Metglas® FINEMET®

HITACHI

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FINEMET®
EMC Components
[Catalog]

FT-3KL F series

Cores for high saturation current common mode chokes

FT-3KL F series cores satisfy both high permeability and high saturation current, which realizes significant noise reduction under large current leakage.

Materials Mag!c
Hitachi Metals

1. Features

1. Excellent performance in noise reduction for conduction noise and radio noise

FT-3KL F series cores have high impedance over wide frequency range, result in high noise reduction effects over a wide frequency range for conduction noise and radio noise. In particular, those cores show high performance in noise reduction at 1MHz — 100MHz due to higher impedance than Ni-Zn ferrite(Fig.2).

2. Low magnetic saturation at high common mode current

FT-3KL F series cores have excellent superposed DC characteristics with low magnetic saturation at high magnetic field(current)(Fig. 3). Those cores can reduce current serge generated by motor, etc.

3. Excellent for suppressing volt surge with high volt-time

Because FT-3KL material has high maximum induction swing ($\triangle B_m$), FT-3KL F series cores can suppress volt surge with high volt-time(Fig. 4,5).

2. Standard Specification

Table 1 Toroidal type

Product code	P/N	Dimensions (mm)			A_e (mm^2) TYP.	L_m (mm) TYP.	Weight (g) TYP.	AL value ($\mu H/N^2$)	
		A	B	C				10kHz	100kHz
F1AH0680	FT-3KL F3320E	35.8±0.5	17.5±0.7	17.3±0.5	73.1	83.3	49	17.8～33.0	18.8±30%
F1AH0681	FT-3KL F3724E	40.0±0.5	17.6±0.7	21.1±0.5	73.1	95.8	59	15.4～28.7	16.3±30%
F1AH0682	FT-3KL F4535G	49.0±0.5	25.0±0.7	31.0±0.5	75.0	125.7	89	12.1～22.4	12.8±30%
F1AH0683	FT-3KL F6045G	64.0±0.7	25.0±1.0	41.0±0.7	107.3	166.0	162	13.1～24.3	13.8±30%
F1AH0684	FT-3KL F7555G	79.0±0.7	25.0±0.7	51.0±0.7	146.3	205.0	267	14.4～26.8	15.2±30%
F1AH0685	FT-3KL F10080G	104.0±0.7	25.0±0.7	76.0±0.7	138.8	285.1	336	9.8～18.3	10.4±30%
F1AH0686	FT-3KL F140100	144.0±1.0	35.0±1.0	96.0±0.7	427.5	380.1	1335	22.8～42.3	24.0±30%

UL94V-0 certified resin (130℃ heat resistance) is used for he core cases
No Ozone Depleting Chemicals (ODC) are used in these products and in their manufacturing process
A_e: effective sectional area L_m: mean magnetic path length

Table 2 Base plate type and base combined type

Product code	P/N	Dimensions (mm)								
		A MAX.	B MAX.	C MAX.	D ±0.5	E ±0.3	F ±0.5	G ±0.5	H ±0.5	K MIN.
F1AH0687	FT-3KL F6045GB	95.0	26.0	78.0	80.0	12.5	72.0	50.0	7.0	39.5
F1AH0688	FT-3KL F7555GB	121.0	30.0	100.0	100.0	—	—	—	—	50.0
F1AH0690	FT-3KL F11080GB	181.0	26.0	131.0	150.0	12.5	124.0	100.0	20.0	74.0
F1AH0691	FT-3KL F140100PB	181.0	42.0	162.0	160.0	—	—	—	—	95.0

