



sunion

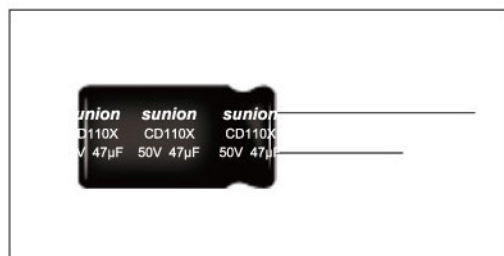
CD 110/110X Series

85°C 2000小时

- 85°C 标准品
- 高稳定、高可靠
- 小体积，低成本
- 适用于一般消费类产品

2000h at 85°C

- Standard 85°C
- High and stable quality
- Small size and low cost
- For general consumer electronic Products application



项目 Item	特性 Characteristics																																																										
使用温度范围(°C) Operating Temperature Range	-40~+85																																																										
额定电压范围(V) Voltage Range	6.3~450																																																										
标称电容量范围(µF) Capacitance Range	0.1~22000																																																										
标称电容量允许偏差 Capacitance Tolerance(20°C,120Hz)	± 20%																																																										
漏电流(µA) Leakage Current	6.3~100V	160~450V																																																									
	$I \leq 0.01CV$ 或 3, 取较大者 (20°C,1分钟) $I \leq 0.01CV$ or 3 whichever is greater (at 20°C,after 1 minutes)	$I \leq 0.03CV+10$ (20°C,2分钟) $I \leq 0.03CV+10$ (at 20°C,after 2 minutes)																																																									
C: 标称电容量 (µF) V: 额定电压 (V) C: Nominal Capacitance (µF) V: Rated Voltage (V)																																																											
损耗角正切值 (tg δ) Dissipation Factor(20°C,120Hz)	<table border="1"> <thead> <tr> <th>额定电压 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</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>损耗角正切值 Tan δ(max)</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>0.12</td> <td></td> <td>0.15</td> <td>0.20</td> <td>0.23</td> <td></td> </tr> </tbody> </table>														额定电压 Rated Voltage (V)	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	损耗角正切值 Tan δ(max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.12		0.15	0.20	0.23																
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标称电容量大于1000µF者，每增加1000µF，其损耗角正切值增加0.02 When nominal capacitance is over 1000µF tan δ shall be added 0.02 to the listed value with increase of every 1000µF																																																											
低温特性 Stability at Low Temperature (Impedance Ratio at 120Hz)	<table border="1"> <thead> <tr> <th>额定电压 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</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Z-25°C / Z +20°C</td> <td>4</td> <td>3</td> <td></td> <td></td> <td></td> <td>2</td> <td></td> <td></td> <td></td> <td>3</td> <td></td> <td></td> <td>6</td> <td></td> </tr> <tr> <td>Z-40°C / Z +20°C</td> <td>8</td> <td>6</td> <td>4</td> <td></td> <td></td> <td>3</td> <td></td> <td></td> <td></td> <td>8</td> <td></td> <td></td> <td>-</td> <td></td> </tr> </tbody> </table>														额定电压 Rated Voltage(V)	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450	Z-25°C / Z +20°C	4	3				2				3			6		Z-40°C / Z +20°C	8	6	4			3				8			-	
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RADIAL

