

# CD110/CD110X SERIES

## ALUMINUM ELECTROLYTIC CAPACITORS

- Load life of 2000 hours at 85°C
- Small size, High stability and reliability
- For general consumer electronic products application



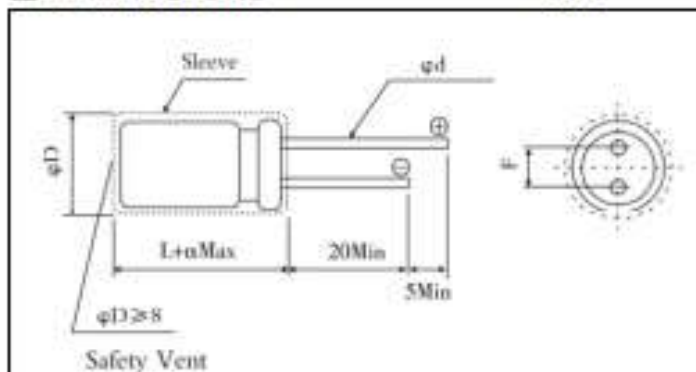
### SPECIFICATIONS

Item	Characteristics																																											
Operating Temperature Range(°C)	-40~+85																																											
Rated Voltage Range (V)	6.3~450																																											
Nominal capacitance range (μF)	0.1~22000																																											
Capacitance Tolerance(20°C,120Hz)	±20%																																											
Leakage current (μA)	6.3~100V: $I \leq 0.01CV$ or 3 whichever is greater. ( at 20°C, after 2 minutes)	160~450V: $I \leq 0.03CV+10$ (at 20°C, after 2 minutes)																																										
	C: Nominal capacitance (μF) V: Rated voltage (V)																																											
Dissipation Factor(20°C,120Hz)	<table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160~250</th> <th>350~450</th> </tr> </thead> <tbody> <tr> <td>tanδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.18</td> <td>0.20</td> </tr> </tbody> </table>											Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160~250	350~450	tanδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.18	0.20											
	Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160~250	350~450																																	
tanδ	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.18	0.20																																		
When nominal capacitance is over 1000μF, tanδ shall be added 0.02 to the listed value with increase of every 1000 μF																																												
Temperature Stability(120Hz)	<table border="1"> <thead> <tr> <th>Rated Voltage (V)</th> <th>6.3</th> <th>10</th> <th>16~100</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Impedance</td> <td colspan="2">Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td colspan="2">6</td> <td>8</td> <td>8</td> <td>15</td> </tr> <tr> <td>Ratio</td> <td colspan="2">Z-40°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td colspan="3"></td> </tr> </tbody> </table>											Rated Voltage (V)	6.3	10	16~100	100	160	200	250	350	400	450	Impedance	Z-25°C/Z+20°C		4	3	2	6		8	8	15	Ratio	Z-40°C/Z+20°C		8	6	4	3	3			
	Rated Voltage (V)	6.3	10	16~100	100	160	200	250	350	400	450																																	
Impedance	Z-25°C/Z+20°C		4	3	2	6		8	8	15																																		
Ratio	Z-40°C/Z+20°C		8	6	4	3	3																																					
Load Life(+85°C)	Time		2000 hours.																																									
	Leakage Current		Not more than the specified value.																																									
	Capacitance Change		Within ±20% of the initial value.																																									
	Dissipation Factor		Not more than 200% of the specified value.																																									
Shelf Life(+85°C)	Time		1000 hours.																																									
	Leakage Current		Not more than the specified value.																																									
	Capacitance Change		Within ±20% of the initial value.																																									
	Dissipation Factor		Not more than 200% of the specified value.																																									
After test: Rated voltage to be applied for 30 minutes, 24 to 48 hours before measurement.																																												

### DIMENSIONS

MM

### MULTIPLIER FOR RIPPLE CURRENT



#### Lead spacing and diameter

φD	±0.5			±1.0			
	5	6.3	8	10	12.5	16	18
F±0.5	2	2.5	3.5	5		7.5	
φd±0.1	0.5		0.6			0.8	
a	0~+2.0						

#### Frequency coefficient

Rated Voltage (V)	Freq(Hz) CV(μF.WV)	50	60	120	1K	10K	100K
6.3~16	All CV value	0.80	1	1.1	1.2	1.2	1.2
25~35	≤1000	0.80	1	1.5	1.7	1.7	1.7
	1000<	0.80	1	1.2	1.3	1.3	1.3
50~100	≤1000	0.80	1	1.6	1.9	1.9	1.9
	1000<	0.80	1	1.2	1.3	1.3	1.3
160~450	All CV value	0.80	1	1.3	1.5	1.6	1.6

