Materials Magic
Hitachi Metals

FINEMET® EMC COMPONENTS

FM-A SERIES
SINGLE-PHASE COMMON MODE CHOKES

FM-A series single-phase common mode chokes (CMC) are made from nanocrystalline soft magnetic materials, FINEMET®. Its advanced characteristics allow high performance in electric noise suppression and size reduction. As a result of new manufacturing process and new structure based on experience of FM coils, we made significant cost reduction.

FEATURE

1 Higher attenuation characteristics than that of CMC with Mn-Zn ferrite over a wide frequency range.

2 Stable electromagnetic characteristics over a wide frequency range because of small impedance temperature change (±20%) at -40 to 130 degree C.

3 Standard models are available and have been designed for major applications (Table 1).

Table 1. Model No. and Major Application

Model No.	Applied EMC Policy	Major Application
FM-A101V162 FM-A203V901 FM-A151V601 FM-A254V132 FM-A153V172 FM-A304V801	Electrical Appliance and Material Control Law CISPR Pub.11 CLASS A	Air conditioner General-purpose inverters Inverters
FM-A081V302 FM-A205V412 FM-A103V402 FM-A255V242 FM-A154V442 FM-A305V212 FM-A204V262	CISPR Pub.11 CLASS A CISPR Pub.11 CLASS A	Packaged air conditioner General-purpose inverters Inverters Visual appliances Information processing system Networking Measuring Instruments
FM-A051V782 FM-A104V103 FM-A083V692	CISPR Pub.22 CLASS B	Packaged air conditioner Optical apparatus Visual appliances Information processing system

4 The coils with base plate allow high vibration-resistance and easy installation.

STANDARD SPECIFICATIONS

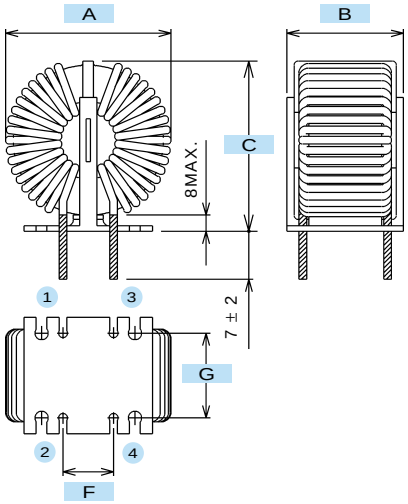

Fig. 1 Shape

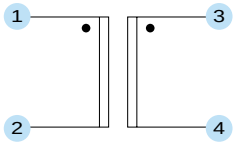

Fig. 2 Circuit diagram

Table 2. Standard specifications

Items	Specifications
Rated voltage	AC250V or DC250V
Insulation withstand voltage	AC2kV for 1min.
Insulation resistance	Over 100MΩ DC500V for 1 min.
Insulation grade	B class (130 degree C)
Temperature rise ΔT	Less than 45 degree C
Operating temperature range	-40 degree C to +130 degree C (including J ΔT)

- The above specifications are in accordance with the Electrical Appliance and Material Control Law, UL, CSA and IEC standard. No Ozone Layer's Depletion Chemical (ODC) is used either in those products or in the manufacturing process.

