

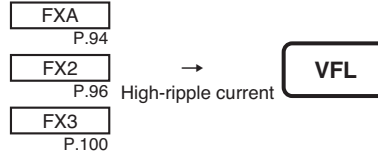
VFL Series

Useful of 8,000 hours at 85°C

- Conform RoHS

Features

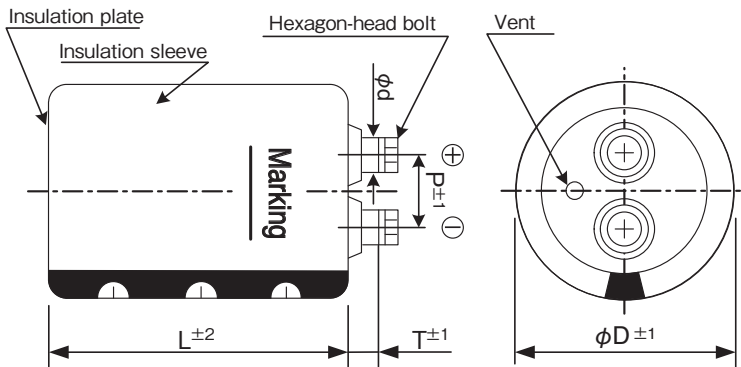
- About 10% ripple current has improved to FX2 series by radiation structure.



Product Specifications

Items	Specifications
Temperature range	-40°C ~ +85°C
Rated voltage	350 ~ 600V.DC
Capacitance tolerance	±20% (20°C, 120Hz)
Leakage current	0.01CV (µA) or 5 mA, 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 5,000 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



(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 (°C)	60	85		
Correction coefficient	1.67	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		

Terminal permissible currents: 60Arms for M5.

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

Product code

(Example) VFL Series 400 V 15,000 µF ±20%

VFL 2G 153 Y F 167

- VFL: Type of series
- 2G: Case height code
- 153: Case dia code
- Y: Type of bracket code
- F: Capacitance code
- 167: Rated voltage code

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.

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

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	VFL2V472YD094
	5,600	64×107	0.20	16.9	18	19	22	VFL2V562YD107
	6,800	64×123	0.20	18.7	15	15	22	VFL2V682YD123
		77×95	0.20	20.9	15	15	24	VFL2V682YE095
	8,200	64×147	0.20	20.2	12	15	22	VFL2V822YD147
		77×108	0.20	22.9	12	15	24	VFL2V822YE108
	10,000	64×187	0.20	22.9	10	15	22	VFL2V103YD187
		77×124	0.20	25.9	10	15	24	VFL2V103YE124
		90×97	0.20	29.3	10	15	24	VFL2V103YF097
	12,000	77×148	0.20	27.8	8	13	24	VFL2V123YE148
		90×126	0.20	31.7	8	13	24	VFL2V123YF126
	15,000	77×188	0.20	31.9	7	10	24	VFL2V153YE188
		90×150	0.20	35.2	7	10	24	VFL2V153YF150
	18,000	77×228	0.20	36.0	7	10	24	VFL2V183YE228
90×167		0.20	37.9	7	10	24	VFL2V183YF167	
	22,000	90×230	0.20	41.1	6	9	24	VFL2V223YF230
400	3,900	64×94	0.20	13.8	26	28	22	VFL2G392YD094
	4,700	64×107	0.20	15.5	21	22	22	VFL2G472YD107
	5,600	64×123	0.20	16.9	18	19	22	VFL2G562YD123
		77×95	0.20	19.0	18	19	24	VFL2G562YE095
	6,800	64×147	0.20	18.4	15	15	22	VFL2G682YD147
		77×108	0.20	20.8	15	15	24	VFL2G682YE108
	8,200	64×187	0.20	20.8	12	15	22	VFL2G822YD187
		77×124	0.20	23.5	12	15	24	VFL2G822YE124
		90×97	0.20	26.6	12	15	24	VFL2G822YF097
	10,000	77×148	0.20	25.4	10	15	24	VFL2G103YE148
		90×126	0.20	28.9	10	15	24	VFL2G103YF126
	12,000	77×188	0.20	28.5	8	13	24	VFL2G123YE188
		90×150	0.20	31.5	8	13	24	VFL2G123YF150
	15,000	77×228	0.20	32.9	8	10	24	VFL2G153YE228
90×167		0.20	34.6	8	10	24	VFL2G153YF167	
18,000	90×230	0.20	37.2	6	9	24	VFL2G183YF230	
450	2,700	64×94	0.20	11.7	38	40	22	VFL2W272YD094
	3,300	64×107	0.20	13.3	30	35	22	VFL2W332YD107
	3,900	64×123	0.20	14.5	27	32	22	VFL2W392YD123
		77×95	0.20	16.2	27	32	24	VFL2W392YE095
	4,700	64×147	0.20	15.6	21	21	22	VFL2W472YD147
		77×108	0.20	17.8	21	21	24	VFL2W472YE108
	5,600	64×164	0.20	17.5	20	20	22	VFL2W562YD164
		77×124	0.20	19.9	20	20	24	VFL2W562YE124
		90×97	0.20	22.5	20	20	24	VFL2W562YF097
	6,800	64×187	0.20	19.4	15	18	22	VFL2W682YD187
		77×148	0.20	21.4	15	18	24	VFL2W682YE148
		90×110	0.20	24.6	15	18	24	VFL2W682YF110
	8,200	77×165	0.20	24.0	14	16	24	VFL2W822YE165
		90×126	0.20	26.8	14	16	24	VFL2W822YF126
	10,000	77×188	0.20	26.7	10	15	24	VFL2W103YE188
		90×150	0.20	29.4	10	15	24	VFL2W103YF150
	12,000	77×228	0.20	30.2	9	12	24	VFL2W123YE228
		90×167	0.20	31.7	9	12	24	VFL2W123YF167
15,000	90×230	0.20	34.8	7	10	24	VFL2W153YF230	

