

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

UPGRADE!

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

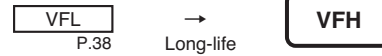
Standard



• Conform RoHS

Features

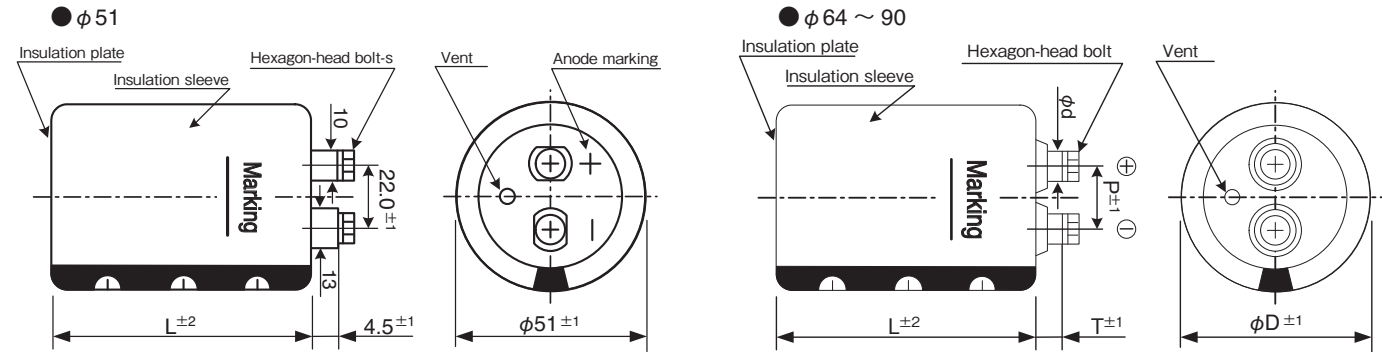
- High-reliability series with the warranty of 20,000 hours realized through improvement of the VFL series into longer-life series.



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 meet 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



Ripple current correction coefficient

Temperature (°C)	60	85		
Correction coefficient	2.16	1.00		
Frequency (Hz)	120	300	1k	≥10k
Correction coefficient	1.0	1.1	1.3	1.4
Forced wind (m/s)	<0.5	0.5≤		
Correction coefficient	1.0	1.1		

(unit : mm)

φ D	P	T	φ d	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	8.0	11.0	M5×10	Phenol resin
90	31.5	7.0	11.0	M5×10	Phenol resin

Terminal permissible current is limited to 60Arms. (Even if calculated the permissible ripple current with the correction coefficient exceeds 60Arms) 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) VFH type 400V 5,600 µF ±20%

VFH 2G 562 Y F 097

- VFH: Type of series
- 2G: Rated voltage code
- 562: Capacitance code
- Y: Type of bracket code
- F: Case dia code
- 097: Case height code

