

ALUMINUM ELECTROLYTIC CAPACITOR

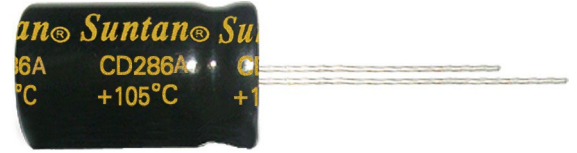
Suntan®

105°C, HIGH FREQUENCY, EXTRA LOWER IMPEDANCE
AND HIGH RIPPLE CURRENT

FEATURES

Load life of 2000 hours at 105°C

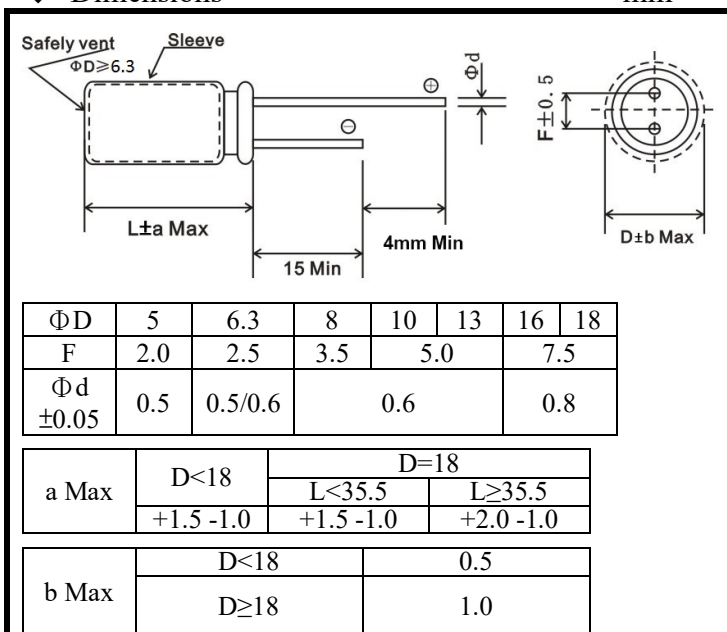
TS13D CD286A



◆ Specifications

I T E M S		P E R F O R M A N C E C H A R A C T E R I S T I C S																												
Operating Temperature Range(°C)	-40~+105																													
Rated Voltage Range (V)	6.3~50																													
Capacitance Range (μF)	0.47~10000																													
Capacitance Tolerance(20°C, 120Hz)	±20%																													
Leakage Current(μA)	I ≤ 0.01CV or 3 (μA)			I : Leakage Current (μA)																										
	*Whichever is greater after 3 minutes			C : Rated Capacitance (μF)																										
				V : Working Voltage (V)																										
Surge Voltage (20°C)	<table border="1"> <tr> <td>W.V.</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>S.V.</td> <td>8</td> <td>13</td> <td>20</td> <td>32</td> <td>44</td> <td>63</td> </tr> </table>						W.V.	6.3	10	16	25	35	50	S.V.	8	13	20	32	44	63										
W.V.	6.3	10	16	25	35	50																								
S.V.	8	13	20	32	44	63																								
Dissipation Factor (Tan δ) (20°C, 120Hz)	<table border="1"> <tr> <td>W.V.</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Tan δ</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> </tr> </table> <p>Add 0.02 per 1000μF for more than 1000μF</p>						W.V.	6.3	10	16	25	35	50	Tan δ	0.22	0.19	0.16	0.14	0.12	0.10										
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Low Temperature Stability	<table border="1"> <tr> <td colspan="2">Impedance ratio at 120Hz</td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td>Rated Voltage (V)</td> <td colspan="2">6.3~16</td> <td colspan="3">25~50</td> </tr> <tr> <td>-25°C / +20°C</td> <td colspan="2">3</td> <td colspan="3">2</td> </tr> <tr> <td>-55°C / +20°C</td> <td colspan="2">6</td> <td colspan="3">4</td> </tr> </table>						Impedance ratio at 120Hz						Rated Voltage (V)	6.3~16		25~50			-25°C / +20°C	3		2			-55°C / +20°C	6		4		
Impedance ratio at 120Hz																														
Rated Voltage (V)	6.3~16		25~50																											
-25°C / +20°C	3		2																											
-55°C / +20°C	6		4																											
Load Life (+105°C)	<p>After 2000 hours application of W.V. and +105°C ripple current value, the capacitor shall meet the following limits. (DC + ripple peak voltage ≤ rate working voltage)</p> <table border="1"> <tr> <td>Capacitance Change</td> <td>≤ ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>≤ 200% of initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>≤ Initial specified value</td> </tr> </table>						Capacitance Change	≤ ±20% of initial value	Dissipation Factor	≤ 200% of initial specified value	Leakage current	≤ Initial specified value																		
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Leakage current	≤ Initial specified value																													
Shelf Life (+105°C)	At 105°C no voltage application after 1000 hours the capacitor shall meet the limits for load life characteristics. (with voltage treatment)																													

