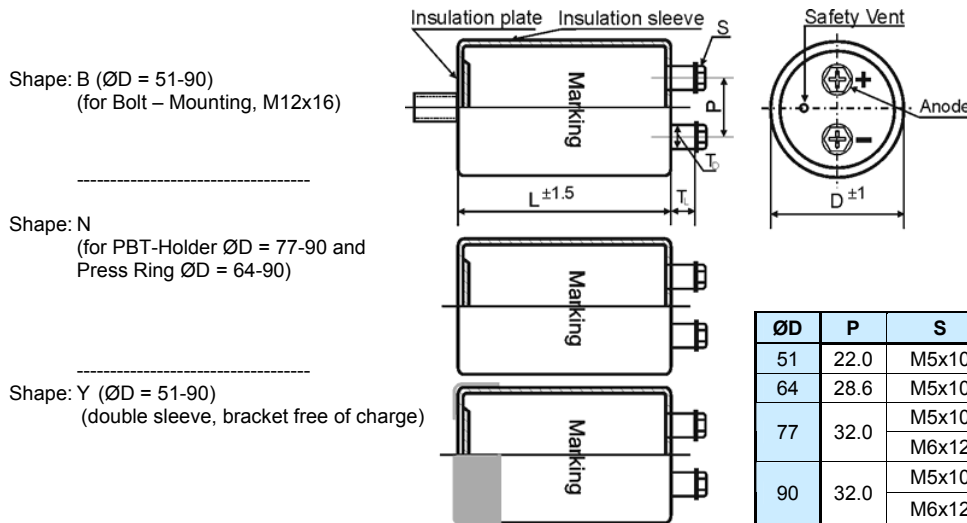


► **Specifications /**

Items	Characteristics
Temperature range	-40°C ~ + 85°C
Rated voltage V_r	350 VDC - 450 VDC
Surge voltage	Repetitive max. 30 sec per 6 Minutes
Leakage current max. I_L (20°C, 5 min)	$0.01 \cdot C \cdot V_r$ [μ A] or 3 mA, which is smaller.
Capacitance tolerance	+/- 20%
Useful life	12000 h at 85°C
Field failure rate	$0.5 \text{ FIT} = 0.5 \cdot 10^{-9}$ Failures/hour
Failure rate	Less than 0.1% within the useful life



► **Outline Drawing /**



ØD	P	S	T _L	T _D	Cap material
51	22.0	M5x10	4.5	10	PPS
64	28.6	M5x10	4.5	10	PPS
77	32.0	M5x10	4.5	10	PPS
		M6x12	5.0	16	PPS
90	32.0	M5x10	4.0	10	PPS
		M6x12	4.0	16	PPS

Size in mm. First listed terminal is standard.

