

SMD ALUMINUM ELECTROLYTIC CAPACITORS

- CVH SERIES -

FEATURES

- 4Ø~18Ø, 105°C, 2,000 ~ 5,000 hours assured
- Large capacitance with ultra low impedance capacitors
- Designed for surface mounting on high density PC board
- RoHS Compliance



CONSTRUCTION AND DIMENSIONS

FIG. 1

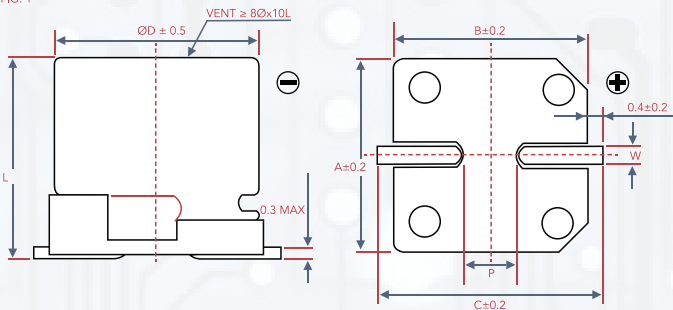
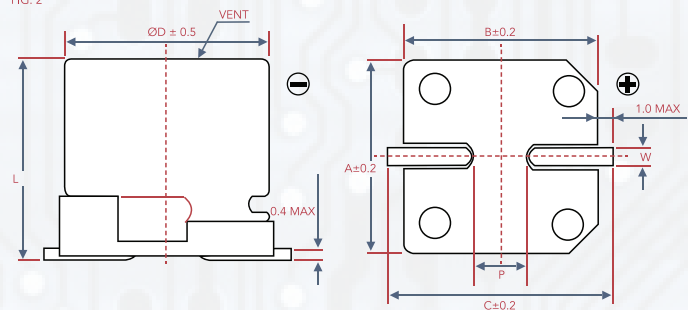


FIG. 2



LEAD SPACING AND DIAMETER

ØD	L	A	B	C	W	P ± 0.2	FIG NO.
4	5.7 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	6.5 ± 0.3	8.4	8.4	9.0	0.5 ~ 0.8	2.3	1
8	10 ± 0.5	8.4	8.4	9.0	0.7 ~ 1.1	3.1	1
10	7.7 ± 0.3	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
10	10 ± 0.5	10.4	10.4	11.0	0.7 ~ 1.3	4.7	1
12.5	13.5 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
12.5	16 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
16	16.5 ± 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4	2
16	21.5 ± 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4	2
18	16.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2
18	21.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2

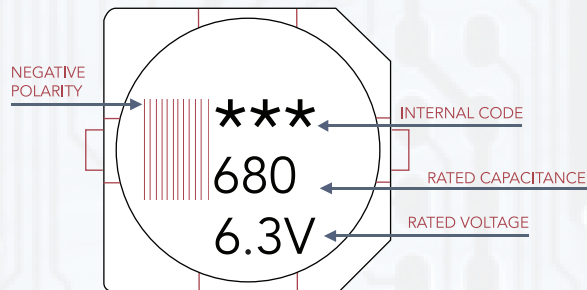
PART NUMBERING

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 - 100V	010 - 1µF 4R7 - 4.7µF 100 - 10µF 471 - 470µF 102 - 1000µF	M: -20% ~ +20%	D60 - 4x5.7 E60 - 5x5.7 F60 - 6.3x5.7 F80 - 6.3x7.7 G68 - 8x6.5 G10 - 8x10.0 H82 - 10x8.0 H10 - 10x10.0 H13 - 10x13.0 K14 - 12.5x13.5 K16 - 12.5x16.0 L17 - 16x16.5 L22 - 16x21.5 M17 - 18x16.5 M22 - 18x21.5	R - Taping polarity with reel package in 380mm

SPECIFICATIONS

ITEM	SPECIFICATION																																
Category Temperature Range	-55°C ~ +105°C																																
Capacitance Tolerance	±20% (at 120Hz, 20°C)																																
Leakage Current (20°C)	I=0.01CV or 3 (µA) whichever is greater (after 2 minutes) Where, C = rated capacitance in µF, V= rated DC working voltage in V																																
Tan δ at 120Hz, 20°C	<table border="1"> <thead> <tr> <th>RATED VOLTAGE</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>TAN δ (MAX)</td> <td>0.30</td> <td>0.26</td> <td>0.22</td> <td>0.16</td> <td>0.13</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> <td>0.07</td> </tr> </tbody> </table> <p>When capacitance exceeds 1,000 µF, 0.02 shall be added every 1,000 µF increase</p>	RATED VOLTAGE	6.3	10	16	25	35	50	63	80	100	TAN δ (MAX)	0.30	0.26	0.22	0.16	0.13	0.10	0.08	0.08	0.07												
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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"> <thead> <tr> <th colspan="2">RATED VOLTAGE</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 rowspan="2">IMPEDANCE RATIO</td> <td>Z(-25°C) / Z(+20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-55°C) / Z(+20°C)</td> <td>8</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>	RATED VOLTAGE		6.3	10	16	25	35	50	63	80	100	IMPEDANCE RATIO	Z(-25°C) / Z(+20°C)	4	3	2	2	2	2	2	2	2	Z(-55°C) / Z(+20°C)	8	5	4	3	3	3	3	3	3
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Endurance	<table border="1"> <tbody> <tr> <td>TEST TIME</td> <td>2,000 Hrs for ØD ≥ 6.3mm & 8x6.5L & 10x7.7L; 5,000 Hrs for ØD ≥ 8mm</td> </tr> <tr> <td>CAPACITANCE CHANGE</td> <td>Within ±30% of initial value</td> </tr> <tr> <td>TAN δ</td> <td>Less than 300% of specified value</td> </tr> <tr> <td>LEAKAGE CURRENT</td> <td>Within specified value</td> </tr> </tbody> </table> <p>*The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2,000 ~ 5,000 hrs at 105°C.</p>	TEST TIME	2,000 Hrs for ØD ≥ 6.3mm & 8x6.5L & 10x7.7L; 5,000 Hrs for ØD ≥ 8mm	CAPACITANCE CHANGE	Within ±30% of initial value	TAN δ	Less than 300% of specified value	LEAKAGE CURRENT	Within specified value																								
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MARKING