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 δ 20°C, 120Hz	Ripple current (Arms)		ESR(typ.) (m Ω) 20°C, 100Hz	Z max (m Ω) 20°C, 10kHz	ESL(typ.) (nH)	Product name
				85°C, 120Hz	20°C, 100Hz				
500	1,800	64 \times 94	0.20	9.1	53	50	22	VFL2H182YD094	
	2,200	64 \times 107	0.20	10.3	40	35	22	VFL2H222YD107	
	2,700	64 \times 123	0.20	11.5	37	33	22	VFL2H272YD123	
		77 \times 95	0.20	12.9	37	33	24	VFL2H272YE095	
	3,300	64 \times 147	0.20	12.5	36	32	22	VFL2H332YD147	
		77 \times 108	0.20	14.2	36	32	24	VFL2H332YE108	
	3,900	64 \times 164	0.20	13.9	27	29	22	VFL2H392YD164	
		77 \times 124	0.20	15.8	27	29	24	VFL2H392YE124	
		90 \times 97	0.20	17.9	27	29	24	VFL2H392YF097	
	4,700	64 \times 187	0.20	15.4	25	25	22	VFL2H472YD187	
		77 \times 148	0.20	17.0	25	25	24	VFL2H472YE148	
		90 \times 110	0.20	19.5	25	25	24	VFL2H472YF110	
	5,600	77 \times 165	0.20	18.9	23	21	24	VFL2H562YE165	
		90 \times 126	0.20	21.1	23	21	24	VFL2H562YF126	
	6,800	77 \times 188	0.20	20.9	20	18	24	VFL2H682YE188	
90 \times 150		0.20	23.1	20	18	24	VFL2H682YF150		
8,200	90 \times 167	0.20	25.0	17	16	24	VFL2H822YF167		
10,000	90 \times 190	0.20	27.8	14	12	24	VFL2H103YF190		
12,000	90 \times 230	0.20	29.6	12	10	24	VFL2H123YF230		
550	1,200	64 \times 94	0.20	7.3	93	100	22	VFL2L122YD094	
	1,500	64 \times 107	0.20	8.3	74	80	22	VFL2L152YD107	
	1,800	64 \times 123	0.20	9.1	61	50	22	VFL2L182YD123	
		77 \times 95	0.20	10.3	61	50	24	VFL2L182YE095	
	2,200	64 \times 147	0.20	10.0	53	50	22	VFL2L222YD147	
		77 \times 108	0.20	11.3	53	50	24	VFL2L222YE108	
	2,700	64 \times 164	0.20	11.3	40	35	22	VFL2L272YD164	
		77 \times 124	0.20	12.8	40	35	24	VFL2L272YE124	
		90 \times 97	0.20	14.5	40	35	24	VFL2L272YF097	
	3,300	64 \times 187	0.20	12.6	38	32	22	VFL2L332YD187	
		77 \times 148	0.20	13.9	38	32	24	VFL2L332YE148	
		90 \times 110	0.20	16.0	38	32	24	VFL2L332YF110	
	3,900	77 \times 165	0.20	15.4	30	27	24	VFL2L392YE165	
		90 \times 126	0.20	17.2	30	27	24	VFL2L392YF126	
	4,700	77 \times 188	0.20	17.0	25	20	24	VFL2L472YE188	
90 \times 150		0.20	18.8	25	20	24	VFL2L472YF150		
5,600	90 \times 167	0.20	20.2	20	17	24	VFL2L562YF167		
6,800	90 \times 190	0.20	22.4	17	17	24	VFL2L682YF190		
8,200	90 \times 230	0.20	23.9	14	15	24	VFL2L822YF230		
600	1,200	64 \times 94	0.20	7.0	122	125	22	VFL600V122YD094	
	1,500	64 \times 123	0.20	8.0	111	114	22	VFL600V152YD123	
		77 \times 95	0.20	9.0	111	114	24	VFL600V152YE095	
	1,800	64 \times 147	0.20	8.6	99	102	22	VFL600V182YD147	
		77 \times 108	0.20	9.8	99	102	24	VFL600V182YE108	
	2,200	64 \times 164	0.20	9.8	85	87	22	VFL600V222YD164	
		77 \times 124	0.20	11.1	85	87	24	VFL600V222YE124	
		90 \times 97	0.20	12.6	85	87	24	VFL600V222YF097	
	2,700	64 \times 187	0.20	10.9	66	68	22	VFL600V272YD187	
		90 \times 110	0.20	13.8	66	68	24	VFL600V272YF110	
	3,300	77 \times 148	0.20	13.3	44	45	24	VFL600V332YE148	
		90 \times 126	0.20	15.2	44	45	24	VFL600V332YF126	
	3,900	77 \times 188	0.20	14.9	33	25	24	VFL600V392YE188	
		90 \times 150	0.20	16.4	33	25	24	VFL600V392YF150	
	4,700	77 \times 228	0.20	16.9	27	20	24	VFL600V472YE228	
90 \times 167		0.20	17.7	27	20	24	VFL600V472YF167		
5,600	90 \times 190	0.20	19.5	23	17	24	VFL600V562YF190		
6,800	90 \times 230	0.20	20.9	19	14	24	VFL600V682YF230		

ALUMINUM ELECTROLYTIC CAPACITORS

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