项目 Item	使用寿命 Useful Life		负载寿命 Load Life	耐久试验 Endurance Test	高温贮存 shelf Life
寿命 Lifetime	$\Phi \leq 8$: 3000h $\Phi \geq 10$: 4000h	$\Phi \leq 8$: 35000h $\Phi \geq 10$: 50000h	2000h	2000h	1000h
漏电流 Leakage Current	≤ 初始规定值 Not more than specified value		≤ 初始规定值 Not more than specified value	≤ 初始规定值 Not more than specified value	≤ 初始规定值 Not more than specified value
容量变化率 Capacitance Change	初始值 ± 50% 以内 Within ± 50% of initial Value		初始值 ± 20% 以内 Within ± 20% of initial Value	初始值 ± 20% 以内 Within ± 20% of initial Value	初始值 ± 20% 以内 Within ± 20% of initial Value
损耗变化率 Dissipation Factor	≤ 初始规定值的3倍 Not more than 300% of specified value		≤ 初始规定值的2倍 Not more than 200% of specified value	≤ 初始规定值的1.5倍 Not more than 150% of specified value	≤ 初始规定值的2倍 Not more than 200% of specified value
使用条件 Condition:					
使用电压 APPLIED Voltage	U_R	U_R	U_R	U_R	$U_R=0$
使用电流 Applied Current	I_R	$1.4 \times I_R$	I_R	$I_R=0$	$I_R=0$
使用温度 APPLIED Temperature	85°C	40°C	85°C	85°C	85°C
失效率 Failure Rate Level	≤ 1%	≤ 1%	guaranteed (保证)		
试验后: 恢复24小时施加 额定电压30分钟后 After test: UR to be applied for 30min >24h before measurement					

CD 110/110X Series

sunion



CD 110/110X 系列

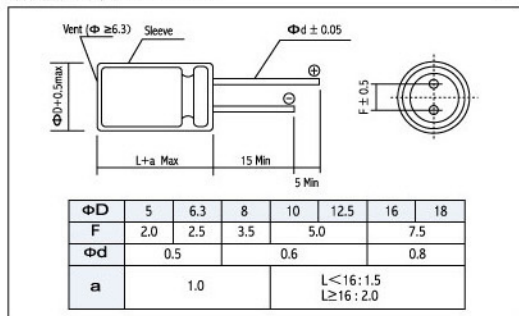
Ratings for CD 110/110X Series

U _R (Surge Voltage) Code (V)	Rated Capacitance (μF)	Max ESR 20°C, 120HZ (Ω)	Rated Ripple Current 85°C 120HZ (mAmps)	Size Φ DXL (mm)
6.3 (7.2) 0J	220	1.33	200	5x11.5
	330	0.88	270	6.3x11.5
	470	0.62	322	6.3x11.5
	1000	0.29	546	8x11.5
	2200	0.14	1010	10x20
	3300	0.1	1230	10x20
	4700	0.08	1710	12.5x20
	6800	0.06	1930	12.5x25
	10000	0.05	2450	16x25
	15000	0.04	2860	16x35.5
	22000	0.04	3340	18x40
	10 (13) 1A	47	5.36	99
100		2.52	146	5x11.5
220		1.15	240	6.3x11.5
330		0.76	290	6.3x11.5
470		0.54	417	8x11.5
1000		0.25	650	10x12.5
2200		0.13	1080	10x20
3300		0.09	1430	12.5x20
4700		0.07	1780	12.5x25
6800		0.06	2200	16x25
10000		0.05	2700	16x35.5
15000		0.04	3100	18x35.5
16 (20) 1C	10	21.2	50	5x11.5
	22	9.65	75	5x11.5
	33	6.43	92	5x11.5
	47	4.52	110	5x11.5
	100	2.12	160	5x11.5
	220	0.97	264	6.3x11.5
	330	0.64	383	8x11.5
	470	0.45	457	8x11.5
	1000	0.21	791	10x16
	2200	0.11	1350	12.5x20
	3300	0.08	1690	12.5x25
	4700	0.06	2100	16x25
6800	0.05	2580	16x35.5	
10000	0.05	3130	18x35.5	
25 (32) 1E	4.7	39.5	38	5x11.5
	10	18.6	55	5x11.5
	22	8.44	82	5x11.5
	33	5.63	100	5x11.5
	47	3.95	118	5x11.5
	100	1.86	199	6.3x11.5
	220	0.84	349	8x11.5
	330	0.56	510	10x12.5
	470	0.4	545	10x12.5
	1000	0.19	996	10x20
	2200	0.1	1660	12.5x25
	3300	0.07	2030	16x25
4700	0.06	2650	16x31.5	
6800	0.05	3290	18x35.5	

