



Miniature Aluminum Electrolytic Capacitors

Series
CSH

FEATURES

1. 105°C High-Temperature resistance high reliability and long life.
2. Suitable for office communicative or industrial equipments

SPECIFICATIONS

Item	Performance Characteristics																										
Operating Temperature Range	-40 to +105°C																										
Rated Working voltage Range	6.3 to 100V DC	160 to 450V DC																									
Nominal Capacitance Range	0.47- 22000(uF)																										
Capacitance Tolerance	± 20% (120Hz, +20°C)																										
Leakage Current	$I \leq 0.01CV$ or $3(uA)$ Whichever is greater	$I \leq 0.03CV + 40(uA)$																									
	after 2 minutes application of rated working voltage at +20°C																										
Dissipation Factor $\tan \delta$ (120Hz+20°C)	<table border="1"> <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>$\tan \delta$ (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>									Working voltage(V)	6.3	10	16	25	35	50	63	100	$\tan \delta$ (max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08
	Working voltage(V)	6.3	10	16	25	35	50	63	100																		
	$\tan \delta$ (max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08																		
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Working voltage(V)	160	200	250	350	400	450																					
$\tan \delta$ (max.)	0.15	0.15	0.15	0.15	0.15	0.15																					
For capacitance value >1000uF add 0.02per another 1000uF																											
Refer to standard products table (120Hz,+105°C)																											
Ripple Current	Correction factor for frequency																										
	Voltage (V)	CAP(uF) Freq(Hz)	50Hz	120Hz	300Hz	1kHz	10kHz~																				
			0.1~47	0.75	1.00	1.35	1.57	2.00																			
	6.3~100	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																				
330~1000		0.90	1.00	1.10	1.13	1.15																					
Multiplier for Ripple Current vs. Temperature	Temperature°C	45	60	70	85	105																					
	Multiplier	2.10	1.90	1.40	1.25	1.00																					

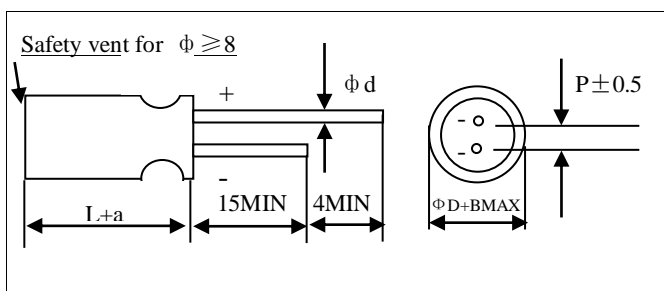


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Low Temperature Characteristics	Impedance ratio max. at 120Hz																											
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	Working voltage(V)	6.3	10	16	25	35	50	63	100																			
	Z-25°C/Z+20°C	5	4	3	2	2	2	2	2																			
Z-40°C/Z+20°C	12	10	8	5	4	3	3	3																				
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Working voltage(V)	160	200	250	350	400	450																						
Z-40°C/Z+20°C	3	3	4	4	6	15																						
For capacitance value >1000uF	Add0.5 per another 1000uF for Z-25°C/Z+20°C Add1.0 per another 1000uF for Z-40°C/Z+20°C																											
High temperature Loading	Test conditions Duration : 2000 hours Ambient temperature : +105°C Applied voltage : DC voltage with maximum permissible ripple current specified at +105°C (Sum of the DC voltage and superimposed pea AC voltage for maximum permissible ripple current should be equal to rated DC working voltage)																											
	Post test requirements at +20°C Leakage current : ≤ Initial specified value Capacitance change : ≤ ±20% of initial measured value tan δ : ≤200% of initial specified value																											
Shelf life	Test conditions Duration : 1000 hours Ambient temperature : +105°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
d φ ±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)

WV(SV)	Code	6.3V(8)	10V(13)	16V(20)	25V(32)	35V(44)
		0J	1A	1C	1E	1V
4.7	475					5×11 32
10	106				5×11 45	5×11 46
22	226				5×11 62	5×11 75
33	336				6.3×11 85	6.3×11 92
47	476			5×11 90	5×11 100	8×12 125