Table 3. Model No. and specifications

Model No.	Rated current (A)	|Z| (kΩ) 100kHz Min.	L (mH) 100kHz Ref.	DC resistance (mΩ) Max.	Wire diameter (mm)	Finished dimensions (mm)					Weight (g) Typ.	Impedance
						A Max.	B Max.	C Max.	F Ref.	G Ref.		
FM-A051V782	5	7.8	9.2	40	1.1	32	26	36	10	22	43	Ref. Fig.3
FM-A081V302	8	3.0	3.6	18	1.3	32	26	36	10	22	40	
FM-A101V162	10	1.6	1.9	10	1.5	32	26	36	18	16	43	
FM-A151V601	15	0.6	0.8	5	1.7	32	26	36	18	16	42	
FM-A083V692	8	6.9	8.1	25	1.4	40	30.5	44	10	26	61	Ref. Fig.4
FM-A103V402	10	4.0	4.8	15	1.6	40	30.5	44	10	26	60	
FM-A153V172	15	1.7	2.0	7	1.9	40	30.5	44	18	16	62	
FM-A203V901	20	0.9	1.1	4	2.2	40	30.5	44	18	16	62	
FM-A104V103	10	10.0	11.8	19	1.6	46	32	50	10	28	99	Ref. Fig.5
FM-A154V442	15	4.4	5.2	9	1.9	46	32	50	10	28	98	
FM-A204V262	20	2.6	3.2	6	2.2	46	32	50	20	28	102	
FM-A254V132	25	1.3	1.6	4	2.4	46	32	50	20	28	95	
FM-A304V801	30	0.8	1.0	3	2.7	46	32	50	20	28	98	
FM-A205V412	20	4.1	4.8	7	2.4	57	43	60	18	34	169	Ref. Fig.6
FM-A255V242	25	2.4	2.9	5	2.6	57	43	60	18	34	163	
FM-A305V212	30	2.1	2.5	3	3.0	57	43	60	18	34	188	

