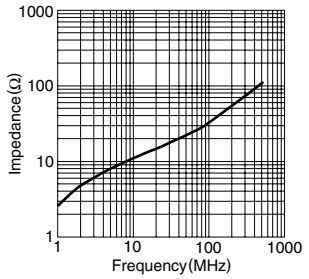

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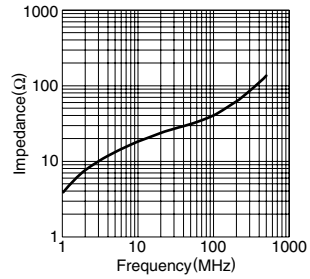

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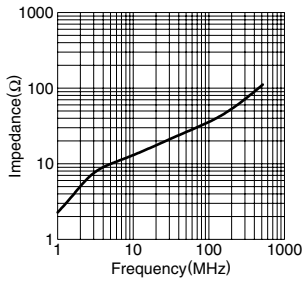

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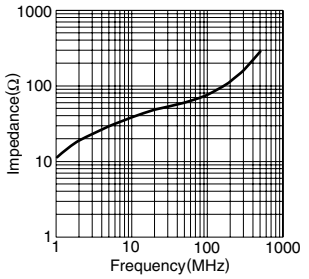

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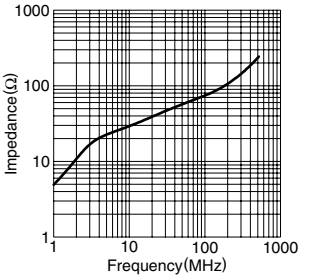

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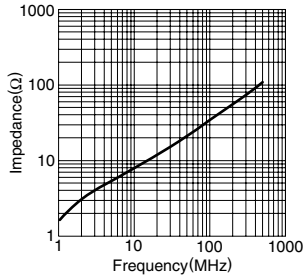

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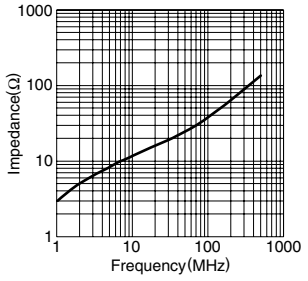

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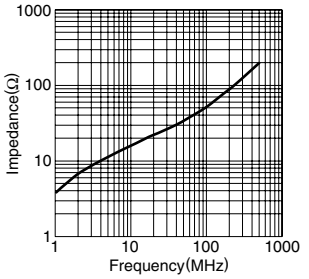

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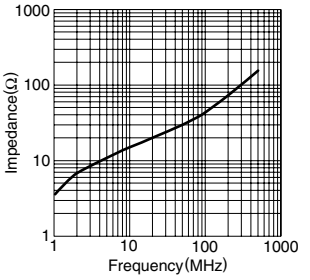

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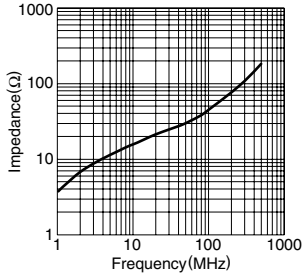

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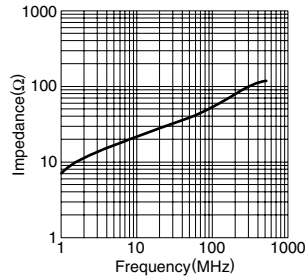

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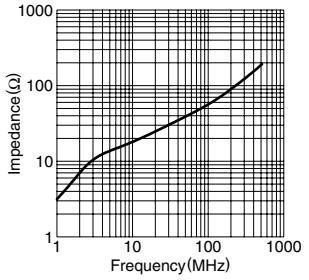

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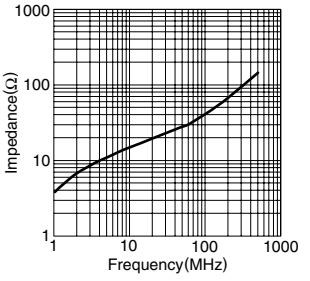

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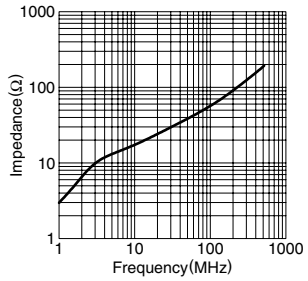

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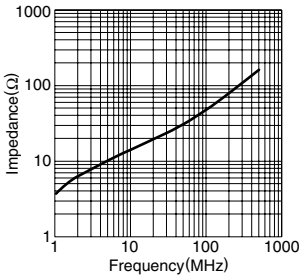

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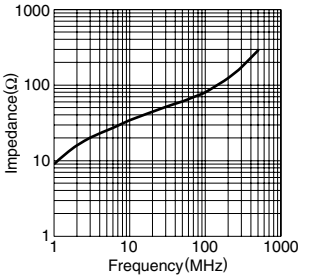

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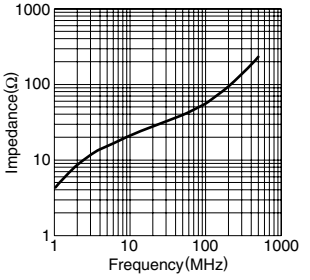

