

# 鋁電解電容器

ALUMINUM ELECTROLYTIC CAPACITOR(CD11X WP)

## WP 特性 FEATURE

- \* 壽命: 85°C 2000小時  
Life time: 85°C 2000 hours
- \* 適用於消費電子產品及工業電子產品  
For general consumer and industrial electronic products application



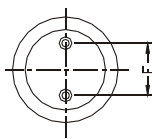
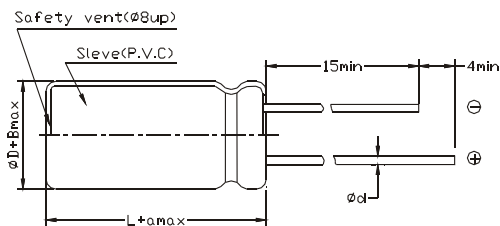
## 特性表 SPECIFICATIONS

項目 Item	主要特性 Performance Characteristics										
額定工作電壓範圍 Rated Voltage Range	6.3V.DC ~ 100V.DC	160V.DC ~ 450V.DC									
使用溫度範圍 Operating Temperature Range	-40°C ~ +85°C	-25°C +85°C									
標稱靜電容量範圍 Nominal Capacitance Range	0.1 µF ~ 22000 µF	0.47 µF ~ 470 µF									
靜電容量允許偏差 Capacitance Tolerance	± 20%(M, +20°C, 120Hz)										
漏電流 Leakage Current	額定工作電壓 V Rated working voltage	6.3 ~ 100	160 ~ 450								
	漏電流 Leakage Current	施加額定電壓2分鐘: I ≤ 0.01CV 或 3 µA (取較大者) 20°C After application of rated voltage for 2 minutes: I ≤ 0.01CV or 3 µA (Whichever is greater) 20°C 施加額定電壓2分鐘: I ≤ 0.03CV µA (取較大者) 20°C After application of rated voltage for 2 minutes: I ≤ 0.03CV µA (Whichever is greater) 20°C									
		C: 標稱靜電容量 (µF); Nominal Capacitance in µF;	V: 額定工作電壓 (V) Rated working Voltage in V								
損耗角正切值 (tan δ) Dissipation Factor	額定工作電壓 (V) Rated working voltage	6.3	10	16	25	35	50	63	100	160~450	
	tan δ (MAX) (20°C, 120Hz)	0.24	0.20	0.16	0.14	0.12	0.10	0.10	0.08	0.15	
標稱靜電容量大於1000 µF者, 其標稱靜電容量每增加1000 µF, 損耗角正切值增加0.02 When capacitance is over 1000 µF, tan δ shall be added 0.02 with increase of every 1000 µF											
溫度特性 Temperature Stability	額定工作電壓 (V) Rated working voltage	6.3	10	16	25	35	50	63	100	160~250	350~450
	阻抗比 (120Hz) Impedance Ratio	Z-25°C/Z+20°C		4	3	2			3	5	
		Z-40°C/Z+20°C		8	6	4	4	3	—————		
高溫負荷特性 Load Life	在+85°C環境中施加工作電壓和最大允許紋波電流2000小時後, 電容器的性能符合下表要求: After application of rated working voltage and maximum permissible ripple current specified of +85°C for 2000 hours at +85°C Capacitors meet the characteristics requirement measured at +20°C listed below:										
	靜電容量變化 Capacitance Change	初始值的 ± 20% 以內 Within ± 20% of the initial measured value									
	漏電流 Leakage Current	不大於初期規定值 Less than the initial specified value									
損耗角正切值 tan δ	不大於初期規定值的 200% Less than 200% of the initial specified value										
高溫貯存特性 Shelf Life	在+85°C環境中無負荷放置1000小時後, 電容器的性能符合高溫負荷特性中所列的規定值 After Leaving capacitor under no load at +85°C for 1000 hours, Capacitors meet the characteristics listed above.										

\* 紋波倍乘因子 MULTIPLIER FOR RIPPLE CURRENT  
 \* 頻率因子 Frequency coefficient

Cap (μF) \ Freq(Hz)	50(60)	100(120)	1K	≥10K
0.1~1.5	0.50	1.00	1.20	1.50
2.2~6.8	0.65	1.00	1.30	1.50
10~68	0.80	1.00	1.15	1.20
100~1000	0.80	1.00	1.10	1.15
1500~22000	0.80	1.00	1.00	1.15

## ● 外形圖及尺寸表 CASE SIZE TABLE



β	0.5			1.0				
φD	5	6.3	8	10	12.5	16	18	22
F±0.5	2.0	2.5	3.5	5		7.5		10
φd±0.1	0.5			0.6		0.8		
α	L<16;1.5				L≥16;2.0			