#### Temperature Coefficient

Temperature(°C)	+70	+85
Coefficient	1.35	1

# CD110/CD110X SERIES

## ■ STANDARD RATINGS

WV(V)	6.3		10		16		25		35		50		63		100	
Cap ( $\mu$ F)	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)
0.1	-	-	-	-	-	-	-	-	-	-	5x11	3	-	-	5x11	2.1
0.22	-	-	-	-	-	-	-	-	-	-	5x11	6	-	-	5x11	4.7
0.33	-	-	-	-	-	-	-	-	-	-	5x11	9	-	-	5x11	7
0.47	-	-	-	-	-	-	-	-	-	-	5x11	13	-	-	5x11	10
1	-	-	-	-	-	-	-	-	-	-	5x11	21	-	-	5x11	21
2.2	-	-	-	-	-	-	-	-	-	-	5x11	31	-	-	5x11	30
3.3	-	-	-	-	-	-	-	-	-	-	5x11	38	-	-	5x11	40
4.7	-	-	-	-	-	-	5x11	38	5x11	40	5x11	45	5x11	45	5x11	45
10	-	-	-	-	5x11	50	5x11	55	5x11	59	5x11	68	5x11	66	6.3x11	75
22	-	-	5x11	50	5x11	75	5x11	82	5x11	87	5x11	98	6.3x11	100	6.3x11	130
33	5x11	60	5x11	65	5x11	92	5x11	100	5x11	107	5x11	126	6.3x11	140	8x11.5	180
47	5x11	70	5x11	99	5x11	110	5x11	118	5x11	130	6.3x11	155	8x11.5	170	10x12.5	230
100	5x11	100	5x11	146	5x11	160	6.3x11	199	6.3x11	214	8x11.5	260	10x12.5	300	10x20	370
220	5x11	200	6.3x11	240	6.3x11	264	8x11.5	349	10x12.5	443	10x12.5	443	10x16	470	12.5x25	620
330	6.3x11	270	6.3x11	290	8x11.5	383	10x12.5	510	10x12.5	542	10x16	595	10x20	710	12.5x25	760
470	6.3x11	322	8x11.5	417	8x11.5	457	10x12.5	545	10x16	664	12.5x20	887	12.5x20	900	16x25	1000
1000	8x11.5	546	10x12.5	650	10x16	791	10x20	996	12.5x20	1210	12.5x25	1400	16x25	1300	18x40	1380
2200	10x20	1010	10x20	1080	12.5x20	1350	12.5x25	1660	16x25	1950	16x35.5	2340	-	-	-	-
3300	10x20	1230	12.5x20	1430	12.5x25	1690	16x25	2030	18x35.5	2510	18x35.5	2810	-	-	-	-
4700	12.5x20	1710	12.5x25	1780	16x25	2100	16x31.5	2650	18x35.5	2990	-	-	-	-	-	-
6800	12.5x25	1930	16x25	2220	16x35.5	2580	18x35.5	3290	-	-	-	-	-	-	-	-
10000	16x25	2450	16x35.5	2700	18x35.5	3130	-	-	-	-	-	-	-	-	-	-
15000	16x35.5	2860	18x35.5	3100	-	-	-	-	-	-	-	-	-	-	-	-
22000	18x40	3340	-	-	-	-	-	-	-	-	-	-	-	-	-	-

WV (V)	160		200		250		315		350		400		450	
Cap ( $\mu$ F)	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple	Size	Ripple
	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)	$\Phi$ DxL (mm)	(mA)
0.47	6.3x11	15	6.3x11	15	6.3x11	15	6.3x11	15	6.3x11	15	6.3x11	15	8x11.5	18
1	6.3x11	22	6.3x11	22	6.3x11	22	6.3x11	22	6.3x11	22	6.3x11	22	8x11.5	25
2.2	6.3x11	32	6.3x11	32	6.3x11	32	8x11.5	38	8x11.5	38	8x11.5	38	10x12.5	43
3.3	6.3x11	40	6.3x11	40	8x11.5	48	10x12.5	53	10x12.5	53	10x12.5	54	10x16	59
4.7	6.3x11	48	8x11.5	56	8x11.5	56	10x12.5	65	10x12.5	65	10x16	71	10x20	76
10	8x11.5	81	10x12.5	94	10x16	101	10x20	115	10x20	115	12.5x20	123	12.5x20	123
22	10x16	151	10x20	170	12.5x20	182	12.5x20	182	12.5x25	197	12.5x25	197	16x25	226
33	10x20	202	12.5x20	223	12.5x25	243	16x25	277	16x25	277	16x25	277	16x31.5	304
47	12.5x20	266	12.5x20	265	12.5x25	295	16x25	330	16x25	330	18x20	361	16x35.5	380
											16x25			
100	12.5x25	422	16x25	483	16x31.5	528	18x31.5	567	18x31.5	507	-	-	-	-
220	16x31.5	783	18x35.5	882	-	-	-	-	-	-	-	-	-	-
330	18x31.5	1060	-	-	-	-	-	-	-	-	-	-	-	-

■ Ripple Current: 85°C, 100 or 120Hz.

The specific capacitance and case size are available on request.