

# SMD ALUMINUM ELECTROLYTIC CAPACITORS

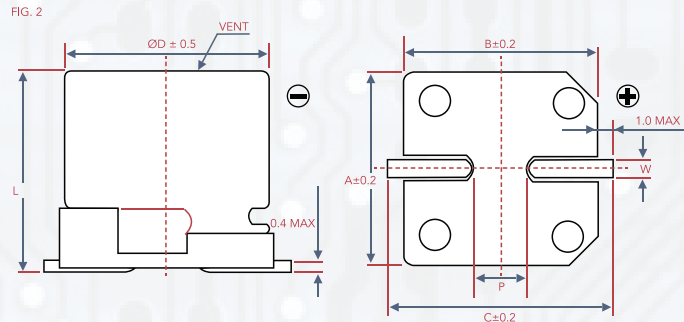
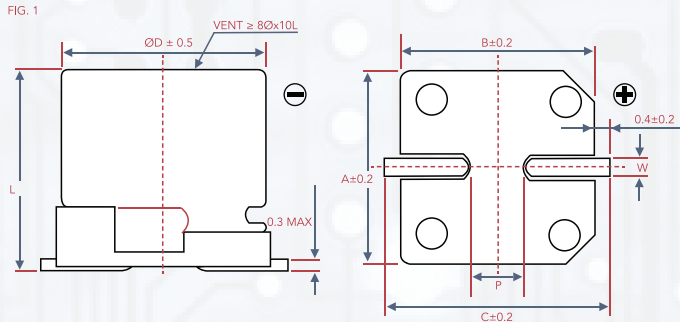
## - CVH SERIES -

### 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



### 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

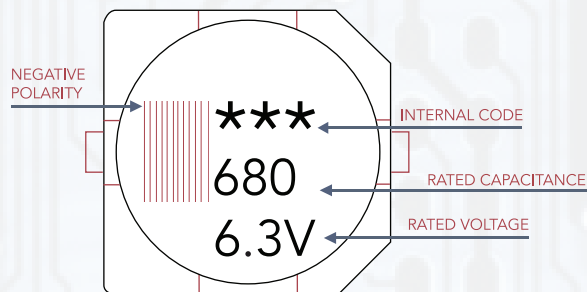
### PART NUMBERING

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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## MARKING



# DIMENSION & PERMISSIBLE RIPPLE CURRENT

VDC	6.3V (OJ)			10V (1A)			16V (1C)			25V (1E)			35V (1V)			50V (1H)			63V (1J)			80V (1K)			100V (2A)				
	CONTENTS	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	
µF																													
1	010																												
2.2	2R2																												
3.3	3R3																												
4.7	4R7																												
10	100																												
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																												
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	8x10	0.17	450	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	8x10	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	6.3x5.7	0.36	280	8x10	0.17	450	8x10	0.17	450	10x10	0.09	670	12.5x13.5	0.15	700	12.5x16	0.26	550	16x16.5	0.17	650	
330	331	8x6.5	0.36	280	8x10	0.17	450	8x10	0.17	450	8x10	0.17	450	10x10	0.09	670	12.5x13.5	0.12	650	16x16.5	0.082	900	16x16.5	0.17	650	18x16.5	0.15	850	
470	471	8x10	0.17	450	10x7.7	0.17	450	8x10	0.17	450	10x10	0.09	670	10x10	0.09	670	12.5x16	0.060	950	16x16.5	0.073	1,000	16x16.5	0.15	900	18x21.5	0.15	950	
680	681	8x10	0.17	450	10x7.7	0.17	450	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							
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	18x21.5	0.038	1,750																			

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