HF series

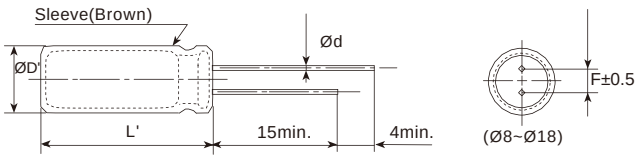
- Long life, high ripple current; For power supply applications
- Endurance: +105°C 5,000~10,000 hours
- **RoHS Compliant**



SPECIFICATIONS

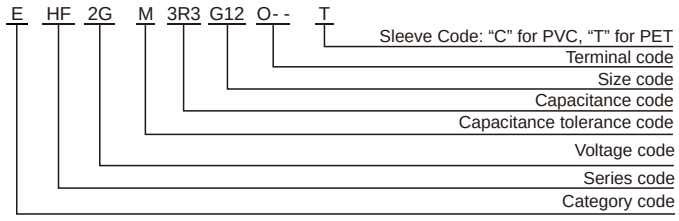
Items	Characteristics
Category Temperature Range	-40~+105°C(160~400Vdc) -25~+105°C(450Vdc)
Rated Voltage Range	160~450 Vdc
Capacitance Tolerance	±20%(M) (at 20°C,120Hz)
Leakage Current	CV≤1000: I≤0.1CV+40μA (After 1 minute); I≤0.03CV+15μA (After 5 minutes) CV>1000: I≤0.04CV+100μA (After 1 minute); I≤0.02CV+25μA (After 5 minutes) Where,I:Max.leakage current (μA), C:Nominal capacitance (μF), V: Rated voltage (V) (at 20°C)
Dissipation Factor (tanδ)	Rated Voltage(Vdc): 160 200 250 350 400 450 tanδ (max.): 0.15 0.15 0.15 0.20 0.20 0.20 (at 20°C,120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated Voltage(Vdc): 160 200 250 350 400 450 Z(-25°C)/Z(+20°C): 3 3 3 6 6 6 Z(-40°C)/Z(+20°C): 8 8 8 10 10 - (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after DC voltage plus the rated ripple current is applied for a specified period of time at 105°C. Capacitance Change: ≤±20% of the initial value D.F. (tanδ): ≤200% of the initial specified value Leakage Current: ≤The initial specified value Case Dia.(mm) / Load life (hours): ØD≤8: 5,000; ØD=10: 8,000; ØD≥12.5: 10,000
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied. Capacitance Change: ≤±20% of the initial value D.F. (tanδ): ≤200% of the initial specified value Leakage Current: ≤200% of the initial specified value

DIMENSIONS[mm]



ØD	8		10	12.5	16	18
Ød	0.5	0.6	0.6	0.6	0.8	0.8
F	3.5		5.0	5.0	7.5	7.5
ØD'	ØD+0.5max.					
L'	L+2max.					

PART NUMBERING SYSTEM



RATED RIPPLE CURRENT MULTIPLIERS

Frequency correction factor for ripple current

Freq.(Hz) / Cap.(μF)	120	1k	10k	100k
<100	1.0	1.75	2.25	2.50
≥100	1.0	1.67	2.05	2.25

The endurance of capacitors is shortened with internal heating produced by ripple current at the rate of halving the lifetime with every 5°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

HF series

STANDARD RATINGS

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mArms/105°C, 120Hz)	Part Number
160(2C)	10	10×16	0.15	128	EHF2CM100G16OT
	12	10×16	0.15	145	EHF2CM120G16OT
	15	10×20	0.15	175	EHF2CM150G20OT
	22	10×20	0.15	205	EHF2CM220G20OT
	33	10×20	0.15	250	EHF2CM330G20OT
	39	10×20	0.15	275	EHF2CM390G20OT
	47	10×20	0.15	300	EHF2CM470G20OT
		12.5×20	0.15	310	EHF2CM470W20OT
	56	12.5×20	0.15	350	EHF2CM560W20OT
	68	12.5×20	0.15	478	EHF2CM680W20OT
	82	12.5×20	0.15	510	EHF2CM820W20OT
		16×20	0.15	525	EHF2CM820L20OT
	100	12.5×25	0.15	630	EHF2CM101W25OT
		16×20	0.15	635	EHF2CM101L20OT
	150	16×20	0.15	770	EHF2CM151L20OT
		16×25	0.15	790	EHF2CM151L25OT
	220	16×25	0.15	1020	EHF2CM221L25OT
		18×25	0.15	1045	EHF2CM221M25OT
	330	18×30	0.15	1402	EHF2CM331M30OT
200(2D)	10	10×16	0.15	126	EHF2DM100G16OT
	12	10×16	0.15	140	EHF2DM120G16OT
	15	10×20	0.15	170	EHF2DM150G20OT
	22	10×20	0.15	205	EHF2DM220G20OT
	33	10×20	0.15	255	EHF2DM330G20OT
		12.5×20	0.15	265	EHF2DM330W20OT
	39	12.5×20	0.15	310	EHF2DM390W20OT
	47	12.5×20	0.15	392	EHF2DM470W20OT
	68	12.5×20	0.15	470	EHF2DM680W20OT
		12.5×25	0.15	485	EHF2DM680W25OT
	82	16×20	0.15	554	EHF2DM820L20OT
	100	16×20	0.15	632	EHF2DM101L20OT
		16×25	0.15	655	EHF2DM101L25OT
	150	16×25	0.15	840	EHF2DM151L25OT
		16×30	0.15	865	EHF2DM151L30OT
		18×25	0.15	870	EHF2DM151M25OT
	220	18×25	0.15	1050	EHF2DM221M25OT
		18×30	0.15	1080	EHF2DM221M30OT
	330	18×35	0.15	1430	EHF2DM331M35OT
		18×40	0.15	1460	EHF2DM331M40OT
250(2E)	4.7	8×12	0.15	70	EHF2EM4R7F12OT
	5.6	10×12	0.15	85	EHF2EM5R6G12OT
	6.8	10×12	0.15	110	EHF2EM6R8G12OT
	10	10×20	0.15	140	EHF2EM100G20OT
	22	10×20	0.15	205	EHF2EM220G20OT
	33	12.5×20	0.15	325	EHF2EM330W20OT
	39	12.5×20	0.15	345	EHF2EM390W20OT
	47	12.5×20	0.15	390	EHF2EM470W20OT
		12.5×25	0.15	405	EHF2EM470W25OT
	68	16×20	0.15	528	EHF2EM680L20OT
	82	16×20	0.15	550	EHF2EM820L20OT
		16×30	0.15	570	EHF2EM820L30OT
	100	16×25	0.15	680	EHF2EM101L25OT
		18×25	0.15	700	EHF2EM101M25OT
	150	18×25	0.15	866	EHF2EM151M25OT
	220	18×31	0.15	1130	EHF2EM221M31OT
		18×40	0.15	1160	EHF2EM221M40OT

