



ALUMINUM ELECTROLYTIC CAPACITORS

FEATURES

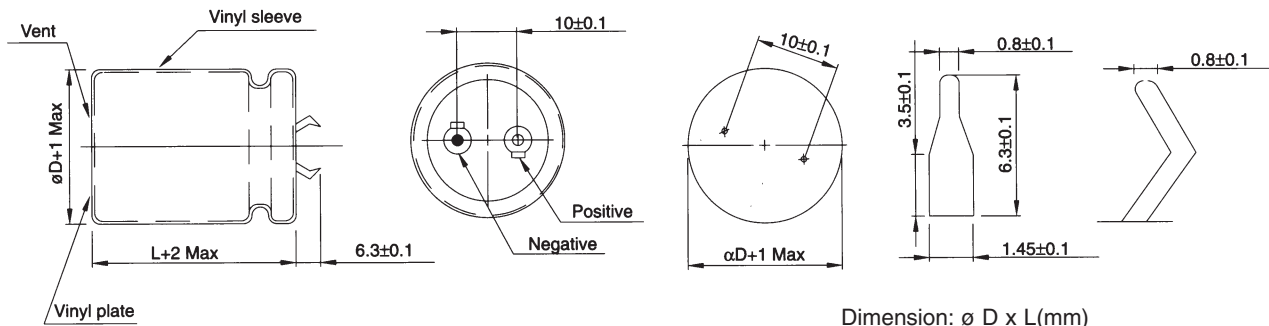
- SNAP-IN TERMINAL WHICH CAN SOLDER TO PCB DIRECTLY SAVE PROCESSING TIME
- SUITABLE FOR ELECTRONIC EQUIPMENT WITH MEDIUM-HIGH VOLTAGE CIRCUITS
- PRINTED CIRCUIT BOARD TERMINAL SNAP-IN TYPE AND LUG TERMINAL TYPE AVAILABLE

SPECIFICATIONS

Items	Performance																																								
Operating Temperature Range	16~400V -40°C~-+85°C	450V -25°C~-+85°C																																							
Capacitance Tolerance	±20% (at 120 Hz, 20°C)																																								
Leakage Current (at 20 °C)	I=0.02CV or 1.5mA whichever is smaller (after 5 minutes) Where, C=rated capacitance in µF. V=rated DC working voltage in V.																																								
Dissipation Factor (Tan δ at 120 Hz, 20 °C)	<table border="1" style="width: 100%; text-align: center;"> <tr> <th>Rated Voltage</th> <td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>160</td><td>200</td><td>250</td><td>350</td><td>400</td><td>450</td> </tr> <tr> <th>Tan δ (max)</th> <td>0.40</td><td>0.30</td><td>0.25</td><td>0.20</td><td>0.15</td><td>0.15</td><td>0.10*</td><td>0.10*</td><td>0.10*</td><td>0.15</td><td>0.15</td><td>0.15</td> </tr> </table> <p>*:0.15 for ø D=35 mm</p>		Rated Voltage	16	25	35	50	63	100	160	200	250	350	400	450	Tan δ (max)	0.40	0.30	0.25	0.20	0.15	0.15	0.10*	0.10*	0.10*	0.15	0.15	0.15													
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Low Temperature Characteristics (at 120Hz)	<p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <th>Rated Voltage</th> <td>16</td><td>25</td><td>35</td><td>50</td><td>63</td><td>100</td><td>160</td><td>200</td><td>250</td><td>350</td><td>400</td><td>450</td> </tr> <tr> <th>Impedance Ratio Z(-25°C)/Z(+20°C)</th> <td>4</td><td>3</td><td>3</td><td>2</td><td>2</td><td>2</td><td>4</td><td>4</td><td>4</td><td>4</td><td>8</td><td>8</td> </tr> <tr> <th>Ratio Z(-40°C)/Z(+20°C)</th> <td>15</td><td>10</td><td>8</td><td>6</td><td>6</td><td>5</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td> </tr> </table>		Rated Voltage	16	25	35	50	63	100	160	200	250	350	400	450	Impedance Ratio Z(-25°C)/Z(+20°C)	4	3	3	2	2	2	4	4	4	4	8	8	Ratio Z(-40°C)/Z(+20°C)	15	10	8	6	6	5	-	-	-	-	-	-
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Shelf Life Test	<table border="1" style="width: 100%; text-align: center;"> <tr> <td>Test Time</td> <td>1000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td>≤ ± 20%</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 150% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table> <p>*The above specifications shall be satisfied when the capacitors are restored to 20 °C after exposing them for 1000 hrs at 85 °C without voltage applied.</p>		Test Time	1000 Hrs	Capacitance Change	≤ ± 20%	Dissipation Factor	Less than 150% of specified value	Leakage Current	Within specified value																															
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Ripple Current & Frequency Multipliers	<table border="1" style="width: 100%; text-align: center;"> <tr> <th style="text-align: left;">W. V. (V) \ Freq. (Hz)</th> <th>60</th> <th>120</th> <th>500</th> <th>1K</th> <th>10K up</th> </tr> <tr> <th>Under 100</th> <td>0.92</td> <td>1.00</td> <td>1.13</td> <td>1.19</td> <td>1.20</td> </tr> <tr> <th>160~250</th> <td>0.81</td> <td>1.00</td> <td>1.32</td> <td>1.45</td> <td>1.50</td> </tr> <tr> <th>350 to up</th> <td>0.77</td> <td>1.00</td> <td>1.30</td> <td>1.41</td> <td>1.43</td> </tr> </table>		W. V. (V) \ Freq. (Hz)	60	120	500	1K	10K up	Under 100	0.92	1.00	1.13	1.19	1.20	160~250	0.81	1.00	1.32	1.45	1.50	350 to up	0.77	1.00	1.30	1.41	1.43															
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Standards	Satisfies Characteristic W of JIS C 5141																																								