◆ Dimensions



◆ Multiplier for ripple current

Frequency coefficient

Frequency (Hz)	60	120	400	1k	10k	100k
W.V.	Multiplier					
10 ~ 16V	0.45	0.60	0.83	0.94	0.98	1.00
25 ~ 35V	0.38	0.50	0.75	0.90	0.97	1.00
50V	0.36	0.46	0.70	0.88	0.94	1.00

Temperature coefficient

Temperature	65	75	85	95	105
Multiplier	2.12	1.92	1.69	1.50	1.00

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◆ STANDARD RATINGS

V μF	6.3V				10V			
	DxL	Impedance (Ω max) 100KHz		Max Ripple Current mA(rms)	DxL	Impedance (Ω max) 100KHz		Max Ripple Current mA(rms)
		20°C	-10	105°C 100KHz		20°C	-10	105°C 100KHz
100	--	--	--	--	5x11	0.312	0.937	230
120	--	--	--	--	5x11	0.266	0.798	250
150	5x11	0.219	0.656	250	5x11	0.218	0.653	280
180	5x11	0.19	0.571	270	6.3x11	0.189	0.568	350
220	5x11	0.162	0.487	300	6.3x11	0.161	0.484	390
270	6.3x11	0.148	0.444	380	6.3x11	0.147	0.442	430
330	6.3x11	0.13	0.389	420	8x12	0.129	0.387	560
390	8x12	0.117	0.351	530	8x12	0.116	0.349	610
470	8x12	0.106	0.319	580	8x12	0.106	0.317	670
560	8x12	0.094	0.283	630	8x12	0.094	0.281	730
680	8x12	0.084	0.252	700	8x16	0.083	0.25	900
		10x13		0.083	950			
820	8x16	0.077	0.23	860	8x16	0.076	0.228	990
	10x13	0.077		900	10x13	0.076		1040
1000	8x16	0.069	0.206	950	8x20	0.068	0.204	1240
	10x13	0.069		990	10x16	0.068		1280
1200	8x20	0.059	0.178	1180	10x20	0.059	0.177	1540
	10x16	0.059		1210				
1500	10x20	0.036	0.107	1450	10x25	0.035	0.106	1830
1800	10x20	0.031	0.094	1590	10x25	0.031	0.094	2000
	13x18	0.031		1520	13x18	0.031		1880
2200	10x25	0.028	0.083	1880	10x28	0.027	0.082	2250
	13x18	0.028		1770				
2700	10x25	0.025	0.075	2140	13x20	0.025	0.062	2250
3300	13x20	0.023	0.058	2150	13x25	0.023	0.057	2650
3900	13x25	0.022	0.055	2520	13x30	0.022	0.055	3030
4700	13x30	0.021	0.053	2860	13x35	0.021	0.053	3210
5600	13x35	0.02	0.05	3060	13x40	0.02	0.049	3550
	16x25	0.02		2900	18x20	0.02		2940
6800	13x40	0.019	0.047	3450	16x31	0.019	0.047	3680
	18x20	0.019		2850	18x25	0.019		3390
8200	16x31	0.018	0.045	3540	16x36	0.018	0.044	4010
	18x25	0.018		3260	18x31	0.018		3870
10000	16x35	0.017	0.043	3880	18x36	0.017	0.042	4190
	18x31	0.017		3740				

