

SCREW TERMINAL TYPE ALUMINUM ELECTROLYTIC CAPACITORS

UPGRADE!

VFL Series

Useful of 8,000 hours at 85°C

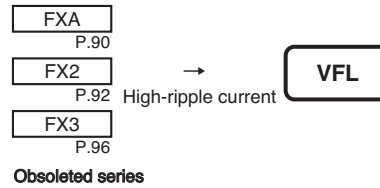
Standard



- Conform RoHS

Features

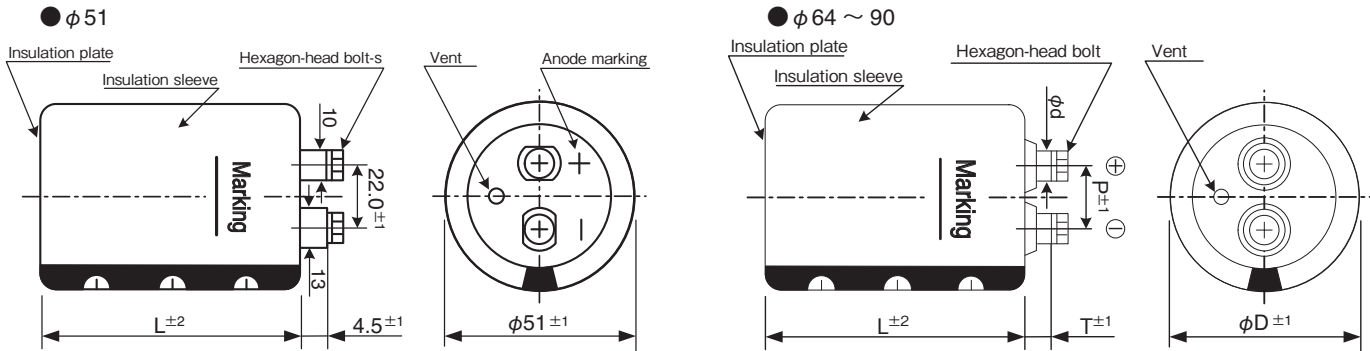
- About 10% ripple current has improved to FX2 series by radiation structure.



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 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 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



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		

(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	8.0	11.0	M5×10	Phenol resin
90	31.5	7.0	11.0	M5×10	Phenol resin

Terminal permissible currents: 60Arms for M5.
Please use this type of capacitor at a terminal current below the permissible.
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) 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

ALUMINUM ELECTROLYTIC CAPACITORS

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VFL 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	51×75	0.20	7.4	55	58	21	VFL2V182YC075
	2,200	51×96	0.20	8.5	45	47	21	VFL2V222YC096
	2,700	51×109	0.20	9.8	37	39	21	VFL2V272YC109
	3,300	51×125	0.20	11.2	30	32	21	VFL2V332YC125
	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
	12,000	90×97	0.20	29.3	10	15	24	VFL2V103YF097
		77×148	0.20	27.8	8	13	24	VFL2V123YE148
	15,000	90×126	0.20	31.7	8	13	24	VFL2V123YF126
		77×188	0.20	31.9	7	10	24	VFL2V153YE188
18,000	90×150	0.20	35.2	7	10	24	VFL2V153YF150	
	77×228	0.20	36.0	7	10	24	VFL2V183YE228	
22,000	90×167	0.20	37.9	7	10	24	VFL2V183YF167	
	90×230	0.20	41.1	6	9	24	VFL2V223YF230	
27,000	90×268	0.20	43.0	5	7	24	VFL2V273YF268	
400	1,500	51×75	0.20	6.8	68	73	21	VFL2G152YC075
	1,800	51×96	0.20	7.9	57	61	21	VFL2G182YC096
	2,200	51×109	0.20	9.1	47	50	21	VFL2G222YC109
	2,700	51×125	0.20	10.2	38	41	21	VFL2G272YC125
	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
	10,000	90×97	0.20	26.6	12	15	24	VFL2G822YF097
		77×148	0.20	25.4	10	15	24	VFL2G103YE148
	12,000	90×126	0.20	28.9	10	15	24	VFL2G103YF126
		77×188	0.20	28.5	8	13	24	VFL2G123YE188
15,000	90×150	0.20	31.5	8	13	24	VFL2G123YF150	
	77×228	0.20	32.9	8	10	24	VFL2G153YE228	
18,000	90×167	0.20	34.6	8	10	24	VFL2G153YF167	
	90×230	0.20	37.2	6	9	24	VFL2G183YF230	
22,000	90×268	0.20	38.9	5	7	24	VFL2G223YF268	
450	1,200	51×75	0.20	6.3	86	90	21	VFL2W122YC075
	1,500	51×96	0.20	7.5	69	72	21	VFL2W152YC096
	1,800	51×109	0.20	8.4	57	60	21	VFL2W182YC109
	2,200	51×125	0.20	9.4	47	50	21	VFL2W222YC125
	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	
18,000	90×268	0.20	36.0	6	8	24	VFL2W183YF268	