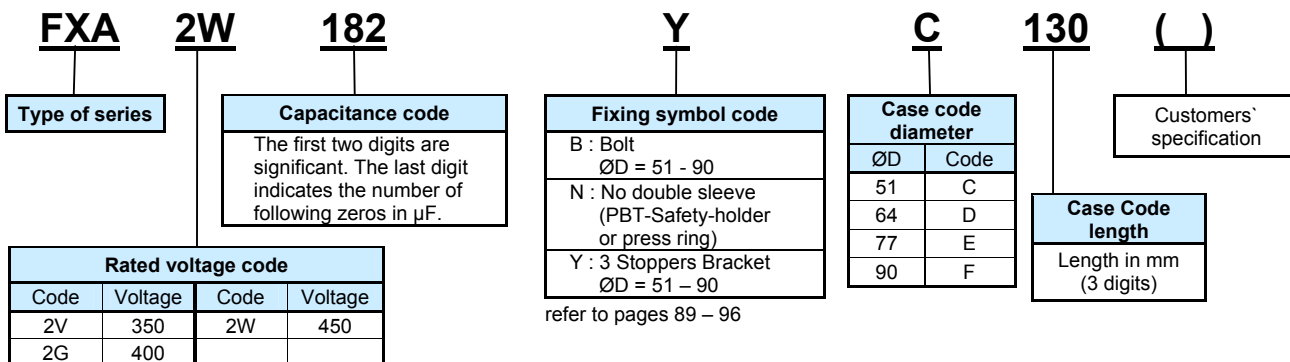
► **Ripple Current Multiplier /**

Frequency [Hz]	50/60	120	300	1k	≥ 10k
multiplier	0.80	1.00	1.18	1.34	1.45

Forced cooling [m/sec]	v < 1.0	v ≥ 1.0
multiplier	1.0	1.1

► **Product Code /**

Example: 1800µF 450V D=51mm L=130mm with Y-Bracket



Rated Voltage Code (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 40°C/120Hz [A RMS]	Ripple Current at 85°C/120Hz I_r [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Zmax at 20°C/10kHz [m Ω]	ESL (typ) [nH]	DxL [mm]	Product Code
350 2V (400)	1 500	14.7	7.0	53	55	17	51x75	FXA2V152□C075
	1 800	17.8	8.5	44	44	17	51x96	FXA2V182□C096
	2 200	19.7	9.4	28	28	17	51x96	FXA2V222□C096
	2 700	24.6	11.7	27	27	17	51x130	FXA2V272□C130
	3 300	27.3	13.0	21	22	17	51x130	FXA2V332□C130
	3 900	30.9	14.7	18	20	18	64x115	FXA2V392□D115
	4 700	35.7	17.0	16	20	18	64x130	FXA2V472□D130
	5 600	39.3	18.7	14	20	20	77x115	FXA2V562□E115
		41.8	19.9	14	18	18	64x155	FXA2V562□D155
	6 800	45.4	21.6	14	18	20	77x130	FXA2V682□E130
		51.0	24.3	12	15	18	64x195	FXA2V682□D195
	8 200	53.3	25.4	12	15	20	77x155	FXA2V822□E155
	10 000	62.6	29.8	10	15	20	90x157	FXA2V103□F157
12 000	68.7	32.7	8	13	20	90x157	FXA2V123□F157	
15 000	83.6	39.8	6	10	20	90x196	FXA2V153□F196	
18 000	99.3	47.3	5	10	20	90x236	FXA2V183□F236	
400 2G (450)	1 000	12.2	5.8	102	105	17	51x75	FXA2G102□C075
		12.6	6.0	102	105	17	51x83	FXA2G102□C083
		13.8	6.6	102	105	17	51x105	FXA2G102□C105
	1 200	13.2	6.3	69	63	17	51x75	FXA2G122□C075
		16.2	7.7	50	55	17	51x96	FXA2G152□C096
	1 500	16.6	7.9	68	70	17	51x105	FXA2G152□C105
		16.7	7.9	68	70	18	64x105	FXA2G152□D105
		17.8	8.5	40	40	17	51x96	FXA2G182□C096
	2 200	22.3	10.6	28	28	17	51x130	FXA2G222□C130
		22.3	10.6	46	28	18	64x105	FXA2G222□D105
	2 700	23.9	11.4	24	25	18	64x96	FXA2G272□D096
	3 300	28.4	13.5	30	32	20	77x96	FXA2G332□E096
		28.6	13.6	21	22	18	64x115	FXA2G332□D115
		29.0	13.8	30	22	20	77x103	FXA2G332□E103
	3 900	32.6	15.5	18	20	18	64x130	FXA2G392□D130
	4 700	34.6	16.5	21	18	20	77x103	FXA2G472□E103
		35.9	17.1	14	18	20	77x115	FXA2G472□E115
		37.6	17.9	21	22	20	77x130	FXA2G472□E130
		38.4	18.3	16	20	18	64x155	FXA2G472□D155
		40.3	19.2	21	22	20	77x143	FXA2G472□E143
	5 600	41.2	19.6	12	15	20	77x130	FXA2G562□E130
		46.2	22.0	14	20	18	64x195	FXA2G562□D195
	6 800	48.7	23.2	14	18	20	77x155	FXA2G682□E155
8 200	55.6	26.5	12	15	20	77x171	FXA2G822□E171	
	56.7	27.0	12	15	20	90x157	FXA2G822□F157	
10 000	62.6	29.8	10	15	20	90x157	FXA2G103□F157	
12 000	74.8	35.6	8	13	20	90x196	FXA2G123□F196	
15 000	90.5	43.1	6	10	20	90x236	FXA2G153□F236	
450 2W (500)	1 000	12.2	5.8	95	100	17	51x75	FXA2W102□C075
	1 200	14.5	6.9	70	80	17	51x96	FXA2W122□C096
	1 500	17.4	8.3	55	60	17	51x115	FXA2W152□C115
	1 800	20.0	9.5	46	47	17	51x130	FXA2W182□C130
	2 200	21.8	10.4	42	45	18	64x96	FXA2W222□D096
		25.6	12.2	38	40	20	77x96	FXA2W272□E096
		25.8	12.3	38	40	18	64x115	FXA2W272□D115
	2 700	26.7	12.7	38	40	20	77x107	FXA2W272□E107
		28.4	13.5	30	35	20	77x96	FXA2W332□E096
		29.4	14.0	30	35	20	77x107	FXA2W332□E107
3 300	30.0	14.3	30	35	18	64x130	FXA2W332□D130	

