

VF Series

Useful of 4,000 hours at 85°C

- Conform RoHS

Features

- Ripple current increased by 10% by new heat radiation construction with HCGF6A series.

HCG7A
P.78

HCGF5A
P.82

HCGF6A
P.86

High-ripple current

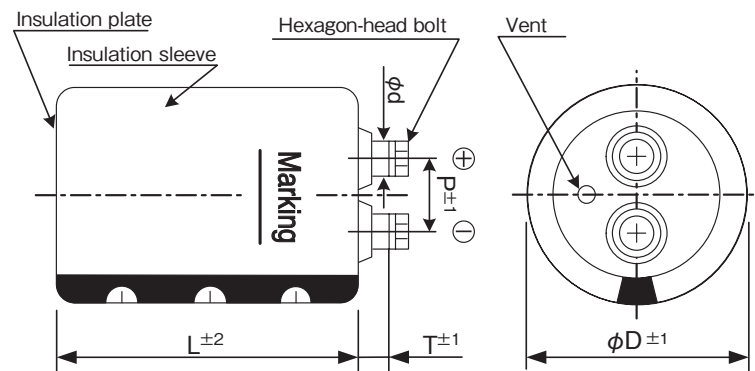
VF



Product Specifications

Items	Specifications
Temperature range	- 40°C ~ + 85°C (6.3 ~ 600V.DC) - 25°C ~ + 85°C (650V.DC)
Rated voltage	6.3 ~ 650V.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 2,000 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 mesured 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



(unit : mm)

φD	P	T	φd	Hexagon-head bolt	Cap material
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

Ripple current correction coefficient

Temperature correction coefficient

Correction coefficient	Temperature(°C)	60	85
	6.3 ~ 100V.DC	2.19	1.00
160 ~ 250V.DC	2.02	1.00	
350 ~ 650V.DC	1.67	1.00	

Frequency correction coefficient

Frequency(Hz)	120	300	1K	≥ 10K
Correction coefficient	1.0	1.1	1.3	1.4

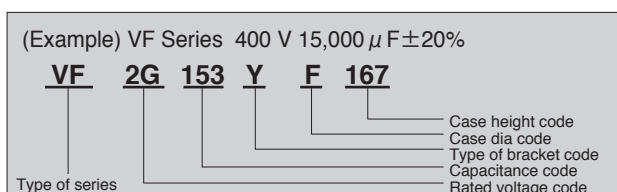
Forced wind correction coefficient

Forced wind(m/s)	< 0.5	0.5 ≤
Correction coefficient	1.0	1.1

Terminal permissible currents : 60Arms for M5.

Please use this type of capacitor at a terminal current below the permissible.

Product code



Refer to page 19 for product code.

Bracket

- Refer to page 20-21 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.

