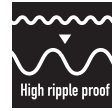


SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

UPGRADE!

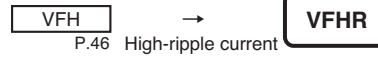
VFHR Series Useful of 20,000 hours at 85°C



• Conform RoHS

Features

- High-reliability series with the warranty of 20,000 hours realized through improvement of the VFHR series into longer-life series.

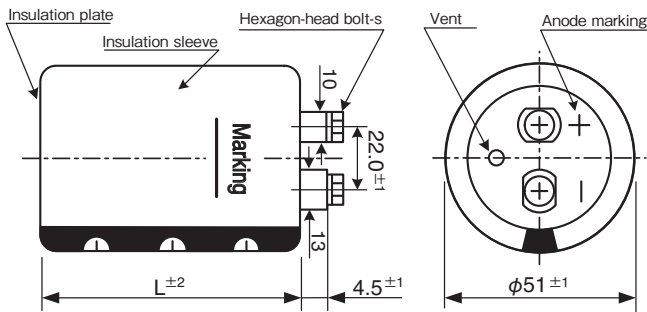


Product Specifications

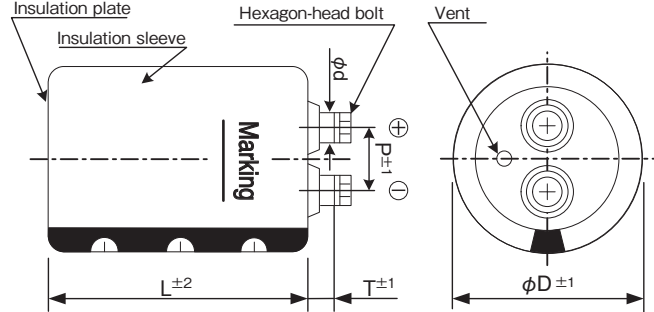
Items	Specifications
Temperature range	-40°C ~ +85°C
Rated voltage	350 ~ 500V.DC
Capacitance tolerance	±20% (20°C, 120Hz)
Leakage current	0.01CV (μA) or 5mA, whichever is smaller or less (20°C, after 5 minutes) [C = nominal capacitance (μF), V = rated voltage (V)]
Dissipation factor	Less than the value specified in the standard products table. (20°C, 120Hz)
Permissible ripple current	As specified in the standard product table. (85°C, 120Hz)
Endurance	After the rated voltage with specified ripple current is applied at 85°C for 20,000 hours : Capacitance change : Within ±15% of the initial value measured Dissipation factor : 175% or less than the initial value specified Leakage current : Less than or equal to the initial value specified
Shelf life	The following specification shall be met when the capacitor are restored to 20°C after storage of 500 hours at 85°C with no voltage applied. Before the measurement, the capacitor shall be preconditioned by applying the voltage treatment according to Item 4.1 of JIS C 5101-4. Capacitance change : Within ±15% of the initial value measured Dissipation factor : 175% or less than the initial value specified Leakage current : Less than or equal to the initial value specified
Others	JIS C 5101-4

Dimensions

● φ51



● φ64 ~ 90



Ripple current correction coefficient

Temperature (°C)	40	60	85	
Correction coefficient	350~450V.DC	1.90	1.75	1.00
	500V.DC	2.10	1.90	1.00
Frequency (Hz)	120	300	1k	≥10k
	Correction coefficient	1.0	1.1	1.3
Forced wind (m/s)	<0.5	0.5≤		
Correction coefficient	1.0	1.1		

(unit : mm)

φD	P	T	φd	Hexagon-head bolt	Cap material
51	22.0	4.5	—	M5×10	Phenol resin
64	28.6	8.0	11.0	M5×10	Phenol resin
77	31.5	9.0	12.0	M6×12	Phenol resin
90	31.5	8.0	12.0	M6×12	Phenol resin

Terminal permissible current is limited to 60Arms for M5, 100Arms for M6. (Even if calculated the permissible ripple current with the correction coefficient exceeds 60Arms for M5, 100Arms for M6) Please consult us when the ripple voltage exceeds 50 Vp-p.

Refer to page 21 for product code.