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V μF	16V				25V			
	DxL	Impedance (Ω max) 100KHz		Max Ripple Current mA(rms)	DxL	Impedance (Ω max) 100KHz		Max Ripple Current mA(rms)
		20°C	-10	105°C 100KHz		20°C	-10	105°C 100KHz
47	--	--	--	--	5x11	0.283	0.085	220
56	5x11	0.253	0.759	190	5x11	0.253	0.758	240
68	5x11	0.221	0.662	210	5x11	0.22	0.661	270
82	5x11	0.203	0.61	230	6.3x11	0.203	0.609	330
100	5x11	0.183	0.55	250	5x15 6.3x11	0.183 0.183	0.549 0.549	370 370
120	6.3x11	0.156	0.469	320	6.3x11	0.156	0.468	400
150	6.3x11	0.128	0.383	350	8x12	0.128	0.383	520
180	6.3x11	0.111	0.333	390	8x12	0.111	0.333	570
220	6.3x11	0.095	0.284	430	8x12	0.095	0.284	630
270	8x11.5	0.086	0.259	550	10x13	0.086	0.259	830
330	8x11.5	0.076	0.227	610	10x13	0.076	0.227	910
390	8x16 10x13	0.068 0.068	0.205 0.205	750 790	8x20 10x16	0.068 0.068	0.205 0.205	1080 1100
470	8x16 10x13	0.062 0.062	0.186 0.186	820 860	8x20 10x16	0.062 0.062	0.186 0.186	1180 1210
560	8x20 10x16	0.055 0.055	0.165 0.165	1020 1050	8x20 10x16	0.055 0.055	0.165 0.165	1290 1320
680	8x20 10x16	0.049 0.049	0.147 0.147	1120 1150	10x20	0.049	0.147	1610
820	8x20 10x16	0.045 0.045	0.134 0.134	1230 1270	10x25 13x18	0.045 0.045	0.134 0.112	1950 1830
1000	10x20	0.04	0.12	1540	10x28	0.04	0.12	2270
1200	10x25	0.035	0.104	1870	13x20	0.035	0.104	2320
1500	10x28	0.029	0.088	2100	13x25	0.029	0.074	2710
1800	13x20	0.026	0.065	2140	13x30 16x20	0.026 0.026	0.065 0.065	3230 2840
2200	13x25	0.023	0.057	2500	13x35 16x25	0.023 0.023	0.057 0.057	3470 3290
2700	13x30 16x20	0.021 0.021	0.052 0.052	2890 2540	13x40 18x20	0.021 0.021	0.052 0.052	3910 3240
3300	13x35 16x25	0.019 0.019	0.048 0.048	3130 2970	16x31 18x25	0.019 0.019	0.047 0.047	4100 3770
3900	13x40 18x20	0.018 0.018	0.046 0.046	3500 2900	16x36 18x31	0.018 0.018	0.046 0.046	4530 4360
4700	16x31 18x25	0.016 0.016	0.04 0.04	3560 3280	18x36	0.016	0.04	4720
5600	16x35 18x31	0.015 0.015	0.038 0.038	3880 3740	--	--	--	--