		A_e (mm^2) TYP.	L_m (mm) TYP.	Weight (g) TYP.	Applied screw		AL value ($\mu H/N^2$)		Shape
					I	J	10kHz	100kHz	
F1AH0687	FT-3KL F6045GB	107.3	166.0	193	M4	M5	13.1～24.3	13.8±30%	②
F1AH0688	FT-3KL F7555GB	146.3	205.0	377	—	M6	14.4～26.8	15.2±30%	③
F1AH0690	FT-3KL F11080GB	213.8	300.8	613	M5	M6	14.4～26.7	15.2±30%	②
F1AH0691	FT-3KL F140100PB	427.5	380.1	1595	—	M6	22.8～42.3	24.0±30%	③

UL94V-0 certified resin (130℃ heat resistance) is used for he core cases
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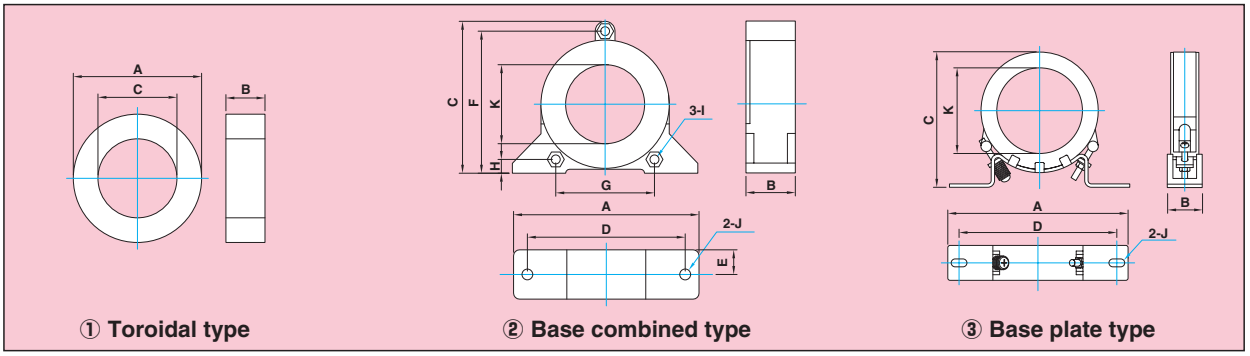
A_e: effective sectional area L_m: mean magnetic path length



① Toroidal type ② Base combined type ③ Base plate type

Fig.1 Shape

3. Major Applications

General inverters, inverter applications used in train vehicles, elevator, liquid pump, air conditioner, robot, machine tool, welding equipment, etc.