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

VF 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
6.3	330,000	64 \times 94	1.50	16.1	8	9	22	VF0J334YD094
	470,000	64 \times 107	1.80	18.6	7	8	22	VF0J474YD107
	560,000	64 \times 123	2.40	19.7	6	7	22	VF0J564YD123
		77 \times 95	2.40	18.3	6	7	24	VF0J564YE095
680,000	77 \times 108	2.90	20.1	5	7	24	VF0J684YE108	
10	330,000	64 \times 94	1.80	17.2	5	6	22	VF1A334YD094
	390,000	64 \times 107	2.00	18.7	4	6	22	VF1A394YD107
	470,000	64 \times 123	2.30	21.1	4	6	22	VF1A474YD123
		77 \times 95	2.30	19.4	4	6	24	VF1A474YE095
	560,000	77 \times 108	3.00	21.0	3	5	24	VF1A564YE108
	680,000	77 \times 124	3.70	23.8	3	5	24	VF1A684YE124
90 \times 97		3.70	22.9	3	5	24	VF1A684YF097	
16	270,000	64 \times 94	1.60	16.2	4	6	22	VF1C274YD094
	330,000	64 \times 123	1.80	18.3	4	6	22	VF1C334YD123
		77 \times 95	1.80	18.0	4	6	24	VF1C334YE095
	390,000	77 \times 108	2.40	19.5	4	5	24	VF1C394YE108
	470,000	77 \times 124	2.90	22.0	3	5	24	VF1C474YE124
		90 \times 97	2.90	21.9	3	5	24	VF1C474YF097
560,000	90 \times 110	3.20	23.7	3	5	24	VF1C564YF110	
25	180,000	64 \times 94	1.20	13.7	5	6	22	VF1E184YD094
	220,000	64 \times 107	1.20	15.1	4	5	22	VF1E224YD107
	270,000	64 \times 123	1.40	17.2	4	5	22	VF1E274YD123
	330,000	77 \times 95	1.40	19.2	4	5	24	VF1E334YE095
	390,000	77 \times 108	2.10	20.8	4	5	24	VF1E394YE108
		77 \times 124	2.30	23.4	3	5	24	VF1E474YE124
	470,000	90 \times 97	2.30	22.9	3	5	24	VF1E474YF097
560,000	90 \times 110	2.30	24.8	3	4	24	VF1E564YF110	
35	120,000	64 \times 94	1.00	12.9	5	7	22	VF1V124YD094
	150,000	64 \times 107	1.00	14.4	5	7	22	VF1V154YD107
	180,000	64 \times 123	1.20	16.3	5	7	22	VF1V184YD123
		77 \times 95	1.20	15.2	5	7	24	VF1V184YE095
	220,000	77 \times 108	1.20	16.8	5	7	24	VF1V224YE108
	270,000	77 \times 124	1.80	19.0	4	6	24	VF1V274YE124
		90 \times 97	1.80	18.8	4	6	24	VF1V274YF097
330,000	90 \times 110	2.00	20.7	4	6	24	VF1V334YF110	
50	82,000	64 \times 94	0.70	12.1	7	8	22	VF1H823YD094
	100,000	64 \times 107	0.70	13.4	6	7	22	VF1H104YD107
		64 \times 123	0.90	16.8	5	7	22	VF1H154YD123
	150,000	77 \times 95	0.90	13.9	5	7	24	VF1H154YE095
		77 \times 108	1.40	15.2	5	6	24	VF1H184YE108
	220,000	77 \times 124	1.50	17.2	4	6	24	VF1H224YE124
		90 \times 97	1.50	16.5	4	6	24	VF1H224YF097
270,000	90 \times 110	1.50	18.2	3	5	24	VF1H274YF110	
63	56,000	64 \times 94	0.50	13.3	8	9	22	VF1J563YD094
	68,000	64 \times 107	0.50	14.6	7	8	22	VF1J683YD107
	82,000	64 \times 123	0.70	16.5	7	8	22	VF1J823YD123
	100,000	77 \times 95	0.70	15.5	7	8	24	VF1J104YE095
	120,000	77 \times 108	1.10	16.9	6	7	24	VF1J124YE108
		77 \times 124	1.20	19.3	6	7	24	VF1J154YE124
	150,000	90 \times 97	1.20	18.3	6	7	24	VF1J154YF097
180,000	90 \times 110	1.20	19.9	5	6	24	VF1J184YF110	