DIAGRAM OF DIMENSIONS Snap-in Terminal Type



Dimension: ϕ D x L (mm)
Ripple Current: A/rms at 120 Hz, 85 °C

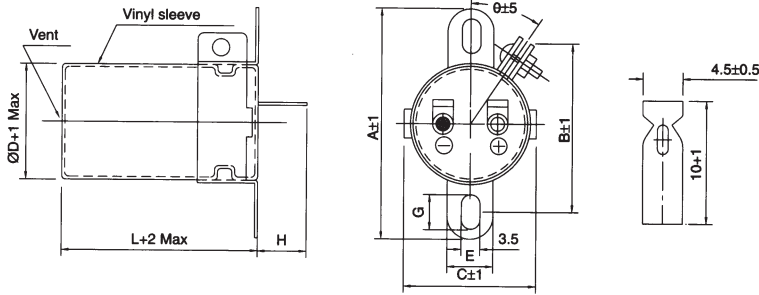
DIMENSION & PERMISSIBLE RIPPLE CURRENT

μ F	code	16V (1C)				25V (1E)				35V (1V)			
		22	25	30	35	22	25	30	35	22	25	30	35
4700	472									22 x 30 2.41	25 x 25 2.42		
5600	562					22 x 25 2.21				22 x 35 2.75			
6800	682					22 x 30 2.40	25 x 25 2.56			22 x 40 2.80	25 x 30 2.74	30 x 25 2.97	
8200	822	22 x 25 2.51				22 x 35 2.72				22 x 45 3.47	25 x 35 3.10		
10000	103	22 x 30 2.54	25 x 30 2.74			22 x 40 3.09	25 x 30 3.12	30 x 25 3.21		22 x 50 3.57	25 x 40 3.53	30 x 30 3.46	35 x 25 3.20
12000	123	22 x 30 2.86	25 x 25 2.95			22 x 45 3.48	25 x 35 3.43	30 x 30 3.86	35 x 25 3.54		25 x 45 3.98	30 x 35 4.01	35 x 30 4.42
15000	153	22 x 35 3.29	25 x 30 3.46	30 x 25 3.66		22 x 50 4.00	25 x 40 3.95	30 x 35 4.12				30 x 40 4.52	35 x 35 5.01
18000	183	22 x 40 3.72	25 x 35 3.98				25 x 45 4.45	30 x 35 4.46	35 x 30 4.63			30 x 45 4.71	35 x 40 5.54
22000	223	22 x 50 4.37	25 x 40 4.26	30 x 30 4.21	35 x 25 4.15			30 x 45 5.21	35 x 35 5.16				35 x 45 6.04