## ■ WP 扁平形尺寸、額定電壓及標稱容量 DIMENSIONS, RATED VOLTAGE AND CAPACITANCE

WV (V) \ Cap (μF)	6.3(LA)		10(LB)		16(LC)		25(LD)		35(LE)		50(LF)	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
470(471)	8×9	380									12.5×16	700
680(681)							12.5×16	760	12.5×16	760	16×16	810
1000(102)							12.5×16	940	16×16	950	16×20	1050
1500(152)							16×16	1100	16×20	1100	18×20	1400
2200(222)	12.5×16	1080	12.5×16	1080	16×16	1100	16×20	1400	18×20	1500	18×25	1650
3300(332)	12.5×16	1100	16×16	1120	16×20	1500	18×20	1550	18×25	1850		
4700(472)	16×20	1200	16×20	1550	18×20	1600	18×25	2000				
6800(682)	16×20	1550	18×20	1650	18×25	2050						
10000(103)	18×20	1700	18×25	2150								

WV (V) \ Cap (μF)	160(MB)		200(MC)		250(MD)		350(MF)		400(VA)		450(VB)	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
10(100)							12.5×16	100	12.5×16	100	16×16	130
22(220)			12.5×16	150	12.5×16	156	16×16	220	16×20	226	16×20	208
33(330)	12.5×16	175	12.5×16	175	16×16	270	16×20	270	16×20	280	18×20	260
47(470)	12.5×16	220	16×16	313	16×20	330	16×20	330	18×20	350	18×25	330
68(680)	16×16	350	16×20	380	16×20	410	18×25	450	18×25	450		
100(101)	16×20	478	16×20	478	18×20	506						
150(151)	18×20	590	18×25	670	18×25	670						
220(221)	18×25	770										

→ 最大允許紋波電流 Max allowable ripple current (mA r.m.s. /85°C.120Hz)  
 → 外形尺寸 Case Size D × L(mm)

## 鋁電解電容器

ALUMINUM ELECTROLYTIC CAPACITOR(CD110X WP)

### ■ WP尺寸、額定電壓及標稱容量 DIMENSIONS, RATED VOLTAGE AND CAPACITANCE

WV(V) CAP (UF)	6.3(LA)		10(LB)		16(LC)		25(LD)		35(LE)		50(LF)		63(LG)		100(MA)	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
0.1(R10)											5X11	1.1				
0.15(R15)											5X11	1.5				
0.22(R22)											5X11	2.5				
0.33(R33)											5X11	4				
0.47(R47)											5X11	7			5X11	10
0.68(R68)											5X11	10			5X11	16
1(1R0)											5X11	13			5X11	21
1.5(1R5)											5X11	17			5X11	27
2.2(2R2)											5X11	23			5X11	35
3.3(3R3)											5X11	35			5X11	45
4.7(4R7)											5X11	41			5X11	50
6.8(6R8)											5X11	46			5X11	57
10(100)					5X11	39	5X11	44	5X11	53	5X11	60	5X11	70	(5X11) 6.3X11	60 75
15(150)					5X11	51	5X11	57	5X11	69	5X11	73	(5X11) 6.3X11	(73) 84	6.3X11	103
22(220)					5X11	67	5X11	75	5X11	90	(5X11) 6.3X11	(95) 110	6.3X11	110	6.3X11 8X12	(110) 135
33(330)					5X11	88	5X11	98	5X11	110	6.3X11	140	6.3X11	140	8X12	185
47(470)			5X11	80	5X11	115	5X11	120	5X11	135	6.3X11 (8X12)	160 (170)	(6.3X11) 8X12	(190) 207	10X12	230
68(680)			5X11	100	5X11	134	5X11	142	6.3X11	165	8X12	207	8X12	223	10X16	292
100(101)	5X11	135	5X11	140	(5X11) 6.3X11	(142) 175	(5X11) 6.3X11	(185) 215	6.3X11	215	8X12	270	(8X12) 10X12	(270) 290	10X20	(380) 380
150(151)	5X11	170	5X11	180	6.3X11	215	8X12	238	8X12	285	10X12	334	10X16	376	12.5X20	469
220(221)	5X11	220	(5X11) 6.3X11	(230) 280	6.3X11 (8X12)	280 (310)	(6.3X11) 8X12	(310) 360	8X12	370	(10X12) 10X16	(435) 500	(10X16) 10X20	(490) 590	12.5X25	(610) 629
330(331)	6.3X11	280	6.3X11	310	8X12	360	(8X12) 10X12	(410) 460	(10X12) 10X16	500 600	(10X16) 10X20	(550) 590	10X20 12.5X20	680 800	(12.5X25) 16X25	(760) 880
470(471)	6.3X11	360	(6.3X11) 8X12	(400) 450	8X12 (10X12)	460 (460)	10X12	550	10X16	680	(10X20) 12.5X20	(760) 800	12.5X20 12.5X25	810 880	(16X25) 16X30	(950) 950
680(681)	8X12	450	10X12	520	10X12	615	10X20	669	12.5X20	907	12.5X25	1038	16X25	1038	18X35	1038
1000(102)	8X12	590	10X12 (10X16)	660 (750)	10X16	800	(10X20) 12.5X20	(970) 1050	12.5X20	1180	12.5X25 16X25	(1350) 1440	16X25	1350	18X40	(1350) 1350
1500(152)	10X16	750	10X20	870	12.5X20	1015	12.5X20	1207	12.5X25	1392	16X25	1523	18X30	1769		
2200(222)	10X16	920	10X20	1090	12.5X20	1320	12.5X25 (16X25)	1570 (1570)	16X25	1810	(16X30) 16X35	(1980) 2110	18X35	2300		
3300(332)	10X20	1200	12.5X20	1440	12.5X25	1670	16X25 16X30	2000	16X35	2300	18X35	2540				
4700(472)	12.5X20	1550	12.5X25	1800	16X25 (16X30)	2120 (2120)	16X30	2440	18X35	2740	22X40	2880				
6800(682)	12.5X25	1920	16X25	2250	16X30	2540	18X35	2900								
10000(103)	16X25	2370	16X35	2710	18X35	2950										
15000(153)	16X35	2880	18X35	3110												
22000(223)	18X40	3350														