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100	107	5×11	115	5×11	132	6.3×11	150	8×12	180	8×12	195		
220	227	6.3×11	175	6.3×11	195	6.3×11	240	10×12.5	290	10×12.5	330		
330	337	8×12	240	8×12	278	8×12	320	10×12.5	360	10×17	430		
470	477	8×12	280	8×12	325	10×12.5	375	10×20	460	13×21	585		
1000	108	10×12.5	490	10×15	583	10×20	650	13×21	820	13×25	980		
2200	228	10×20	800	13×21	950	13×21	1100	16×26	1220	16×30	1430		
3300	338	13×21	980	13×25	1210	16×26	1325	16×30	1530	18×36	1810		
4700	478	13×25	1250	16×26	1400	16×30	1550	18×36	1820	18×40	2100		
6800	688	16×26	1400	16×30	1700	18×36	1900	18×40	2150				
10000	109	16×30	1780	18×36	2020	18×40	2200						
15000	159	18×36	2000	18×40	2250								
22000	229	18×40	2330									Case size	Allowable ripple

Allowable Ripple (mA rms) at 105°C 120HZ

ΦD×L(mm)

DIMENSIONS

WV(SV)		50V(63)		63V(79)		100V(125)		160V(200)		200V(250)			
Cap.(uF)	Code	1H		1J		2A		2C		2D			
0.47	474	5×11	10										
1	105	5×11	18										
2.2	225	5×11	25			5×11	29	6.3×11	29	6.3×11	29		
3.3	335	5×11	32			5×11	36	8×12	37	8×12	45		
4.7	475	5×11	37			5×11	45	8×12	50	10×12.5	60		
10	106	5×11	53	5×11	58	6.3×11	68	10×12.5	85	10×15	90		
22	226	6.3×11	89	6.3×11	100	8×12	120	10×15	140	10×20	150		
33	336	8×12	110	8×12	125	10×12.5	150	10×20	180	13×21	210		
47	476	8×12	145	10×12.5	150	10×15	195	13×21	250	13×21	280		
100	107	10×12.5	235	10×17	260	13×21	315	16×26	380	16×30	500		
220	227	10×15	380	10×20	420	16×26	550	18×36	680	18×40	830		
330	337	10×20	500	13×21	560	16×26	680	18×40	1200	22×40	1400		
470	477	13×21	680	16×26	735	16×30	900	22×40	1300	22×50	1450		
560	567							22×40	1410	22×50	1550		
680	687							22×50	1520	25×50	1620		
820	827									25×50	1750		
1000	108	16×26	1100	16×30	1150	18×40	2050	25×50	2550				
2200	228	18×36	1750			22×50	2950						
3300	338	18×40	3080			22×50	3650					Case size	Allowable ripple

Allowable Ripple (mA rms) at 105°C 120HZ

WV(SV)		250V(300)		350V(400)		400V(450)		450V(500)			
Cap.(uF)	Code	2E		2V		2G		2W			
2.2	225	8×12	35	8×12	40	8×12	50	10×12.5	55		
3.3	335	8×12	51	8×12	45	8×12	55	10×12.5	50		
4.7	475	8×12	58	10×12.5	58	10×12.5	62	10×15	60		
10	106	10×15	116	10×20	146	13×21	169	13×21	189		
22	226	13×21	175	13×21	170	13×25	190	16×22	220		
33	336	13×21	230	13×25	210	16×22	250	16×26	290		
47	476	13×25	290	16×26	330	16×30	340	18×26	370		
68	686	16×22	320	16×26	360	18×26	360	18×32	520		
82	826	16×30	400	18×26	430	18×32	600	18×36	620		
100	107	16×36	510	18×32	560	18×36	670	18×40	730		
120	127			18×36	660	18×40	780	Case size	Allowable ripple		

Allowable Ripple (mA rms) at 105°C 120HZ



Miniature Aluminum Electrolytic Capacitors SPECIALLY SIZE

- 1 105 high-temperature and high voltage 350-450WV, life 2000hrs.
- 2 Specially Size, 10~16mm diameter.
- 3 For LCD-TV and LCD-Moniter power

WV(SV) Cap.(uF) Code		Φ D×L(mm)					
		350V(400)		400V(450)		450V(500)	
		2V		2G		2W	
33	336			10×40	260	10×40	300
						13×35	310
39	396	13×30	280	10×45	310	10×50	360
				13×35	320	13×40	370
47	476	10×40	310	10×50	340	10×55	380
		13×35	330	13×40	360	13×50	410
68	686	10×50	410	13×50	410	13×55	520
		13×40	440	16×35	430	16×40	450
82	826	13×50	460	13×55	540	13×60	610
		16×35	510	16×40	560	16×45	630
100	107	16×40	540	16×45	730	16×50	770
						Case size	Allowable ripple

Allowable Ripple (mA rms) at105℃ 120HZ