μ F	code	50V (1H)				63V (1J)				100V (2A)			
		22	25	30	35	22	25	30	35	22	25	30	35
1200	122									22 x 30 2.09	25 x 25 2.10		
1500	152									22 x 35 2.41	25 x 30 2.43	30 x 25 2.46	
1800	182					22 x 25 1.82				22 x 40 2.71	25 x 35 2.75		
2200	222	22 x 25 1.91				22 x 30 2.31	25 x 25 2.30			22 x 45 3.08	25 x 40 3.13	30 x 30 3.09	35 x 25 3.14
2700	272	22 x 25 2.01				22 x 35 2.49	25 x 30 2.52				22 x 45 3.57	30 x 35 3.55	35 x 30 3.71
3300	332	22 x 30 2.37	25 x 25 2.38			22 x 35 2.62	25 x 30 2.64	30 x 25 2.78			25 x 50 4.06	30 x 40 4.05	
3900	392	22 x 35 2.65	25 x 30 2.68			22 x 40 2.93	25 x 35 2.97					30 x 45 4.54	35 x 35 4.49
4700	472	22 x 40 2.99	25 x 35 3.03	30 x 25 2.81		22 x 50 3.39	25 x 40 3.36	30 x 30 3.32	35 x 25 3.36			30 x 50 5.13	35 x 40 5.11
5600	562	22 x 45 3.36	25 x 40 3.41	30 x 30 3.37	35 x 25 3.42		25 x 45 3.77	30 x 35 3.75		Case size ϕ x L (mm) \rightarrow 35 x 45 Ripple Current A/rms \rightarrow 5.75			
6800	682	22 x 50 3.81	25 x 40 3.81				25 x 50 4.27	30 x 40 4.27	35 x 30 4.15				
8200	822		25 x 50 4.37	30 x 40 4.36	35 x 30 4.41			30 x 45 4.83	35 x 35 4.79				
10000	103				35 x 35 4.92			30 x 50 5.49	35 x 40 5.47				
12000	123			30 x 50 5.60	35 x 40 5.58				35 x 45 6.19				
15000	153				35 x 45 6.44								



DIAGRAM OF DIMENSIONS Log Terminal Type



Unit: mm
MECHANICAL SPECIFICATIONS

øD	A	B	C	E	G	H	ø
22	43	35	30	10	5.5	12	45
25	48	38	33	10	6.0	12	45
30	52	42	38	10	6.0	12	45
35	48	48	44	10	7.0	12	30

Dimension: ø D x L(mm)

Ripple Current: A/rms at 120 Hz, 85 °C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC	øD	160V (2C)				200V (2D)				250V (2E)			
		22	25	30	35	22	25	30	35	22	25	30	35
150	151	22 x 25 0.95				22 x 25 0.95				22 x 25 0.91			
180	181	22 x 25 1.04				22 x 25 1.04				22 x 25 1.01			
220	221	22 x 25 1.15				22 x 25 1.15				22 x 35 1.27	25 x 25 1.19		
										22 x 30 1.16			
270	271	22 x 25 1.27				22 x 25 1.27				22 x 35 1.38	25 x 25 1.29		
										22 x 30 1.26			
330	331	22 x 25 1.40				22 x 30 1.43	25 x 25 1.43			22 x 40 1.53	25 x 30 1.46	30 x 25 1.51	
										22 x 35 1.40			
390	391	22 x 30 1.62				22 x 35 1.66	25 x 30 1.67			22 x 45 1.72	25 x 35 1.64	30 x 30 1.72	
						22 x 30 1.50	25 x 25 1.50			22 x 40 1.57		30 x 25 1.55	
470	471	22 x 30 1.73	25 x 25 1.75			22 x 40 1.87	25 x 30 1.78	30 x 25 1.84		22 x 50 1.91	25 x 40 1.86	30 x 30 1.83	
						22 x 35 1.71				22 x 45 1.77			
560	561	22 x 35 1.94	25 x 30 1.95	30 x 25 2.02		22 x 45 2.08	25 x 35 2.01	30 x 30 2.10		22 x 50 2.08	25 x 45 2.13	30 x 35 2.13	
		22 x 30 1.77	25 x 25 1.77			22 x 40 1.92		30 x 25 1.90					35 x 25 2.00
680	681	22 x 40 2.18	25 x 35 2.21	30 x 25 2.14		22 x 50 2.34	25 x 40 2.27	30 x 35 2.39	35 x 25 2.30		25 x 50 2.40	30 x 40 2.42	35 x 35 2.49
		22 x 35 1.95	25 x 30 1.97			22 x 45 2.17		30 x 30 2.18					35 x 30 2.28
820	821	22 x 50 2.54	25 x 40 2.47	30 x 30 2.44	35 x 25 2.50	22 x 50 2.57	25 x 45 2.63	30 x 40 2.77	35 x 35 2.87			30 x 45 2.72	
		22 x 40 2.20	25 x 35 2.24	30 x 25 2.18				30 x 35 2.55	35 x 30 2.63				35 x 35 2.60
1000	102	22 x 50 2.81	25 x 45 2.88	30 x 35 2.87	35 x 30 2.96		25 x 50 2.96	30 x 45 3.13	35 x 35 3.09			30 x 50 3.07	35 x 45 3.18
			25 x 40 2.62	30 x 30 2.58	35 x 25 2.64			30 x 40 2.90		Case size ø x L(mm) →			35 x 40 2.96
1200	122		25 x 50 3.30	30 x 40 3.32	35 x 35 3.43			30 x 50 3.43	35 x 40 3.40				35 x 45 3.71
			25 x 45 3.02	30 x 35 3.01	35 x 30 3.10			30 x 45 3.17	35 x 35 3.12				
1500	152			30 x 45 3.42	35 x 40 3.54			30 x 50 3.70	35 x 50 4.04				
				30 x 40 3.42	35 x 35 3.54								
1800	182			30 x 50 4.12	35 x 50 4.5							35 x 50 4.33	
					35 x 40 3.95								
2200	222				35 x 50 4.74				35 x 50 4.69				
					35 x 45 4.53								