ALUMINUM ELECTROLYTIC CAPACITORS

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

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
80	39,000	64 \times 94	0.35	12.8	6	7	22	VF1K393YD094
	47,000	64 \times 107	0.35	14.0	6	7	22	VF1K473YD107
	56,000	64 \times 123	0.40	15.7	5	7	22	VF1K563YD123
		77 \times 95	0.40	15.3	5	7	24	VF1K563YE095
	68,000	77 \times 108	0.40	16.8	4	7	24	VF1K683YE108
		77 \times 124	0.60	18.9	3	6	24	VF1K823YE124
82,000	90 \times 97	0.60	18.1	3	6	24	VF1K823YF097	
	100,000	90 \times 110	0.70	19.8	3	6	24	VF1K104YF110
100	22,000	64 \times 94	0.20	9.6	8	9	22	VF2A223YD094
	33,000	64 \times 107	0.25	11.7	6	7	22	VF2A333YD107
	39,000	64 \times 123	0.30	13.1	5	7	22	VF2A393YD123
		77 \times 95	0.30	12.8	5	7	24	VF2A393YE095
	47,000	77 \times 108	0.30	14.0	5	7	24	VF2A473YE108
		77 \times 124	0.45	15.6	4	6	24	VF2A563YE124
56,000	90 \times 97	0.45	15.8	4	6	24	VF2A563YF097	
	68,000	90 \times 110	0.50	17.3	4	6	24	VF2A683YF110
160	12,000	64 \times 94	0.25	12.3	12	15	22	VF2C123YD094
	15,000	64 \times 107	0.25	13.7	11	12	22	VF2C153YD107
		64 \times 123	0.25	15.4	9	11	22	VF2C183YD123
	18,000	77 \times 95	0.25	17.4	9	11	24	VF2C183YE095
		64 \times 147	0.25	16.8	8	8	22	VF2C223YD147
	22,000	77 \times 108	0.25	19.1	8	8	24	VF2C223YE108
		77 \times 124	0.25	21.7	7	8	24	VF2C273YE124
	27,000	90 \times 97	0.25	24.6	7	8	24	VF2C273YF097
77 \times 148		0.25	23.5	6	7	24	VF2C333YE148	
33,000	90 \times 110	0.25	27.0	6	7	24	VF2C333YF110	
	39,000	90 \times 126	0.25	29.1	5	7	24	VF2C393YF126
200	12,000	64 \times 94	0.25	12.3	12	14	22	VF2D123YD094
	15,000	64 \times 123	0.25	14.1	10	13	22	VF2D153YD123
		77 \times 95	0.25	15.8	10	13	24	VF2D153YE095
	18,000	64 \times 147	0.25	15.2	8	12	22	VF2D183YD147
		77 \times 108	0.25	17.3	8	12	24	VF2D183YE108
	22,000	77 \times 124	0.25	19.6	7	7	24	VF2D223YE124
		90 \times 97	0.25	22.2	7	7	24	VF2D223YF097
	27,000	77 \times 148	0.25	21.3	6	7	24	VF2D273YE148
90 \times 110		0.25	24.4	6	7	24	VF2D273YF110	
33,000	90 \times 126	0.25	26.7	5	7	24	VF2D333YF126	
250	8,200	64 \times 94	0.25	10.2	15	16	22	VF2E822YD094
	10,000	64 \times 123	0.25	11.5	12	14	22	VF2E103YD123
		64 \times 147	0.25	12.4	10	11	22	VF2E123YD147
	12,000	77 \times 95	0.25	14.2	10	11	24	VF2E123YE095
		77 \times 124	0.25	16.2	8	11	24	VF2E153YE124
	15,000	90 \times 97	0.25	18.3	8	11	24	VF2E153YF097
		77 \times 148	0.25	17.4	7	10	24	VF2E183YE148
	18,000	90 \times 110	0.25	19.9	7	10	24	VF2E183YF110
22,000		90 \times 126	0.25	21.8	6	8	24	VF2E223YF126