- Custom design is available upon customer's request

IMPEDANCE CHARACTERISTICS

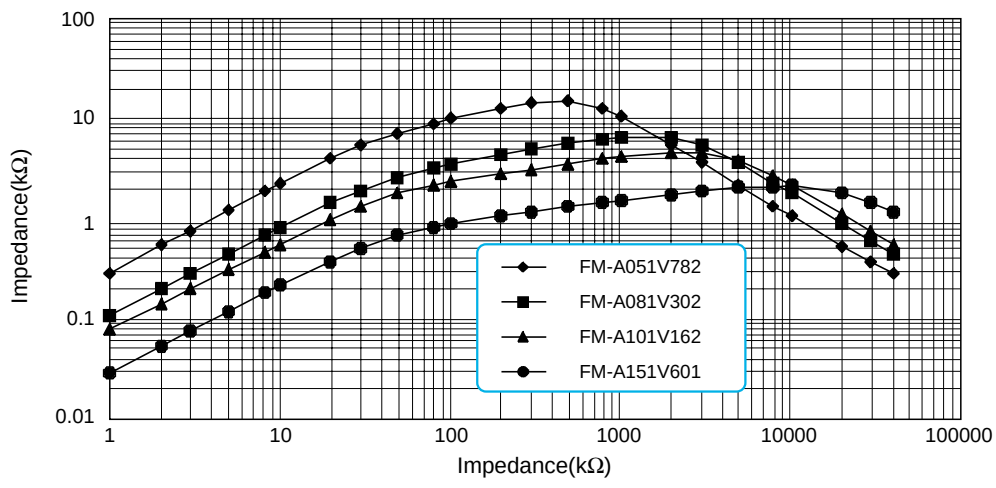

Fig.3 Impedance vs. frequency

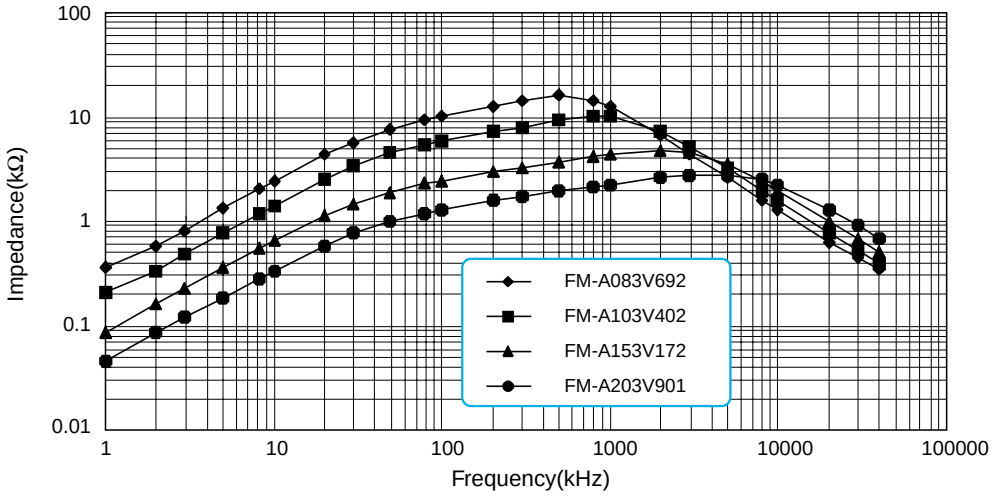

Fig.4 Impedance vs. frequency

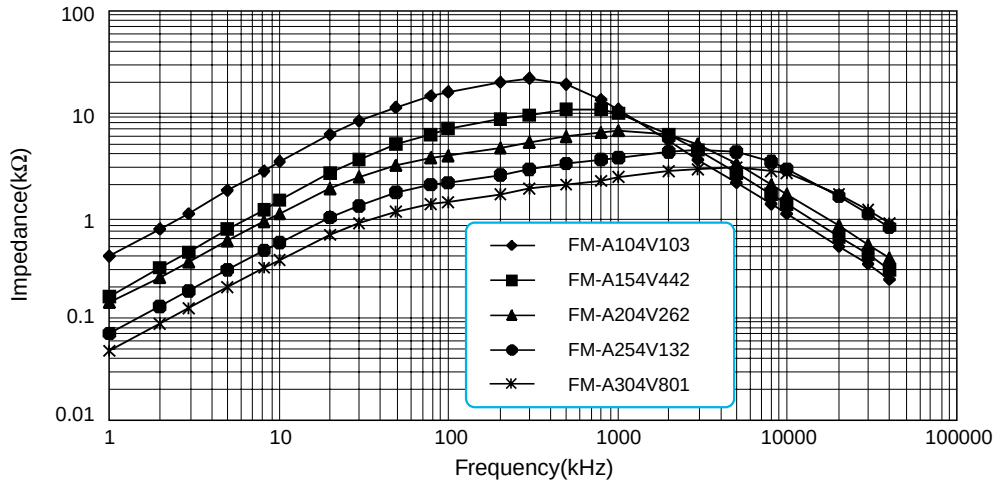

Fig.5 Impedance vs. frequency

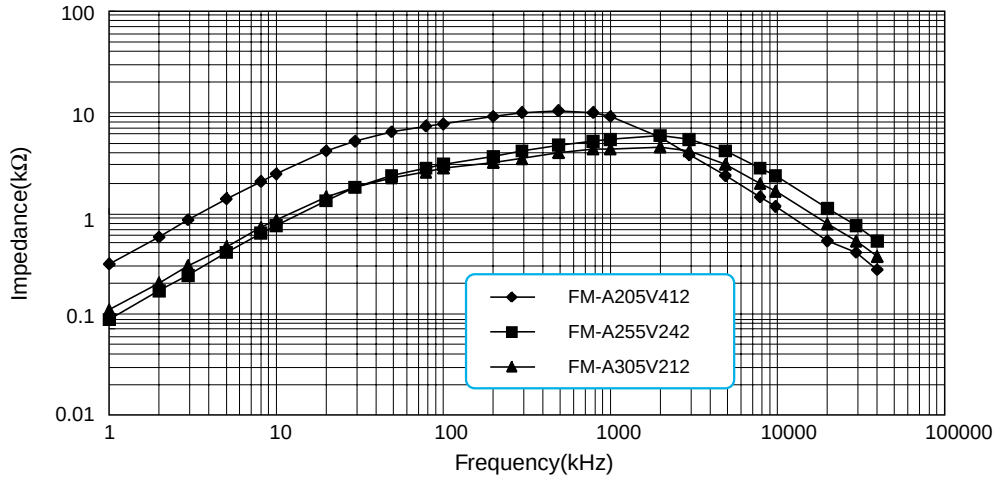

Fig.6 Impedance vs. frequency

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- In order to ensure proper and safe use, please check the details in the specifications. Technical information in this catalog is subject to change without notice.
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