4. Frequency Dependence of Impedance

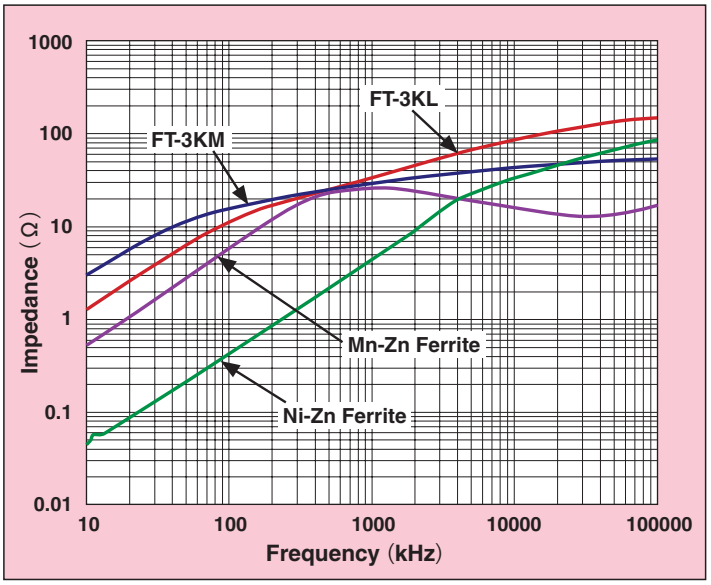


Fig.2 Frequency dependence of impedance

5. Superposed DC Characteristics of Impedance Relative Permeability

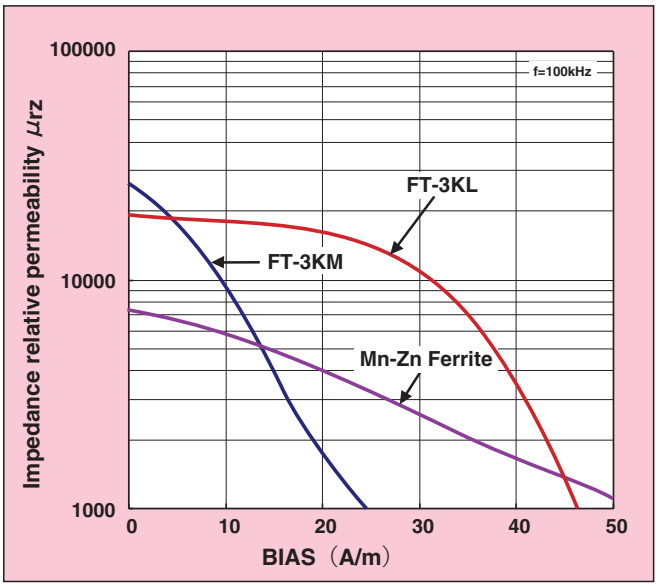


Fig.3 Superposed DC characteristics of impedance relative permeability μrz

6. DC BH Curve

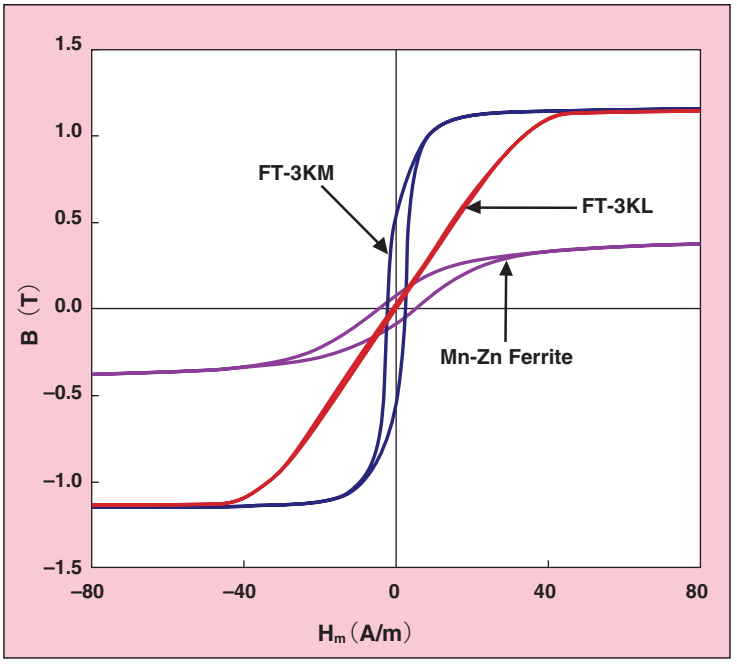


Fig. 4 DC BH Curve

Bs-Br describes maximum induction swing (ΔBm)

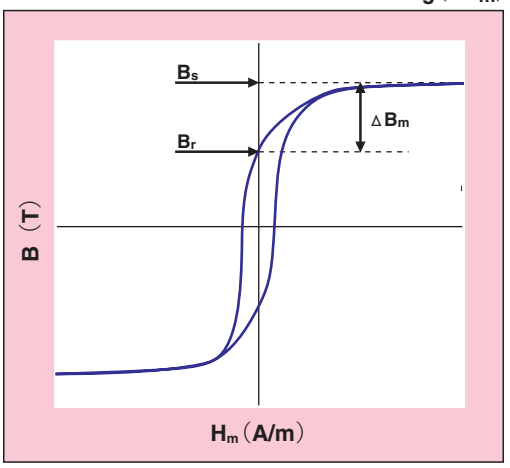


Fig.5 Description of DC BH Curve

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