Bracket

- Refer to page 22-23 for shapes and dimensions.
- Product names in the Standard Products Table correspond to the bracket for Type Y, but Type I bracket may be used (Type of bracket code = I).
- If bracket are not necessary, enter "N" for the type of bracket code.
- Bracket will be delivered separately.

Product code

(Example) VFHR type 400V 5,600 μF ±20%

VFHR 2G 562 Y F 110



SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

VFHR Series

Standard Products Table

Rated Voltage (V. DC)	Capacitance (μF)	Case size φD×L(mm)	tanδ 20°C, 120Hz	Ripple current (Arms) 85°C, 120Hz	ESR(typ.) (mΩ) 20°C, 100Hz	Z max (mΩ) 20°C, 10kHz	ESL(typ.) (nH)	Product name
350	1,800	51×96	0.20	9.1	54	55	21	VFHR2V182YC096
	2,200	51×109	0.20	10.2	44	45	21	VFHR2V222YC109
	2,700	51×125	0.20	11.4	36	37	21	VFHR2V272YC125
	3,300	64×107	0.20	15.1	29	30	22	VFHR2V332YD107
	3,900	64×123	0.20	16.8	24	26	22	VFHR2V392YD123
	4,700	64×147	0.20	18.2	20	21	22	VFHR2V472YD147
		77×108	0.20	20.6	20	21	24	VFHR2V472YE108
	5,600	64×164	0.20	20.3	17	18	22	VFHR2V562YD164
		77×124	0.20	23.1	17	18	24	VFHR2V562YE124
	6,800	64×187	0.20	22.6	14	15	22	VFHR2V682YD187
		77×148	0.20	24.9	14	15	24	VFHR2V682YE148
		90×110	0.20	28.6	14	15	24	VFHR2V682YF110
	8,200	77×165	0.20	27.9	12	12	24	VFHR2V822YE165
		90×150	0.20	31.0	12	12	24	VFHR2V822YF150
	10,000	77×188	0.20	31.0	9	10	24	VFHR2V103YE188
		90×150	0.20	34.2	9	10	24	VFHR2V103YF150
	12,000	77×228	0.20	35.1	8	8	24	VFHR2V123YE228
90×167		0.20	36.8	8	8	24	VFHR2V123YF167	
15,000	90×190	0.20	41.5	6	7	24	VFHR2V153YF190	
18,000	90×230	0.20	44.3	5	6	24	VFHR2V183YF230	
22,000	90×268	0.20	45.0	4	5	24	VFHR2V223YF268	
400	1,500	51×96	0.20	8.4	63	67	21	VFHR2G152YC096
	1,800	51×109	0.20	9.4	53	56	21	VFHR2G182YC109
	2,200	51×125	0.20	10.6	43	46	21	VFHR2G222YC125
	2,700	64×107	0.20	13.6	35	37	22	VFHR2G272YD107
	3,300	64×123	0.20	15.5	29	30	22	VFHR2G332YD123
	3,900	64×147	0.20	16.5	24	26	22	VFHR2G392YD147
		77×108	0.20	18.8	24	26	24	VFHR2G392YE108
	4,700	64×164	0.20	18.6	20	21	22	VFHR2G472YD164
		77×124	0.20	21.2	20	21	24	VFHR2G472YE124
	5,600	64×187	0.20	20.5	17	18	22	VFHR2G562YD187
		77×148	0.20	22.6	17	18	24	VFHR2G562YE148
		90×110	0.20	26.0	17	18	24	VFHR2G562YF110
	6,800	77×165	0.20	25.4	14	15	24	VFHR2G682YE165
		90×150	0.20	28.2	14	15	24	VFHR2G682YF150
	8,200	77×188	0.20	28.1	12	12	24	VFHR2G822YE188
		90×150	0.20	31.0	12	12	24	VFHR2G822YF150
	10,000	77×228	0.20	32.0	9	10	24	VFHR2G103YE228
90×167		0.20	33.6	9	10	24	VFHR2G103YF167	
12,000	90×190	0.20	37.1	8	8	24	VFHR2G123YF190	
15,000	90×230	0.20	40.4	6	7	24	VFHR2G153YF230	
18,000	90×268	0.20	40.6	5	6	24	VFHR2G183YF268	
450	1,200	51×96	0.20	7.9	79	83	21	VFHR2W122YC096
	1,500	51×109	0.20	9.0	64	66	21	VFHR2W152YC109
	1,800	51×125	0.20	10.1	53	55	21	VFHR2W182YC125
	2,200	64×107	0.20	12.6	43	45	22	VFHR2W222YD107
	2,700	64×123	0.20	14.4	35	37	22	VFHR2W272YD123
		77×108	0.20	16.1	35	37	24	VFHR2W272YE108
	3,300	64×147	0.20	15.6	29	30	22	VFHR2W332YD147
		77×124	0.20	18.2	29	30	24	VFHR2W332YE124
	3,900	64×164	0.20	17.5	24	26	22	VFHR2W392YD164
		77×148	0.20	19.4	24	26	24	VFHR2W392YE148
		90×110	0.20	22.3	24	26	24	VFHR2W392YF110
	4,700	64×187	0.20	19.3	20	21	22	VFHR2W472YD187
		77×148	0.20	21.3	20	21	24	VFHR2W472YE148
		90×126	0.20	24.2	20	21	24	VFHR2W472YF126
	5,600	77×165	0.20	23.7	17	18	24	VFHR2W562YE165
		90×150	0.20	26.3	17	18	24	VFHR2W562YF150
	6,800	77×188	0.20	26.3	14	15	24	VFHR2W682YE188
		90×167	0.20	28.5	14	15	24	VFHR2W682YF167
	8,200	77×228	0.20	29.8	12	12	24	VFHR2W822YE228
90×190		0.20	31.5	12	12	24	VFHR2W822YF190	
10,000	90×230	0.20	33.9	9	10	24	VFHR2W103YF230	
15,000	90×268	0.20	38.2	6	7	24	VFHR2W153YF268	