Rated Voltage Code (Surge Voltage) V_r [V DC]	Capacitance C_r [μ F]	Ripple Current at 40°C/120Hz [A RMS]	Ripple Current at 85°C/120Hz I_r [A RMS]	ESR (typ) at 20°C/100Hz [m Ω]	Zmax at 20°C/10kHz [m Ω]	ESL (typ) [nH]	DxL [mm]	Product Code
		30.2	14.4	30	35	20	77x115	FXA2W332□E115
450 2W (500)	3 900	32.8	15.6	24	27	20	77x115	FXA2W392□E115
		35.1	16.7	27	32	18	64x155	FXA2W392□D155
		37.6	17.9	22	23	20	77x130	FXA2W472□E130
	4 700	39.1	18.6	21	21	20	77x143	FXA2W472□E143
		41.8	19.9	21	21	20	90x145	FXA2W472□F145
		42.2	20.1	20	21	18	64x195	FXA2W472□D195
		43.0	20.5	20	20	20	77x144	FXA2W562□E144
	5 600	44.1	21.0	20	20	20	77x155	FXA2W562□E155
		51.7	24.6	18	18	20	90x157	FXA2W682□F157
	6 800	56.7	27.0	15	17	20	90x157	FXA2W822□F157
	8 200	68.2	32.5	12	15	20	90x196	FXA2W103□F196
	10 000	81.1	38.6	9	12	20	90x236	FXA2W123□F236
	12 000							

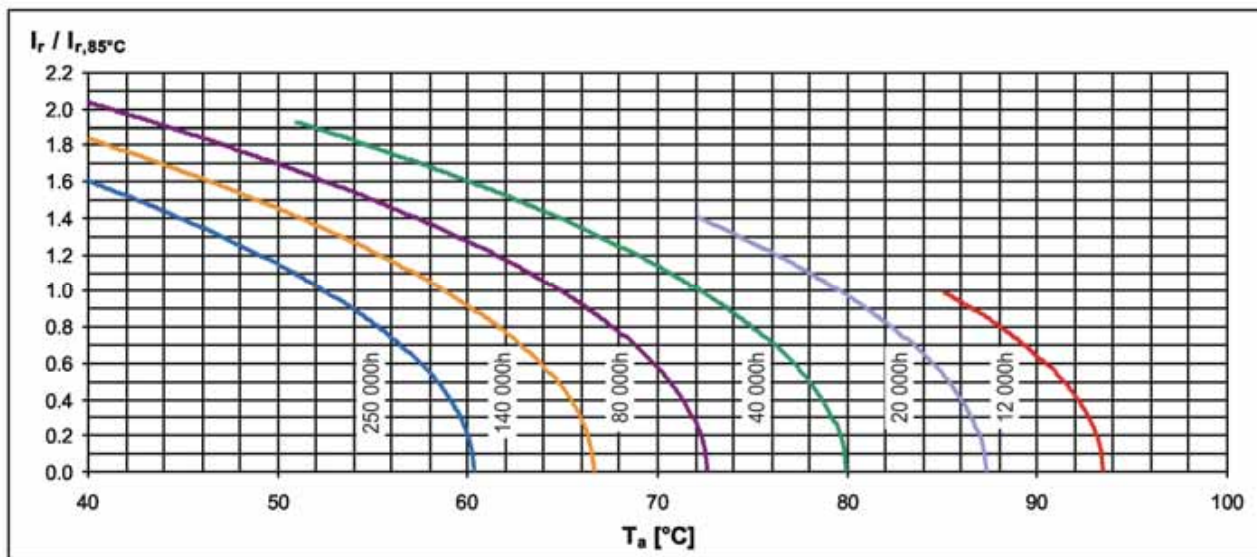
► **Life Time Table /**

FXA I _r at 85°C	Useful life as function of ambient temperature and ripple current											
	x 1.0	x 1.1	x 1.2	x 1.3	x 1.4	x 1.5	x 1.6	x 1.7	x 1.8	x 1.9	x 2.0	x 2.1
T _a = 40°C	250	250	250	250	250	250	250	199	155	118	89	66
T _a = 45°C	250	250	250	250	247	200	160	126	98	75	56	
T _a = 50°C	250	250	228	190	156	127	101	80	62	47		
T _a = 55°C	198	170	144	120	99	80	64	50	39			
T _a = 60°C	125	108	91	76	63	51	41	32				
T _a = 65°C	79	68	58	48	40	32						
T _a = 70°C	49	43	36	30	25							
T _a = 75°C	31	27	23	19								
T _a = 80°C	19	17										
T _a = 85°C	12											

khrs Max. value limited to 250 000 hours.

► **Life Time Graph /**

Useful life depending on ambient temperature T_a and ripple current operating conditions I_r versus rated ripple current at the upper category temperature I_{r,85°C,120Hz}



► **Life Time Tests and Requirements /**

Life time test	Reference	Test procedure	Life time criteria
Endurance test	JIS-C-5101-4 JIS-C-5102 IEC 60384-4	T _a = 85°C; V _r , I _r applied 8000 hours	ΔC/C < 15% Tanδ < 175% (of initial value) I _L = spec. value
Useful life	JIS-C-5104-4 IEC 60384-4	T _a = 85°C; V _r , I _r applied 12000 hours	ΔC/C < 20% Tanδ < 200% (of initial value) I _L = spec. value