WV(V) Cap ( $\mu$ F)	160(MB)		200(MC)		250(MD)		350(MF)		400(VA)		450(VB)	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
0.47(R47)					6.3X11	8	6.3X11	8	6.3X11	8		
1(1R0)	(5X11) 6.3x11	(7) 15	6.3X11	16	6.3X11	16	(6.3X11) 8X12	16 20	(6.3X11) 8X12	(16) 20	8X12	16
1.5(1R5)	6.3X11	18	6.3X11	20	6.3X11	21	8X12	22	8X12	23	8X12	24
2.2(2R2)	6.3X11	23	6.3X11	25	(6.3X11) 8X12	30 36	8X12	31	(8X12) 10X12	(27) 31	(8X12) 10X12	(25) 29
3.3(3R3)	6.3X11	31	6.3X11	36	8X12	45	10X12	45	10X12	43	(10X12) 10X16	(40) 40
4.7(4R7)	(6.3X11) 8X12	(45) 50	8X12	51	8X12	54	(10X12) 10x16	(48) 56	(10X12) 10X16	(47) 56	(10X16) 10X20	(46) 56
6.8(6R8)	8X12	63	10X12	65	10X12	69	10X16	76	(10X16) 10X20	(60) 69	10X20	64
10(100)	(8X12) 10X12	(83) 90	(10X12) 10x16	(85) 96	10X16 10X20	90 100	10X20	100	(10X20) 12.5X20	(80) 90	12.5X20	84
15(150)	10X16	102	10X16	103	10X20	110	12.5X20	142	12.5X20	128	12.5X25	107
22(220)	10X16	133	10X20	135	(10x20) 12.5X20	(130) 150	(12.5X20) 12.5x25	(145) 185	12.5X25	180	(12.5X25) 16X25	(110) 140
33(330)	10X20	180	12.5X20	205	12.5X20	205	16X25	230	16X25	230	(16X25) 16X30	(180) 180
47(470)	12.5X20	230	12.5X20	230	(12.5x20) 12.5X25	(235) 260	(16x25) 16X30	(250) 280	16X25 (16X30)	260 (280)	(16X30) 18X30	200 220
68(680)	12.5X25	296	12.5X25	307	16X25	330	18X30	340	16X30	350		
100(101)	12.5x25 (16X25)	385 (410)	16X25	400	16X30	450	18X40	420	18X40	420		
150(151)	16X30	496	18X25	496								
220(221)	16X35	645	18X30	680								
330(331)	18x35	760	18X35	760								
470(471)	18x40	780	22X40	810								

→ 最大允許紋波電流 Max allowable ripple current (mA r.m.s./85°C 120Hz)

→ 外形尺寸Case Size D × L(mm)

\*括號內尺寸為非常規品，需特別做

The size in parenthesis is not normal, must be produced specially.