

SMD ALUMINUM ELECTROLYTIC CAPACITORS

- CVH SERIES -

FEATURES

- 105°C for 2,000~5,000 hours
- Extra Low Impedance
- Designed for reflow soldering
- Designed for surface mounting on high-density PCB



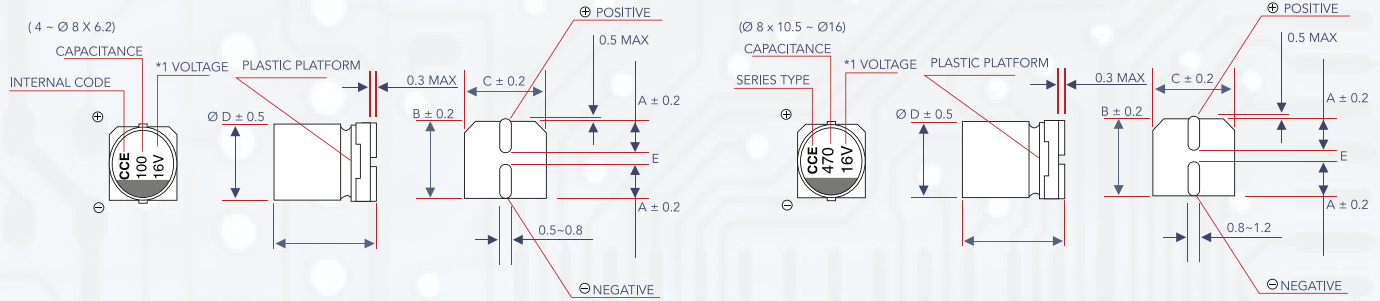
SPECIFICATIONS

ITEM	SPECIFICATION																																							
Operating Temperature Range	-55°C ~ +105°C																																							
Voltage Range	6.3V ~ 100 VDC																																							
Capacitance Tolerance	±20% at 120Hz, 20°C																																							
Leakage Current	The greater value of either 0.01CV or 3µA Condition: µA / after 2 minutes (max)																																							
Dissipation Factor	Measurement: 120Hz Temperature: 20°C																																							
	<table border="1"> <thead> <tr> <th>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>80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>SURGE VOLTAGE (V)</td> <td>7.3</td> <td>11.5</td> <td>18.4</td> <td>28.8</td> <td>40.3</td> <td>57.5</td> <td>72.5</td> <td>92</td> <td>115</td> </tr> <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>0.12</td> <td>0.12</td> <td>0.12</td> </tr> <tr> <td></td> <td>0.34</td> <td>0.29</td> <td>0.22</td> <td>0.20</td> <td>0.16</td> <td>0.12</td> <td>0.14</td> <td>0.14</td> <td>0.14</td> </tr> </tbody> </table>	RATED VOLTAGE (V)	6.3	10	16	25	35	50	63	80	100	SURGE VOLTAGE (V)	7.3	11.5	18.4	28.8	40.3	57.5	72.5	92	115	TAN δ (MAX)	0.28	0.24	0.20	0.16	0.14	0.12	0.12	0.12	0.12		0.34	0.29	0.22	0.20	0.16	0.12	0.14	0.14
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Impedance Ratio at Low Temperature	Measurement: 120Hz, +20°C																																							
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Endurance	After applying rated working voltage for 2000 / 3000 / 5000 hours at +105°C ± 2°C, and then being stabilized at +20°C, capacitors shall meet the following limits:																																							
	TEST	∅D X L ≤ 6.3 X 5.7L mm 2000H, 6.3φ x 7.7L, 8φ x 6.5L, 10φ x 7.7L 3000H, ∅D ≥ 8mm 5000H																																						
	CAPACITANCE CHANGE	Within ± 30% of initial value																																						
	DISSIPATION FACTOR	Less than 300% of the specified value																																						
	LEAKAGE CURRENT	Within the initial limit																																						
Shelf Life	After storage for 1000h at + 105°C ± 2°C with no voltage applied and then being stabilized at +20°C, capacitors shall meet the limits specified in endurance.																																							
Resistance to Soldering Heat	After reflow and soldering and then being stabilized at +20°C, capacitors shall meet the following limits																																							
	CAPACITANCE CHANGE	Within ± 10% of initial value																																						
	DISSIPATION FACTOR	Within the initial limit																																						
	LEAKAGE CURRENT	Within the initial limit																																						

