



Miniature Aluminum Electrolytic Capacitors

Series
CSK

1. For general purpose
2. Life 2000 hours at +85°C
3. Wide CV value range
4. Safety vents construction products

SPECIFICATIONS

Item	Performance Characteristics																																										
Operating Temperature Range	-40 to +85°C																																										
Rated Working voltage Range	6.3 to 100V	160 to 450V																																									
Nominal Capacitance Range	0.1- 22000(uF)																																										
Capacitance Tolerance	±20% (120Hz, +20°C)																																										
Leakage Current	I ≤ 0.01CV or 3(uA) after 2 minutes Whichever is greater measured with rated working voltage applied at +20°C	I ≤ 0.03CV+40(uA) after 2 minutes application of rated working voltage at +20°C																																									
Dissipation Factor tan δ (120Hz+20°C)	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Working 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> </tr> </thead> <tbody> <tr> <td>tan δ (max.)</td> <td>0.28</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> </tr> </tbody> </table> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Working voltage(V)</th> <th>160</th> <th>200</th> <th>250</th> <th>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>tan δ (max.)</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> <td>0.15</td> </tr> </tbody> </table> <p>For capacitance value >1000uF add 0.02per another 1000uF</p>		Working voltage(V)	6.3	10	16	25	35	50	63	100	tan δ (max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	Working voltage(V)	160	200	250	350	400	450	tan δ (max.)	0.15	0.15	0.15	0.15	0.15	0.15									
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Ripple Current	<p>Refer to standard products table (120Hz,+85°C) Correction factor for frequency</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Voltage(V)</th> <th>Capacitance Range (uF)</th> <th>50Hz</th> <th>120Hz</th> <th>300Hz</th> <th>1kHz</th> <th>10kHz~</th> </tr> </thead> <tbody> <tr> <td rowspan="3">6.3~100</td> <td>~47</td> <td>0.75</td> <td>1.00</td> <td>1.35</td> <td>1.57</td> <td>2.00</td> </tr> <tr> <td>100~470</td> <td>0.80</td> <td>1.00</td> <td>1.23</td> <td>1.34</td> <td>1.50</td> </tr> <tr> <td>1000~33000</td> <td>0.85</td> <td>1.00</td> <td>1.10</td> <td>1.13</td> <td>1.15</td> </tr> <tr> <td rowspan="2">160~450</td> <td>0.47~220</td> <td>0.80</td> <td>1.00</td> <td>1.25</td> <td>1.40</td> <td>1.60</td> </tr> <tr> <td>270~330</td> <td>0.90</td> <td>1.00</td> <td>1.10</td> <td>1.13</td> <td>1.15</td> </tr> </tbody> </table>		Voltage(V)	Capacitance Range (uF)	50Hz	120Hz	300Hz	1kHz	10kHz~	6.3~100	~47	0.75	1.00	1.35	1.57	2.00	100~470	0.80	1.00	1.23	1.34	1.50	1000~33000	0.85	1.00	1.10	1.13	1.15	160~450	0.47~220	0.80	1.00	1.25	1.40	1.60	270~330	0.90	1.00	1.10	1.13	1.15		
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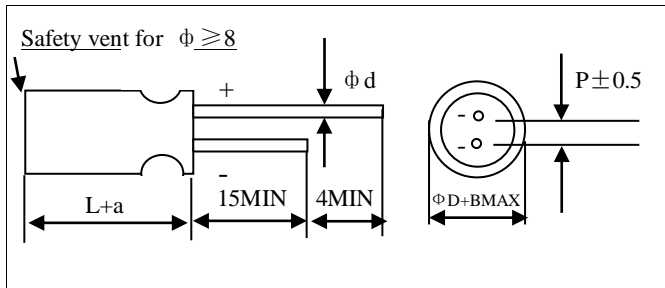


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High temperature Loading	Test conditions Duration : 2000 hours Ambient temperature : +85°C Applied voltage : Rated DC working voltage Post test requirements at +20°C Leakage current : ≤ Initial specified value Capacitance change : ≤ ±20% of initial measured value tan D : ≤ 200% of initial specified value
Shelf life	Test conditions Duration : 1000 hours Ambient temperature : +85°C Applied voltage : (None) Post test requirements at +20°C Same Limits for high temperature loading
Others	JIS C-5141 JIS C-5102

CASE SIZE TABLE

Unit:mm



Dφ	5	6.3	8	10	13	16	18	22
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0
dφ (±0.05)	0.5		0.6		0.8			

aMAX	(L<20)1.5
	(L≥20)2.0

BMAX	(D<20)0.5
	(D≥20)1.0

DIMENSIONS

ΦD×L(mm)