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V μF	35V				50V			
	DxL	Impedance (Ω max) 100KHz		Max Ripple Current mA(rms)	DxL	Impedance (Ω max) 100KHz		Max Ripple Current mA(rms)
		20°C	-10	105°C 100KHz		20°C	-10	105°C 100KHz
0.47	--	--	--	--	5x11	3.006	9.017	27
1	--	--	--	--	5x11	2.825	8.476	40
2.2	--	--	--	--	5x11	1.511	4.533	60
3.3	--	--	--	--	5x11	1.259	3.777	70
4.7	5x11	1.062	3.185	75	5x11	1.061	3.182	85
6.8	5x11	0.917	2.752	90	5x11	0.916	2.749	100
10	5x11	0.832	2.495	110	5x11	0.831	2.493	130
15	5x11	0.61	1.829	130	5x11	0.609	1.828	150
18	5x11	0.531	1.594	150	5x11	0.531	1.593	170
22	5x11	0.454	1.361	160	5x11	0.453	1.36	190
27	5x11	0.4	1.201	180	5x11	0.4	1.2	210
33	5x11	0.353	1.058	200	5x11	0.353	1.058	230
39	5x11	0.32	0.996	210	6.3x11	0.32	0.959	280
47	5x11	0.283	0.849	230	6.3x11	0.283	0.849	310
56	6.3x11	0.252	0.757	290	6.3x11	0.252	0.757	340
68	6.3x11	0.22	0.66	320	8x12	0.22	0.66	430
82	6.3x11	0.203	0.608	350	8x12	0.203	0.608	480
100	8x12	0.183	0.549	450	10x13	0.183	0.548	620
120	8x12	0.109	0.327	500	10x13	0.109	0.327	680
150	8x12	0.089	0.268	550	10x16	0.089	0.268	840
180	10x13 8x16	0.078 0.078	0.233 0.233	720 680	10x16	0.078	0.233	920
220	10x13 8x16	0.066 0.066	0.198 0.198	790 750	10x16	0.066	0.198	1020
270	10x16	0.06	0.181	970	10x20	0.06	0.181	1250
330	8x20 10x16	0.053 0.053	0.159 0.159	1050 1080	10x25 13x18	0.053 0.053	0.159 0.132	1530 1430
390	10x20	0.048	0.143	1290	10x25	0.048	0.143	1660
470	10x20	0.043	0.13	1420	13x21	0.043	0.108	1790
560	10x25	0.038	0.115	1710	13x25	0.038	0.096	2150
680	10x28	0.034	0.103	1990	13x30	0.034	0.086	2580
820	10x30	0.031	0.094	2250	13x35	0.031	0.078	2880
1000	13x25	0.028	0.07	2480	13x40	0.028	0.07	3390
1200	13x30	0.024	0.061	2940	16x31	0.024	0.061	3660
1500	13x35 16x25	0.021 0.021	0.051 0.051	3160 3000	16x35 18x31	0.021 0.021	0.051 0.051	4040 3890
1800	13x40	0.018	0.045	3690	--	--	--	--
2200	16x31 16x25	0.016 0.016	0.04 0.04	3810 3510	--	--	--	--

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μF	V	63V			
		DxL	Impedance (Ω max) 100KHz		Max Ripple Current mA(rms) 105°C 100KHz
			20°C	-10	
1	5x11	3.158	9.473	40	
2.2	5x11	1.813	5.439	60	
3.3	5x11	1.511	4.533	70	
4.7	5x11	1.273	3.819	85	
10	5x11	0.997	2.991	130	
22	6.3x11	0.544	1.632	190	
33	6.3x11	0.423	1.269	260	
47	8x12	0.339	1.018	360	
68	8x16	0.22	0.66	490	
100	10x13	0.183	0.548	620	
220	10x20	0.094	0.283	1130	
330	10x30	0.076	0.227	1660	
470	13x25	0.062	0.155	1970	
680	13x25	0.039	0.098	2760	
1000	16x25	0.032	0.08	3020	

Note: Specification are subject to change without notice. For more detail and update, please visit our website.