PART NUMBER

CVH	1C	100	M	D60	R
SERIES NAME	RATED VOLTAGE	CAPACITANCE	TOLERANCE	CASE SIZE	PACKAGE TYPE
Series is represented by a three/four digit code	OJ - 6.3V 1A - 10V 1C - 16V 1E - 25V 1V - 35V 1H - 50V 1J - 63V 1K - 80V 2A - 100	010 - 1µF 4R7 - 4.7µF 100 - 10µF 471 - 470µF 102 - 1000µF	M: -20% ~ +20%	D60-4x5.8 E60-5x5.8 F60-6.3x5.8 F80-6.3x7.7 G68-8x6.5 G10-8x10.5 H10-10x10.5 H13-10x13.5 K14-12.5x13.5 K16-12.5x16 L17-16x16.5	R - Taping polarity with reel package in 380mm

DIMENSIONS



- *1 Voltage Mark for 6.3 V is [6V] or [6.3V]

ØD x L	4 x 5.8	5 x 5.8	6.3 x 5.8 / 7.7	8 x 6.5 / 10.5	10 x 7.7	10x10.5 / 13.5	12.5 x 13.5 / 16	16 x 16.5
A	1.8	2.1	2.4	3.3	3.2	3.2	4.7	5.5
B	4.3	5.3	6.6	8.3	10.3	10.3	13	17
C	4.3	5.3	6.6	8.3	10.3	10.3	13	17
E	1.0	1.3	2.2	2.2 / 3.1	4.4	4.4	4.4	6.4
L	5.8 ± 0.6	5.8 ± 0.6	5.8 / 7.7 ± 0.6	6.5/10.5 ± 0.6	7.7 ± 0.6	10.5/13.5 ± 1.0	13.5/16 ± 1.0	16.5 ± 1.0

FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

FREQUENCY	50Hz	120Hz	1kHz	10kHz≤
CAPACITANCE: C (µF)				
FULL CAPACITANCE	0.60	0.70	0.85	1.00

DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE

- Allowable Ripple (mA ms) at 85°C 120Hz

WV/V	CAP (µF)	6.3			10			16		
		CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)	CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)	CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)
10	100	--	--	--	--	--	--	4 x 5.8	145	80
22	220	4 x 5.8	1.45	80	4 x 5.8	1.45	80	5 x 5.8	0.80	150
33	330	4 x 5.8	1.45	80	5 x 5.8	0.80	150	5 x 5.8	0.80	150
		5 x 5.8	0.80	150				6.3 x 5.8	0.44	230
47	470	5 x 5.8	0.80	150	6.3 x 5.8	0.44	230	6.3 x 5.8	0.44	230
68	680	--	--	--	--	--	--	6.3 x 5.8	0.44	230
100	101	5 x 5.8	0.80	150	6.3 x 5.8	0.44	230	6.3 x 5.8	0.44	230
		6.3 x 5.8	0.44	230				8 x 6.5	0.36	280
150	151	6.3 x 5.8	0.44	230	6.3 x 5.8	0.44	230	6.3 x 7.7	0.36	280
		8 x 6.5	0.36	280						
220	221	6.3 x 5.8	0.44	230	6.3 x 7.7	0.36	280	6.3 x 7.7	0.36	280
		6.3 x 7.7	0.36	280	8 x 6.5	0.36	280			
330	331	6.3 x 7.7	0.36	280	8 x 10.5	0.17	450	8 x 10.5	0.17	450
		8 x 6.5	0.36	280						
470	471	8 x 10.5	0.17	450	8 x 10.5	0.17	450	8 x 10.5	0.17	450
		10 x 7.7	0.17	450						
680	681	8 x 10.5	0.17	450	10 x 10.5	0.09	670	10 x 10.5	0.09	670
		10 x 7.7	0.17	450						
1000	102	8 x 10.5	0.17	450	10 x 10.5	0.09	670	10 x 13.5	0.08	720
								12.5 x 13.5	0.07	820
1500	152	10 x 10.5	0.09	670	10 x 13.5	0.08	720	--	--	--
		10 x 13.5	0.08	720	12.5 x 13.5	0.07	820			
2200	222	12.5 x 13.5	13.5	820	12.5 x 13.5	0.07	820	--	--	--



DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE

WV/V		25			35			50		
CAP (μF)		1E			1V			1H		
		CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)	CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)	CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)
1	1R0	--	--	--	--	--	--	4 x 5.8	2.90	60
2.2	2R0	--	--	--	--	--	--	4 x 5.8	2.90	60
3.3	3R3	--	--	--	--	--	--	4 x 5.8	2.90	60
4.7	4R7	--	--	--	4 x 5.8	1.45	80	4 x 5.8	2.90	60
								5 x 5.8	1.52	85
10	100	4 x 5.8	1.45	80	4 x 5.8	1.45	80	6.3 x 5.8	0.88	165
					5 x 5.8	0.80	150			
22	220	5 x 5.8	0.80	150	5 x 5.8	0.80	150	6.3 x 5.8	0.88	165
					6.3 x 5.8	0.44	230			
33	330	5 x 5.8	0.80	150	6.3 x 5.8	0.44	230	6.3 x 7.7	0.68	185
		6.3 x 5.8	0.44	230						
47	470	6.3 x 5.8	0.44	230	6.3 x 5.8	0.44	230	6.3 x 7.7	0.68	185
								8 x 6.5	0.68	185
								8 x 10.5	0.34	360
68	680	6.3 x 5.8	0.44	230	6.3 x 7.7	0.36	280	8 x 10.5	0.34	360
					8 x 6.5	0.36	280			
100	101	6.3 x 7.7	0.36	280	6.3 x 7.7	0.36	280	8 x 10.5	0.34	360
		8 x 6.5	0.36	280	8 x 10.5	0.17	450	10 x 10.5	0.18	560
150	151	8 x 10.5	0.17	450	8 x 10.5	0.17	450	10 x 10.5	0.18	560
					10 x 7.7	0.17	450			
220	221	8 x 10.5	0.17	450	8 x 10.5	0.17	450	10 x 10.5	0.18	560
		10 x 7.7	0.17	450	10 x 10.5	0.09	670	12.5 x 13.5	0.12	650
330	331	8 x 10.5	0.17	450	10 x 10.5	0.09	850	12.5 x 13.5	0.12	650
					12.5 x 13.5	0.07	820			
470	471	10 x 10.5	0.09	670	10 x 10.5	0.08	720	--	--	--
					12.5 x 13.5	0.07	820			
680	681	10 x 13.5	0.08	720	--	--	--	--	--	--
		12.5 x 13.5	0.07	820						
1000	102	12.5 x 13.5	0.07	820	--	--	--	--	--	--

WV/V		63			80			100		
CAP (μF)		1J			1K			2A		
		CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)	CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)	CASE SIZE φDXL (MM)	IMPEDANCE (Ω) MAX AT 100kHz, 20°C	RATED RIPPLE CURRENT mArms (100kHz, 105°C)
3.3	3R3	--	--	--	5 x 5.8	5.00	25	--	--	--
4.7	4R7	5 x 5.8	2.90	60	6.3 x 5.8	3.00	40	--	--	--
10	100	6.3 x 5.8	1.50	80	6.3 x 7.7	2.40	60	--	--	--
					8 x 6.5	2.40	60			
22	220	6.3 x 7.7	1.20	120	8 x 10.5	1.30	130	8 x 10.5	1.30	130
		8 x 6.5	1.20	120						
33	330	8 x 10.5	0.65	250	8 x 10.5	1.30	130	10 x 10.5	0.70	200
								10 x 10.5	0.70	200
47	470	8 x 10.5	0.65	250	10 x 10.5	0.70	200	10 x 13.5	0.40	400
								12.5 x 13	0.32	500
68	680	8 x 10.5	0.65	250	10 x 10.5	0.40	400	12.5 x 13.5	0.32	500
					12.5 x 13.5	0.32	500			
100	101	10 x 10.5	0.35	400	10 x 13.5	0.40	400	12.5 x 13.5	0.32	500
		12.5 x 13.5	0.16	800	12.5 x 13.5	0.32	500			
150	151	12.5 x 13.5	0.16	800	12.5 x 13.5	0.32	500	--	--	--
220	221	12.5 x 13.5	0.16	800	--	--	--	--	--	--