WV (Vdc)	Cap (μF)	Size ΦDxL(mm)	tanδ	Rated ripple current (mArms/105°C, 120Hz)	Part Number
350(2V)	4.7	10×12	0.20	70	EHF2VM4R7G12OT
	5.6	10×12	0.20	90	EHF2VM5R6G12OT
	6.8	10×16	0.20	112	EHF2VM6R8G16OT
	10	10×20	0.20	140	EHF2VM100G20OT
	22	12.5×20	0.20	265	EHF2VM220W20OT
	33	16×20	0.20	364	EHF2VM330L20OT
	39	16×20	0.20	385	EHF2VM390L20OT
	47	16×20	0.20	430	EHF2VM470L20OT
		16×25	0.20	445	EHF2VM470L25OT
	68	16×25	0.20	560	EHF2VM680L25OT
		18×20	0.20	550	EHF2VM680M20OT
		18×25	0.20	570	EHF2VM680M25OT
	82	18×25	0.20	618	EHF2VM820M25OT
	100	18×25	0.20	700	EHF2VM101M25OT
		18×30	0.20	725	EHF2VM101M30OT
	120	18×30	0.20	836	EHF2VM121M30OT
	150	18×35	0.20	970	EHF2VM151M35OT
400(2G)	1	8×12	0.20	30	EHF2GM010F12OT
	2.2	8×12	0.20	45	EHF2GM2R2F12OT
	3.3	10×12	0.20	80	EHF2GM3R3G12OT
	4.7	10×16	0.20	100	EHF2GM4R7G16OT
	6.8	10×16	0.20	112	EHF2GM6R8G16OT
	10	10×20	0.20	144	EHF2GM100G20OT
	15	12.5×20	0.20	222	EHF2GM150W20OT
	22	12.5×20	0.20	260	EHF2GM220W20OT
		12.5×25	0.20	275	EHF2GM220W25OT
	33	16×20	0.20	368	EHF2GM330L20OT
	39	16×25	0.20	410	EHF2GM390L25OT
	47	16×25	0.20	470	EHF2GM470L25OT
		18×20	0.20	455	EHF2GM470M20OT
		16×30	0.20	480	EHF2GM470L30OT
	56	10×50	0.20	520	EHF2GM560G50OT
	68	12.5×40	0.20	600	EHF2GM680W40OT
		18×25	0.20	590	EHF2GM680M25OT
	82	12.5×45	0.20	625	EHF2GM820W45OT
		18×25	0.20	610	EHF2GM820M25OT
		18×30	0.20	630	EHF2GM820M30OT
	100	12.5×50	0.20	790	EHF2GM101W50OT
		18×31	0.20	765	EHF2GM101M31OT
		18×35	0.20	785	EHF2GM101M35OT
	120	18×35	0.20	870	EHF2GM121M35OT
	150	18×40	0.20	985	EHF2GM151M40OT
450(2W)	6.8	10×20	0.20	112	EHF2WM6R8G20OT
	10	12.5×20	0.20	185	EHF2WM100W20OT
	15	12.5×25	0.20	248	EHF2WM150W25OT
	22	16×20	0.20	295	EHF2WM220L20OT
	33	10×40	0.20	405	EHF2WM330G40OT
		16×25	0.20	398	EHF2WM330L25OT
		18×20	0.20	385	EHF2WM330M20OT
	39	10×45	0.20	425	EHF2WM390G45OT
		18×25	0.20	415	EHF2WM390M25OT
	47	12.5×40	0.20	505	EHF2WM470W40OT
		18×25	0.20	496	EHF2WM470M25OT
	56	12.5×40	0.20	550	EHF2WM560W40OT
	68	18×30	0.20	640	EHF2WM680M30OT
	82	12.5×50	0.20	730	EHF2WM820W50OT
		18×35	0.20	720	EHF2WM820M35OT
	100	18×40	0.20	808	EHF2WM101M40OT

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