ALUMINUM ELECTROLYTIC CAPACITORS

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

Standard Products Table

Rated Voltage (V. DC)	Capacitance (μF)	Case size $\phi D \times L$ (mm)	$\tan\delta$ 20°C, 120Hz	Ripple current (Arms) 85°C, 120Hz	ESR(typ.) (m Ω) 20°C, 100Hz	Z max (m Ω) 20°C, 10kHz	ESL(typ.) (nH)	Product name
500	680	51 × 96	0.20	4.6	153	162	21	VFHR2H681YC096
	820	51 × 109	0.20	5.2	127	134	21	VFHR2H821YC109
	1,000	51 × 125	0.20	5.9	104	110	21	VFHR2H102YC125
	1,500	64 × 107	0.20	8.4	69	73	22	VFHR2H152YD107
	1,800	64 × 123	0.20	9.5	58	61	22	VFHR2H182YD123
	2,200	64 × 147	0.20	10.3	47	50	22	VFHR2H222YD147
		77 × 108	0.20	11.7	47	50	24	VFHR2H222YE108
	2,700	64 × 187	0.20	11.8	39	41	22	VFHR2H272YD187
		77 × 124	0.20	13.3	39	41	24	VFHR2H272YE124
	3,300	77 × 148	0.20	14.4	32	33	24	VFHR2H332YE148
		90 × 110	0.20	16.5	32	33	24	VFHR2H332YF110
	3,900	77 × 165	0.20	15.9	27	28	24	VFHR2H392YE165
		90 × 126	0.20	17.8	27	28	24	VFHR2H392YF126
	4,700	77 × 188	0.20	17.6	22	23	24	VFHR2H472YE188
		90 × 150	0.20	19.4	22	23	24	VFHR2H472YF150
	5,600	77 × 228	0.20	19.8	19	20	24	VFHR2H562YE228
		90 × 167	0.20	20.8	19	20	24	VFHR2H562YF167
	6,800	90 × 190	0.20	23.1	15	16	24	VFHR2H682YF190
8,200	90 × 230	0.20	24.7	13	13	24	VFHR2H822YF230	
10,000	90 × 268	0.20	25.1	11	11	24	VFHR2H103YF268	

ALUMINUM ELECTROLYTIC CAPACITORS

Life time graph

Useful life depending on ambient temperature T_a and ripple current operating condition I versus rated ripple current at 85°C, 120Hz