U _R (Surge Voltage) Code (V)	Rated Capacitance (μF)	Max ESR 20°C, 120HZ (Ω)	Rated Ripple Current 85°C 120HZ (mAmps)	Size Φ DXL (mm)	
35 (44) 1V	4.7	33.9	40	5x11.5	
	10	15.9	59	5x11.5	
	22	7.24	87	5x11.5	
	33	4.83	107	5x11.5	
	47	3.39	130	5x11.5	
	100	1.59	214	6.3x11.5	
	220	0.72	443	10x12.5	
	330	0.48	542	10x12.5	
	470	0.34	664	10x16	
	1000	0.16	1210	12.5x20	
	2200	0.08	1950	16x25	
	3300	0.06	2510	16x35.5	
	4700	0.05	2990	18x35.5	
	50 (63) 1H	0.1	1327	3	5x11.5
		0.22	603	6	5x11.5
		0.33	402	9	5x11.5
0.47		282	13	5x11.5	
1		133	21	5x11.5	
2.2		60.3	31	5x11.5	
3.3		40.2	38	5x11.5	
4.7		28.2	45	5x11.5	
10		13.3	66	5x11.5	
22		6.03	98	5x11.5	
33		4.02	126	5x11.5	
47		2.82	155	6.3x11.5	
100		1.33	260	8x11.5	
220		0.6	443	10x12.5	
330		0.4	595	10x16	
470		0.28	887	12.5x20	
63 (79) 1J	10	11.9	66	5x11.5	
	22	5.43	100	5x11.5	
	33	3.62	140	6.3x11.5	
	47	2.54	170	6.3x11.5	
	100	1.19	300	10x12.5	
	220	0.54	470	10x16	
	330	0.36	710	10x20	
	470	0.25	900	12.5x20	
	1000	0.12	1300	16x25	
	0.1	1062	2.1	5x11.5	
100 (125) 2A	0.22	483	4.7	5x11.5	
	0.33	322	7	5x11.5	
	0.47	226	10	5x11.5	
	1	106.2	21	5x11.5	
	2.2	48.3	30	5x11.5	
	3.3	32.2	40	5x11.5	
	4.7	22.6	45	5x11.5	
	10	10.6	75	6.3x11.5	

外形图尺寸表 Dimensions

mm



频率系数 Frequency Coefficient

额定电压 Rated voltage(V)	Frequency 系数 CV (μFV)	频率				
		50Hz	120Hz	1KHz	10KHz	100KHz
6.3~16	All CV value	0.80	1.00	1.10	1.20	1.20
	≤1000	0.80	1.00	1.50	1.70	1.70
25~35	>1000	0.80	1.00	1.20	1.30	1.30
	≤1000	0.80	1.00	1.60	1.90	1.90
50~100	>1000	0.80	1.00	1.20	1.30	1.30
	All CV value	0.80	1.00	1.30	1.50	1.60