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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	820	51×75	0.20	4.7	117	110	21	VFL2H821YC075
	1,000	51×96	0.20	5.6	96	90	21	VFL2H102YC096
	1,200	51×109	0.20	6.3	80	75	21	VFL2H122YC109
	1,500	51×125	0.20	7.2	64	60	21	VFL2H152YC125
	1,800	64×94	0.20	9.1	53	50	22	VFL2H182YD094
	2,200	64×107	0.20	10.3	40	35	22	VFL2H222YD107
	2,700	64×123	0.20	11.5	37	33	22	VFL2H272YD123
		77×95	0.20	12.9	37	33	24	VFL2H272YE095
	3,300	64×147	0.20	12.5	36	32	22	VFL2H332YD147
		77×108	0.20	14.2	36	32	24	VFL2H332YE108
	3,900	64×164	0.20	13.9	27	29	22	VFL2H392YD164
		77×124	0.20	15.8	27	29	24	VFL2H392YE124
		90×97	0.20	17.9	27	29	24	VFL2H392YF097
	4,700	64×187	0.20	15.4	25	25	22	VFL2H472YD187
		77×148	0.20	17.0	25	25	24	VFL2H472YE148
		90×110	0.20	19.5	25	25	24	VFL2H472YF110
	5,600	77×165	0.20	18.9	23	21	24	VFL2H562YE165
		90×126	0.20	21.1	23	21	24	VFL2H562YF126
6,800	77×188	0.20	20.9	20	18	24	VFL2H682YE188	
	90×150	0.20	23.1	20	18	24	VFL2H682YF150	
8,200	90×167	0.20	25.0	17	16	24	VFL2H822YF167	
10,000	90×190	0.20	27.8	14	12	24	VFL2H103YF190	
12,000	90×230	0.20	29.6	12	10	24	VFL2H123YF230	
15,000	90×268	0.20	31.4	10	8	24	VFL2H153YF268	
550	560	51×75	0.20	3.9	200	215	21	VFL2L561YC075
	680	51×96	0.20	4.5	165	177	21	VFL2L681YC096
	820	51×109	0.20	5.1	137	147	21	VFL2L821YC109
	1,000	51×125	0.20	5.9	112	120	21	VFL2L102YC125
	1,200	64×94	0.20	7.3	93	100	22	VFL2L122YD094
	1,500	64×107	0.20	8.3	74	80	22	VFL2L152YD107
	1,800	64×123	0.20	9.1	61	50	22	VFL2L182YD123
		77×95	0.20	10.3	61	50	24	VFL2L182YE095
	2,200	64×147	0.20	10.0	53	50	22	VFL2L222YD147
		77×108	0.20	11.3	53	50	24	VFL2L222YE108
	2,700	64×164	0.20	11.3	40	35	22	VFL2L272YD164
		77×124	0.20	12.8	40	35	24	VFL2L272YE124
		90×97	0.20	14.5	40	35	24	VFL2L272YF097
	3,300	64×187	0.20	12.6	38	32	22	VFL2L332YD187
		77×148	0.20	13.9	38	32	24	VFL2L332YE148
		90×110	0.20	16.0	38	32	24	VFL2L332YF110
	3,900	77×165	0.20	15.4	30	27	24	VFL2L392YE165
		90×126	0.20	17.2	30	27	24	VFL2L392YF126
4,700	77×188	0.20	17.0	25	20	24	VFL2L472YE188	
	90×150	0.20	18.8	25	20	24	VFL2L472YF150	
5,600	90×167	0.20	20.2	20	17	24	VFL2L562YF167	
6,800	90×190	0.20	22.4	17	17	24	VFL2L682YF190	
8,200	90×230	0.20	23.9	14	15	24	VFL2L822YF230	
10,000	90×268	0.20	25.0	12	12	24	VFL2L103YF268	
600	470	51×75	0.20	2.6	312	320	21	VFL600V471YC075
	560	51×96	0.20	3.0	262	268	21	VFL600V561YC096
	680	51×109	0.20	3.4	216	221	21	VFL600V681YC109
	820	51×125	0.20	3.9	179	183	21	VFL600V821YC125
	1,200	64×94	0.20	7.0	122	125	22	VFL600V122YD094
	1,500	64×123	0.20	8.0	111	114	22	VFL600V152YD123
		77×95	0.20	9.0	111	114	24	VFL600V152YE095
	1,800	64×147	0.20	8.6	99	102	22	VFL600V182YD147
		77×108	0.20	9.8	99	102	24	VFL600V182YE108
	2,200	64×164	0.20	9.8	85	87	22	VFL600V222YD164
		77×124	0.20	11.1	85	87	24	VFL600V222YE124
		90×97	0.20	12.6	85	87	24	VFL600V222YF097
	2,700	64×187	0.20	10.9	66	68	22	VFL600V272YD187
		90×110	0.20	13.8	66	68	24	VFL600V272YF110
	3,300	77×148	0.20	13.3	44	45	24	VFL600V332YE148
		90×126	0.20	15.2	44	45	24	VFL600V332YF126
	3,900	77×188	0.20	14.9	33	25	24	VFL600V392YE188
		90×150	0.20	16.4	33	25	24	VFL600V392YF150
4,700	77×228	0.20	16.9	27	20	24	VFL600V472YE228	
	90×167	0.20	17.7	27	20	24	VFL600V472YF167	
5,600	90×190	0.20	19.5	23	17	24	VFL600V562YF190	
6,800	90×230	0.20	20.9	19	14	24	VFL600V682YF230	

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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