Dimension: \varnothing D x L(mm)
Ripple Current: A/rms at 120 Hz, 85 °C

DIMENSION & PERMISSIBLE RIPPLE CURRENT

V.DC		350V (2V)				400V (2G)				450V (2W)			
μ F	\varnothing D	22	25	30	35	22	25	30	35	22	25	30	35
56	560									22 x 25 0.49			
68	680					22 x 25 0.54				22 x 30 0.59			
										22 x 25 0.53			
82	820	22 x 25 0.60				22 x 25 0.60				22 x 30 0.64	25 x 25 0.64		
100	101	22 x 25 0.66				22 x 30 0.71	25 x 25 0.71			22 x 35 0.72	22 x 30 0.68		
120	121	22 x 30 0.76	25 x 25 0.76			22 x 35 0.83	25 x 35 0.78			22 x 40 0.78	25 x 35 0.79	30 x 25 0.77	
											25 x 30 0.73		
150	151	22 x 35 0.83	25 x 30 0.84	30 x 25 0.87		22 x 40 0.90	25 x 30 0.86	30 x 25 0.89		22 x 50 0.94	25 x 40 0.92	30 x 30 0.91	
						22 x 35 0.84				22 x 45 0.88	25 x 35 0.85		
180	181	22 x 40 0.99	25 x 35 1.01	30 x 25 0.98		22 x 45 1.02	25 x 35 0.98	30 x 30 1.03	35 x 25 1.05	22 x 50 1.07	25 x 45 1.10	30 x 35 1.10	35 x 30 1.13
			25 x 30 0.92			22 x 40 0.96		30 x 25 0.94			25 x 40 1.02	30 x 30 1.01	
220	221	22 x 15 1.14	25 x 40 1.14	30 x 30 1.12		22 x 50 1.15	25 x 40 1.12	30 x 35 1.18	35 x 25 1.13		25 x 50 1.27	30 x 40 1.28	
			25 x 35 1.05					30 x 30 1.08			25 x 45 1.19	30 x 35 1.18	
270	271	22 x 50 1.27	25 x 45 1.30	30 x 35 1.29	35 x 30 1.33		25 x 45 1.28	30 x 40 1.35	35 x 30 1.31			30 x 45 1.41	35 x 35 1.39
			25 x 40 1.21		35 x 25 1.21			30 x 35 1.25				30 x 40 1.32	
330	331		25 x 50 1.53	30 x 40 1.54	35 x 30 1.50		25 x 50 1.46	30 x 45 1.53	35 x 35 1.51			30 x 50 1.63	
								30 x 40 1.44	35 x 30 1.40				35 x 40 1.59
390	391			30 x 45 1.65	35 x 35 1.63			30 x 50 1.83	35 x 40 1.82			30 x 50 1.77	35 x 50 1.94
				30 x 40 1.55				30 x 45 1.73	35 x 35 1.70				
470	471			30 x 50 1.93	35 x 40 1.92			30 x 50 1.99	35 x 45 2.07				35 x 50 2.13
				30 x 45 1.81	35 x 35 1.79				35 x 40 1.94				
560	561				35 x 45 2.20	Case size \varnothing x L(mm) \rightarrow							35 x 50 2.32
					35 x 40 2.07	Ripple Current A/rms \rightarrow							35 x 45 2.19
680	681				35 x 50 2.49								35 x 50 2.51

PART NUMBERING SYSTEM