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CD 110/110X Series

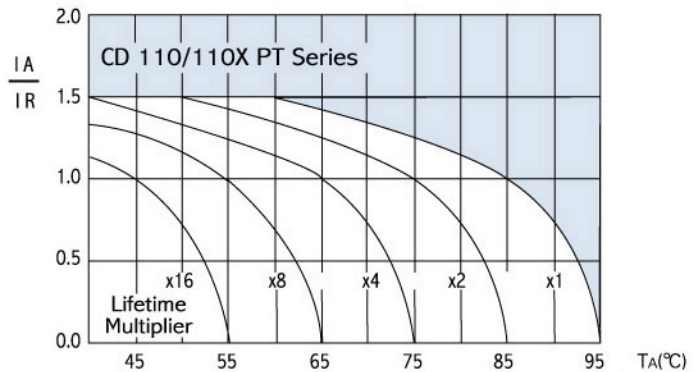
CD 110/110X 系列

Ratings for CD 110/110X Series

U _R (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120HZ	Rated Ripple Current 85°C 120HZ	Size Φ DXL
(V)	(μF)	(Ω)	(mA _{rms})	(mm)
100 (125) 2A	22	4.83	130	6.3x11.5
	33	3.22	180	8x11.5
	47	2.26	230	10x12.5
	100	1.06	370	10x20
	220	0.48	620	12.5x25
	330	0.32	760	12.5x25
	470	0.23	1000	16x25
160 (200) 2C	1000	0.11	1380	18x40
	0.47	339	15	6.3x11.5
	1	159	22	6.3x11.5
	2.2	72.4	32	6.3x11.5
	3.3	48.3	40	6.3x11.5
	4.7	33.9	48	6.3x11.5
	10	15.9	81	8x11.5
	22	7.24	151	10x16
	33	4.83	202	10x20
	47	3.39	266	12.5x20
	100	1.59	422	12.5x25
	220	0.72	783	16x31.5
	330	0.48	1080	18x31.5
	200 (250) 2D	0.47	339	15
1		159	22	6.3x11.5
2.2		72.4	32	6.3x11.5
3.3		48.3	40	6.3x11.5
4.7		33.9	56	8x11.5
10		15.9	94	10x12.5
22		7.24	170	10x20
33		4.83	223	12.5x20
47		3.39	265	12.5x20
100		1.59	483	16x25
220		0.72	882	18x35.5
250 (300) 2E	0.47	423	15	6.3x11.5
	1	199	22	6.3x11.5
	2.2	90.5	32	6.3x11.5
	3.3	60.3	48	8x11.5
	4.7	42.3	56	8x11.5
	10	19.9	101	10x16
	22	9.05	182	12.5x20
	33	6.03	243	12.5x25
	47	4.23	295	12.5x25
	100	1.99	528	16x31.5
315 (350) 2F	0.47	423	15	6.3x11.5
	1	199	22	6.3x11.5
	2.2	90.5	38	8x11.5
	3.3	60.3	53	10x12.5
	4.7	42.3	65	10x12.5
	10	19.9	115	10x20
	22	9.05	182	12.5x20
	33	6.03	277	16x25
	47	4.23	330	16x25
350 (400) 2V	100	1.99	567	18x31.5
	0.47	423.5	15	6.3x11.5
	1	199	22	6.3x11.5
	2.2	90.5	38	8x11.5
	3.3	60.3	53	10x12.5
	4.7	42.3	65	10x12.5
	10	19.9	115	10x20
	22	9.05	197	12.5x20
	33	6.03	277	16x25
	47	4.23	330	16x25
400 (450) 2G	100	1.99	507	18x31.5
	0.47	565	15	6.3x11.5
	1	265	22	6.3x11.5
	2.2	121	38	8x11.5
3.3	80.4	54	10x12.5	

U _R (Surge Voltage) Code	Rated Capacitance	Max ESR 20°C, 120HZ	Rated Ripple Current 85°C 120HZ	Size Φ DXL
(V)	(μF)	(Ω)	(mA _{rms})	(mm)
400 (450) 2G	4.7	56.5	71	10x16
	10	26.5	123	12.5x20
	22	12.1	197	12.5x25
	33	8.04	277	16x25
	47	5.65	361	16x31.5
450 (500) 2W	0.47	649	18	8x11.5
	1	305	25	8x11.5
	2.2	139	43	10x12.5
	3.3	92.5	59	10x16
	4.7	64.9	76	10x20
	10	30.5	123	12.5x20
	22	13.9	226	16x25
	33	9.2	304	16x31.5
	47	6.5	380	16x35.5

寿命曲线 Lifetime Diagram



I_a = actual ripple current at 120HZ, I_r = rated ripple current at 120HZ, 85°C
Multiplier of Useful Life as a function of ambient temperature and ripple current load