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

VF 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	4,700	64×94	0.20	15.1	21	22	22	VF2V472YD094
	5,600	64×107	0.20	16.4	18	19	22	VF2V562YD107
	6,800	64×123	0.20	18.6	15	15	22	VF2V682YD123
		77×95	0.20	20.9	15	15	24	VF2V682YE095
	8,200	64×147	0.20	20.1	12	15	22	VF2V822YD147
		77×108	0.20	22.9	12	15	24	VF2V822YE108
	10,000	64×187	0.20	22.9	10	15	22	VF2V103YD187
		77×124	0.20	25.9	10	15	24	VF2V103YE124
		90×97	0.20	29.3	10	15	24	VF2V103YF097
	12,000	77×148	0.20	27.8	8	13	24	VF2V123YE148
		90×126	0.20	31.7	8	13	24	VF2V123YF126
	15,000	77×188	0.20	31.9	7	10	24	VF2V153YE188
		90×150	0.20	35.2	7	10	24	VF2V153YF150
	18,000	77×228	0.20	36.0	7	10	24	VF2V183YE228
90×167		0.20	37.9	7	10	24	VF2V183YF167	
22,000	90×230	0.20	41.1	6	9	24	VF2V223YF230	
400	3,900	64×94	0.20	13.7	26	28	22	VF2G392YD094
	4,700	64×107	0.20	15.0	21	22	22	VF2G472YD107
	5,600	64×123	0.20	16.9	18	19	22	VF2G562YD123
		77×95	0.20	19.0	18	19	24	VF2G562YE095
	6,800	64×147	0.20	18.3	15	15	22	VF2G682YD147
		77×108	0.20	20.8	15	15	24	VF2G682YE108
	8,200	64×187	0.20	20.8	12	15	22	VF2G822YD187
		77×124	0.20	23.5	12	15	24	VF2G822YE124
		90×97	0.20	26.6	12	15	24	VF2G822YF097
	10,000	77×148	0.20	25.4	10	15	24	VF2G103YE148
		90×110	0.20	29.1	10	15	24	VF2G103YF110
	12,000	77×188	0.20	28.5	8	13	24	VF2G123YE188
		90×126	0.20	31.7	8	13	24	VF2G123YF126
	15,000	77×228	0.20	32.9	8	10	24	VF2G153YE228
90×167		0.20	34.6	8	10	24	VF2G153YF167	
18,000	90×190	0.20	38.2	6	9	24	VF2G183YF190	
22,000	90×230	0.20	41.1	5	7	24	VF2G223YF230	
450	2,700	64×94	0.20	11.7	38	40	22	VF2W272YD094
	3,300	64×107	0.20	12.9	30	35	22	VF2W332YD107
	3,900	64×123	0.20	14.4	27	32	22	VF2W392YD123
		77×95	0.20	16.2	27	32	24	VF2W392YE095
	4,700	77×108	0.20	17.8	21	21	24	VF2W472YE108
	5,600	64×147	0.20	17.0	20	20	22	VF2W562YD147
		77×124	0.20	19.9	20	20	24	VF2W562YE124
		90×97	0.20	22.5	20	20	24	VF2W562YF097
	6,800	64×187	0.20	19.4	15	18	22	VF2W682YD187
		77×148	0.20	21.4	15	18	24	VF2W682YE148
		90×110	0.20	24.6	15	18	24	VF2W682YF110
	8,200	77×165	0.20	24.0	14	16	24	VF2W822YE165
		90×126	0.20	26.8	14	16	24	VF2W822YF126
	10,000	77×188	0.20	26.7	10	15	24	VF2W103YE188
		90×150	0.20	29.4	10	15	24	VF2W103YF150
	12,000	77×228	0.20	30.2	9	12	24	VF2W123YE228
		90×167	0.20	31.7	9	12	24	VF2W123YF167
	15,000	90×190	0.20	35.7	7	10	24	VF2W153YF190
18,000	90×230	0.20	38.1	6	9	24	VF2W183YF230	