DIMENSION & PERMISSIBLE RIPPLE CURRENT

VDC	CONTENTS	6.3V (OJ)			10V (1A)			16V (1C)			25V (1E)			35V (1V)			50V (1H)			63V (1J)			80V (1K)			100V (2A)														
		ØDxL	IMP.	mA	ØDxL	IMP.	mA	ØDxL	IMP.	mA	ØDxL	IMP.	mA	ØDxL	IMP.	mA	ØDxL	IMP.	mA	ØDxL	IMP.	mA	ØDxL	IMP.	mA	ØDxL	IMP.	mA												
1	010															4x5.7	2.9	60																						
2.2	2R2															4x5.7	2.9	60																						
3.3	3R3															4x5.7	2.9	60																						
4.7	4R7												4x5.7	1.35	80	5x5.7	1.52	85	5x5.7	1.90	70																			
10	100							4x5.7	1.35	80	4x5.7	1.35	80	5x5.7	0.80	150	6.3x5.7	0.88	165	6.3x5.7	1.20	130																		
22	220	4x5.7	1.35	80	4x5.7	1.35	80	5x5.7	0.80	150	5x5.7	0.80	150	6.3x5.7	0.44	230	6.3x5.7	0.88	165	6.3x7.7	0.90	150	8x10	1.3	130	8x10	1.3	130												
33	330	4x5.7	1.35	80	5x5.7	0.80	150	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x5.7	0.68	165	8x10	0.50	280	8x10	1.3	130	10x10	0.7	200												
47	470	5x5.7	0.80	150	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x5.7	0.68	165	8x10	0.50	280	10x10	0.7	200	10x10	0.7	200												
68	680												8x6.5	0.36	280	8x10	0.34	369																						
100	101	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x7.7	0.36	280	8x6.5	0.36	280	8x10	0.17	450	6.3x7.7	0.40	350	8x10	0.34	369	10x10	0.25	450	10x10	0.7	200	12.5x13.5	0.32	450						
150	151	6.3x5.7	0.44	230	6.3x5.7	0.44	230	6.3x5.7	0.36	280	8x6.5	0.36	280	8x10	0.17	450	10x7.7	0.17	450	8x10	0.17	450	10x10	0.18	553	12.5x13.5	0.15	700	12.5x13.5	0.32	450	12.5x16	0.26	550						
220	221	6.3x7.7	0.36	280	6.3x5.7	0.36	280	8x6.5	0.36	280	6.3x5.7	0.36	280	8x10	0.17	450	10x7.7	0.17	450	8x10	0.17	450	10x10	0.09	670	10x10	0.09	670	12.5x13.5	0.15	700	12.5x16	0.26	550	16x16.5	0.17	650	18x21.5	0.15	950
330	331	8x6.5	0.36	280	8x10	0.17	450	10x7.7	0.17	450	10x7.7	0.17	450	8x10	0.17	450	10x10	0.09	670	12.5x13.5	0.070	820	12.5x13.5	0.12	650	16x16.5	0.082	900	16x16.5	0.17	650	18x16.5	0.15	850	16x21.5	0.15	950			
470	471	8x10	0.17	450	10x7.7	0.17	450	10x7.7	0.17	450	10x10	0.09	670	10x10	0.09	670	12.5x16	0.060	950	16x16.5	0.073	1,000	16x16.5	0.082	900	16x21.5	0.15	900	18x21.5	0.15	950									
680	681	8x10	0.17	450	10x7.7	0.17	450	10x10	0.09	670	10x10	0.09	670	12.5x13.5	0.070	820	12.5x16	0.060	950	16x16.5	0.073	1,000	18x16.5	0.080	1,150	16x21.5	0.080	1,150	18x21.5	0.15	950									
1000	102	8x10	0.17	450	10x10	0.09	670	12.5x13.5	0.070	820	12.5x16	0.060	950	16x16.5	0.054	1,260	18x16.5	0.066	1,500	18x21.5	0.06	1,250																		
1200	122										12.5x16	0.05	1450																											
1500	152	10x10	0.09	820	12.5x13.5	0.070	820	12.5x16	0.060	950	16x16.5	0.054	1,260	18x16.5	0.048	1,500	16x21.5	0.038	1,630	18x21.5	0.05	1,620																		
2200	222	12.5x13.5	0.070	820	12.5x16	0.060	950	16x16.5	0.054	1,260	16x16.5	0.054	1,260	18x21.5	0.038	1,750																								
3300	332	12.5x16	0.060	950	16x16.5	0.054	1,260	16x16.5	0.054	1,260	18x16.5	0.048	1,500	16x21.5	0.038	1,630	18x21.5	0.038	1,750																					
4700	472	16x16.5	0.054	1,260	16x16.5	0.054	1,260	18x16.5	0.048	1,500	16x21.5	0.038	1,630																											
6800	682	18x16.5	0.048	1,500	16x21.5	0.038	1,630	16x21.5	0.038	1,630																														
8200	822	18x16.5	0.048	1,500	16x21.5	0.038	1,630																																	

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