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

VFH Series

Standard Products Table

Rated Voltage (V. DC)	Capacitance (μ F)	Case size ϕ 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
350	1,800	51 \times 75	0.20	5.6	59	70	21	VFH2V182YC075
	2,200	51 \times 96	0.20	6.5	48	57	21	VFH2V222YC096
	2,700	51 \times 109	0.20	7.5	39	47	21	VFH2V272YC109
	3,300	51 \times 125	0.20	8.6	32	38	21	VFH2V332YC125
	3,900	64 \times 94	0.20	10.5	27	32	22	VFH2V392YD094
	4,700	64 \times 107	0.20	11.9	22	23	22	VFH2V472YD107
	5,600	64 \times 123	0.20	13.0	20	21	22	VFH2V562YD123
		77 \times 95	0.20	14.6	20	21	24	VFH2V562YE095
	6,800	64 \times 147	0.20	14.1	18	18	22	VFH2V682YD147
		77 \times 108	0.20	16.0	18	18	24	VFH2V682YE108
		90 \times 97	0.20	18.5	18	18	24	VFH2V682YF097
	8,200	64 \times 187	0.20	15.9	15	17	22	VFH2V822YD187
		77 \times 124	0.20	18.0	15	17	24	VFH2V822YE124
		90 \times 110	0.20	20.2	15	17	24	VFH2V822YF110
	10,000	77 \times 148	0.20	19.5	12	15	24	VFH2V103YE148
		90 \times 126	0.20	22.1	12	15	24	VFH2V103YF126
	12,000	77 \times 188	0.20	21.8	10	13	24	VFH2V123YE188
		90 \times 150	0.20	24.1	10	13	24	VFH2V123YF150
	15,000	77 \times 228	0.20	25.2	8	11	24	VFH2V153YE228
		90 \times 167	0.20	26.5	8	11	24	VFH2V153YF167
18,000	90 \times 190	0.20	29.3	6	9	24	VFH2V183YF190	
22,000	90 \times 230	0.20	31.5	5	7	24	VFH2V223YF230	
27,000	90 \times 268	0.20	33.0	4	6	24	VFH2V273YF268	
400	1,200	51 \times 75	0.20	4.7	83	97	21	VFH2G122YC075
	1,500	51 \times 96	0.20	5.6	66	77	21	VFH2G152YC096
	1,800	51 \times 109	0.20	6.2	55	65	21	VFH2G182YC109
	2,200	51 \times 125	0.20	7.0	45	53	21	VFH2G222YC125
	3,300	64 \times 94	0.20	9.7	30	35	22	VFH2G332YD094
	3,900	64 \times 107	0.20	10.8	27	32	22	VFH2G392YD107
	4,700	64 \times 123	0.20	11.9	22	23	22	VFH2G472YD123
		77 \times 95	0.20	13.3	22	23	24	VFH2G472YE095
	5,600	64 \times 147	0.20	12.8	20	21	22	VFH2G562YD147
		77 \times 108	0.20	14.5	20	21	24	VFH2G562YE108
		90 \times 97	0.20	16.8	20	21	24	VFH2G562YF097
	6,800	64 \times 187	0.20	14.5	18	18	22	VFH2G682YD187
		77 \times 124	0.20	16.4	18	18	24	VFH2G682YE124
		90 \times 110	0.20	18.4	18	18	24	VFH2G682YF110
	8,200	77 \times 165	0.20	18.0	15	17	24	VFH2G822YE165
		90 \times 126	0.20	20.0	15	17	24	VFH2G822YF126
	10,000	77 \times 188	0.20	19.9	12	15	24	VFH2G103YE188
		90 \times 150	0.20	22.0	12	15	24	VFH2G103YF150
	12,000	90 \times 167	0.20	23.7	10	13	24	VFH2G123YF167
	15,000	90 \times 190	0.20	26.7	8	11	24	VFH2G153YF190
18,000	90 \times 230	0.20	28.5	7	9	24	VFH2G183YF230	
22,000	90 \times 268	0.20	29.8	6	7	24	VFH2G223YF268	
450	1,000	51 \times 75	0.20	4.2	102	106	21	VFH2W102YC075
	1,200	51 \times 96	0.20	5.0	85	88	21	VFH2W122YC096
	1,500	51 \times 109	0.20	5.9	68	71	21	VFH2W152YC109
	1,800	51 \times 125	0.20	6.6	57	59	21	VFH2W182YC125
	2,200	64 \times 94	0.20	8.1	46	48	22	VFH2W222YD094
	2,700	64 \times 107	0.20	9.2	40	42	22	VFH2W272YD107
	3,300	64 \times 123	0.20	10.2	35	35	22	VFH2W332YD123
		77 \times 95	0.20	11.4	35	35	24	VFH2W332YE095
	3,900	64 \times 147	0.20	10.9	27	32	22	VFH2W392YD147
		77 \times 108	0.20	12.4	27	32	24	VFH2W392YE108
	4,700	64 \times 164	0.20	12.2	24	27	22	VFH2W472YD164
		77 \times 124	0.20	13.9	24	27	24	VFH2W472YE124
		90 \times 97	0.20	15.8	24	27	24	VFH2W472YF097
	5,600	64 \times 187	0.20	13.5	22	23	22	VFH2W562YD187
		77 \times 148	0.20	14.9	22	23	24	VFH2W562YE148
		90 \times 110	0.20	17.1	22	23	24	VFH2W562YF110
	6,800	77 \times 165	0.20	16.8	20	20	24	VFH2W682YE165
		90 \times 126	0.20	18.7	20	20	24	VFH2W682YF126
	8,200	77 \times 188	0.20	18.5	18	18	24	VFH2W822YE188
		90 \times 150	0.20	20.4	18	18	24	VFH2W822YF150
10,000	90 \times 167	0.20	22.2	15	15	24	VFH2W103YF167	
12,000	90 \times 190	0.20	24.5	13	12	24	VFH2W123YF190	
15,000	90 \times 230	0.20	26.6	11	10	24	VFH2W153YF230	
18,000	90 \times 268	0.20	27.7	9	8	24	VFH2W183YF268	

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Standard Products Table

Rated Voltage (V. DC)	Capacitance (μ F)	Case size ϕ D×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	51×75	0.20	3.3	164	177	21	VFH2H681YC075
	820	51×96	0.20	3.9	136	147	21	VFH2H821YC096
	1,000	51×109	0.20	4.4	111	120	21	VFH2H102YC109
	1,200	51×125	0.20	5.0	93	100	21	VFH2H122YC125
	1,800	64×107	0.20	7.1	62	50	22	VFH2H182YD107
	2,200	64×123	0.20	7.9	53	50	22	VFH2H222YD123
		77×95	0.20	8.9	53	50	24	VFH2H222YE095
	2,700	64×147	0.20	8.6	40	35	22	VFH2H272YD147
		77×108	0.20	9.8	40	35	24	VFH2H272YE108
	3,300	64×164	0.20	9.8	38	32	22	VFH2H332YD164
		90×97	0.20	12.6	38	32	24	VFH2H332YF097
	3,900	64×187	0.20	10.7	30	27	22	VFH2H392YD187
		77×124	0.20	12.1	30	27	24	VFH2H392YE124
		90×110	0.20	13.6	30	27	24	VFH2H392YF110
	4,700	77×148	0.20	13.0	25	20	24	VFH2H472YE148
		90×126	0.20	14.8	25	20	24	VFH2H472YF126
	5,600	77×165	0.20	14.5	20	17	24	VFH2H562YE165
		90×150	0.20	16.1	20	17	24	VFH2H562YF150
	6,800	77×188	0.20	16.1	17	17	24	VFH2H682YE188
		90×167	0.20	17.4	17	17	24	VFH2H682YF167
8,200	90×190	0.20	19.3	14	14	24	VFH2H822YF190	
10,000	90×230	0.20	20.7	12	12	24	VFH2H103YF230	
12,000	90×268	0.20	21.5	10	10	24	VFH2H123YF268	

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