Cap.(uF)	WV(SV)	6.3V(8)		10V(13)		16V(20)		25V(32)		35V(44)	
		Code	0J	1A	1C	1E	1V				
4.7	475							5×11	41	5×11	45
10	106					5×11	62	5×11	65	5×11	72
22	226	5×11	76	5×11	81	5×11	90	5×11	96	5×11	115
33	336	5×11	98	5×11	102	5×11	110	5×11	115	5×11	140
47	476	5×11	115	5×11	125	5×11	148	5×11	158	6.3×11	172
100	107	5×11	165	5×11	220	5×11	225	6.3×11	232	8×12	278
220	227	6.3×11	288	5×11	295	6.3×11	360	6.3×12	370	8×14	420
				6.3×11	302			8×12	385	10×12.5	446
330	337	6.3×11	362	8×12	405	8×12	438	10×12.5	506	10×15	592
470	477	6.3×11	410	6.3×11	425	8×12	520	8×14	600	10×17	736
		8×12	460	8×12	486	10×15	570	10×17	655	10×20	776
1000	108	10×12.5	700	10×12.5	770	10×17	928	10×20	1062	13×21	1334
2200	228	13×21	1148	10×20	1335	13×21	1632	13×25	1800	16×26	1950
3300	338	13×21	1510	13×21	1688	13×25	2055	16×26	2120	16×35	2688
4700	478	13×21	1816	13×25	2175	16×26	2418	16×30	2610	18×36	2865
6800	688	16×26	2300	16×26	2478	16×35	2800	18×36	2980		



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10000	109	16×30	2400	16×35	2900	18×36	3050				
15000	159	18×36	3164	18×40	3580	22×40	3910				
22000	229	18×40	3580							Case Size	Allowable ripple

Allowable Ripple (mA rms)at 85°C 120Hz

DIMENSIONS

ΦD×L(mm)

WV(SV) Cap.(uF)	Code	50V(63)		63V(79)		100V(125)		160V(200)		200V(250)	
		1H	1J	2A	2C	2D					
0.1	104	5×11	12	5×11	18	5×11	22				
0.22	224	5×11	12	5×11	18	5×11	22				
0.33	334	5×11	12	5×11	18	5×11	22				
0.47	474	5×11	12	5×11	18	5×11	22	6.3×11	15	6.3×11	16
1	105	5×11	18	5×11	22	5×11	27	6.3×11	20	6.3×11	21
2.2	225	5×11	35	5×11	42	5×11	46	6.3×11	28	6.3×11	33
3.3	335	5×11	41	5×11	48	5×11	51	8×12	41	8×12	48
4.7	475	5×11	47	5×11	60	5×11	65	8×12	58	10×12.5	61
10	106	5×11	75	5×11	85	6.3×11	88	10×12.5	98	10×15	102
22	226	5×11	120	6.3×11	125	8×12	152	10×17	156	10×20	162
33	336	6.3×11	150	6.3×11	168	10×12.5	202	10×20	232	13×21	236
47	476	6.3×11	182	8×12	220	10×15	265	13×21	296	13×25	318
100	107	8×12	305	10×12.5	365	13×21	461	16×26	518	16×30	554
220	227	10×17	530	10×20	605	16×26	735	18×36	880	18×40	986
330	337	10×20	700	13×21	835	16×26	912	22×40	1220		
470	477	13×21	860	13×25	1062	16×30	1118				
1000	108	16×26	1550	16×30	1758	18×40	1930				
2200	228	16×35	2320	18×36	2480						
3300	338	18×36	2755							Case Size	Allowable ripple

WV(SV) Cap.(uF)	Code	250V(300)		350V(400)		400V(450)		450V(500)	
		2E	2V	2G	2W				
0.47	474	6.3×11	20						
1	105	6.3×11	25						
2.2	225	8×12	33	8×12	34	8×12	34	10×12.5	36
3.3	335	10×12.5	52	10×12.5	55	10×12.5	45	10×15	52
4.7	475	10×12.5	66	10×15	62	10×15	56	10×20	64
10	106	10×20	98	10×17	95	10×20	82	13×21	92
22	226	13×25	188	13×21	162	13×21	158	13×25	175
33	336	13×25	237	13×25	208	16×26	190	16×30	208
47	476	16×26	310	16×30	286	16×30	272	18×36	286
100	107	18×36	580	18×36	500	18×36	486	22×40	530
150	157	18×40	726	22×40	560				
220	227	22×40	985					Case Size	Allowable ripple

Allowable Ripple (mA rms)at 85°C 120Hz