TYPICAL ELECTRICAL CHARACTERISTICS

IMPEDANCE vs. FREQUENCY CHARACTERISTICS

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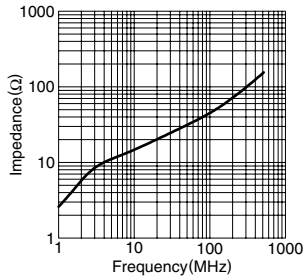

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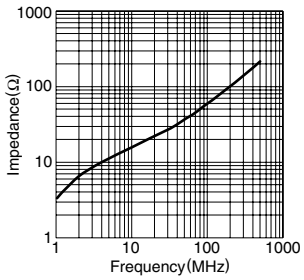

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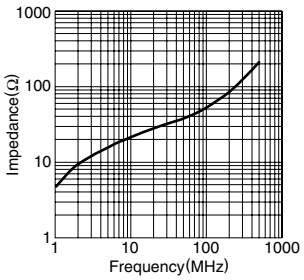

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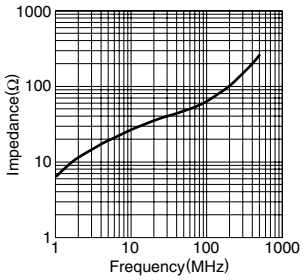

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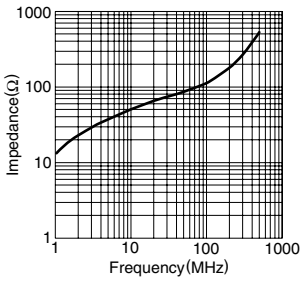

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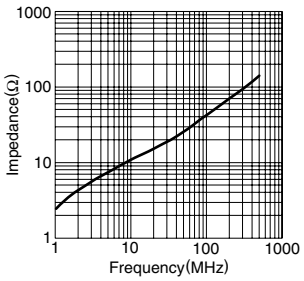

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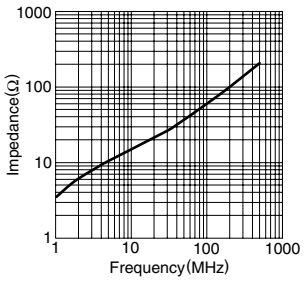

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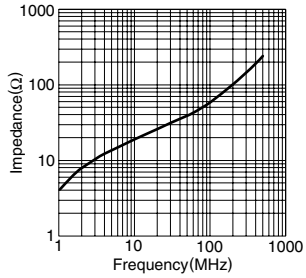

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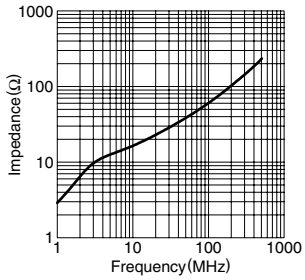

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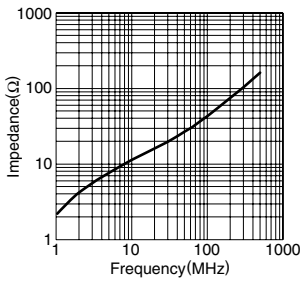

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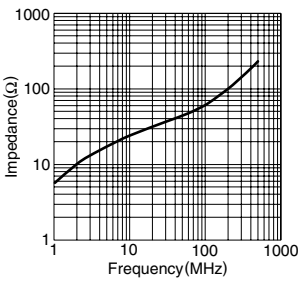

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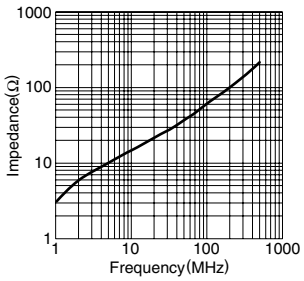

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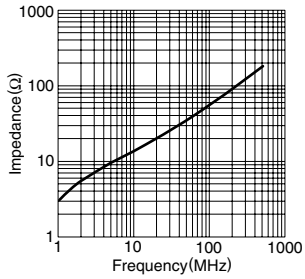

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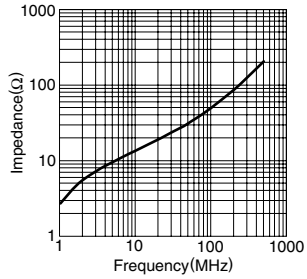

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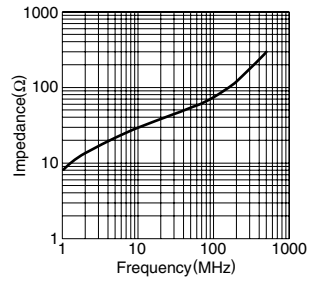
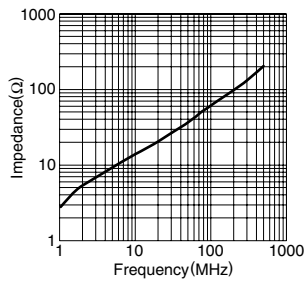
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