ALUMINUM ELECTROLYTIC CAPACITORS

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

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	1,800	64×94	0.20	9.1	53	50	22	VF2H182YD094
	2,200	64×107	0.20	10.0	40	35	22	VF2H222YD107
	2,700	64×123	0.20	11.4	37	33	22	VF2H272YD123
		77×95	0.20	12.9	37	33	24	VF2H272YE095
	3,300	64×147	0.20	12.4	36	32	22	VF2H332YD147
		77×108	0.20	14.2	36	32	24	VF2H332YE108
	3,900	64×164	0.20	13.9	27	29	22	VF2H392YD164
		77×124	0.20	15.8	27	29	24	VF2H392YE124
		90×97	0.20	17.9	27	29	24	VF2H392YF097
	4,700	64×187	0.20	15.4	25	25	22	VF2H472YD187
		77×148	0.20	17.0	25	25	24	VF2H472YE148
		90×110	0.20	19.5	25	25	24	VF2H472YF110
	5,600	77×165	0.20	18.9	23	21	24	VF2H562YE165
		90×126	0.20	21.1	23	21	24	VF2H562YF126
	6,800	77×188	0.20	20.9	20	18	24	VF2H682YE188
90×150		0.20	23.1	20	18	24	VF2H682YF150	
8,200	77×228	0.20	23.8	17	16	24	VF2H822YE228	
	90×167	0.20	25.0	17	16	24	VF2H822YF167	
10,000	90×190	0.20	27.8	14	16	24	VF2H103YF190	
12,000	90×230	0.20	29.6	12	14	24	VF2H123YF230	
550	1,200	64×94	0.20	7.2	93	100	22	VF2L122YD094
	1,500	64×107	0.20	8.1	74	80	22	VF2L152YD107
	1,800	64×123	0.20	9.1	61	50	22	VF2L182YD123
		77×95	0.20	10.3	61	50	24	VF2L182YE095
	2,200	64×147	0.20	9.9	53	50	22	VF2L222YD147
		77×108	0.20	11.3	53	50	24	VF2L222YE108
	2,700	64×164	0.20	11.3	40	35	22	VF2L272YD164
		90×97	0.20	14.5	40	35	24	VF2L272YF097
	3,300	64×187	0.20	12.6	38	32	22	VF2L332YD187
		77×124	0.20	14.2	38	32	24	VF2L332YE124
		90×110	0.20	16.0	38	32	24	VF2L332YF110
	3,900	77×165	0.20	15.4	30	27	24	VF2L392YE165
		90×126	0.20	17.2	30	27	24	VF2L392YF126
	4,700	77×188	0.20	17.0	25	20	24	VF2L472YE188
		90×150	0.20	18.8	25	20	24	VF2L472YF150
5,600	77×228	0.20	19.2	20	17	24	VF2L562YE228	
	90×167	0.20	20.2	20	17	24	VF2L562YF167	
6,800	90×190	0.20	22.4	17	17	24	VF2L682YF190	
8,200	90×230	0.20	23.9	14	14	24	VF2L822YF230	
600	1,500	64×107	0.20	8.7	84	63	22	VF600V152YD107
	1,800	64×123	0.20	9.8	70	53	22	VF600V182YD123
		77×95	0.20	11.0	70	53	24	VF600V182YE095
	2,200	64×147	0.20	10.6	58	44	22	VF600V222YD147
		77×108	0.20	12.1	58	44	24	VF600V222YE108
	2,700	64×164	0.20	12.1	47	35	22	VF600V272YD164
		77×124	0.20	13.8	47	35	24	VF600V272YE124
		90×97	0.20	15.6	47	35	24	VF600V272YF097
	3,300	64×187	0.20	13.5	39	29	22	VF600V332YD187
		77×148	0.20	14.9	39	29	24	VF600V332YE148
		90×110	0.20	17.1	39	29	24	VF600V332YF110
	3,900	77×165	0.20	16.5	33	25	24	VF600V392YE165
		90×126	0.20	18.5	33	25	24	VF600V392YF126
	4,700	77×188	0.20	18.3	27	20	24	VF600V472YE188
		90×150	0.20	20.2	27	20	24	VF600V472YF150
5,600	77×228	0.20	20.6	23	17	24	VF600V562YE228	
	90×167	0.20	21.6	23	17	24	VF600V562YF167	
6,800	90×230	0.20	23.4	19	14	24	VF600V682YF230	
650	820	64×94	0.20	6.3	157	118	22	VF650V821YD094
	1,000	64×107	0.20	6.9	129	97	22	VF650V102YD107
	1,200	64×123	0.20	7.8	107	81	22	VF650V122YD123
		77×95	0.20	8.8	107	81	24	VF650V122YE095
	1,500	64×147	0.20	8.6	86	65	22	VF650V152YD147
		77×108	0.20	9.8	86	65	24	VF650V152YE108
		90×97	0.20	11.3	86	65	24	VF650V152YF110
	1,800	77×124	0.20	11.0	71	54	24	VF650V182YE124
		90×110	0.20	12.3	71	54	24	VF650V182YF110
	2,200	77×148	0.20	11.9	58	44	24	VF650V222YE148
90×126		0.20	13.5	58	44	24	VF650V222YF126	

Life time graph

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

