SMD ALUMINUM ELECTROLYTIC CAPACITORS
- CVL SERIES -

FEATURES

- Endurance: 105°C, 2000H
- Low Impedance
- Designed for reflow soldering
- Designed for surface mounting on high-density PCB



SPECIFICATIONS

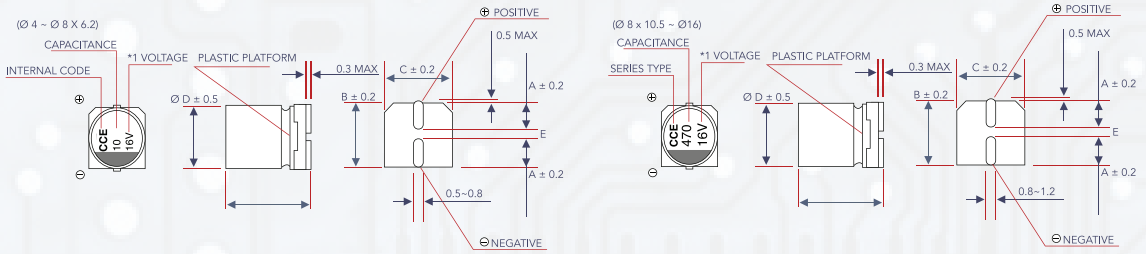
ITEM	SPECIFICATION										
Operating Temperature Range	-55°C ~ +105°C										
Voltage Range	6.3V ~ 100 VDC										
Capacitance Range	1 ~ 4700µF										
Capacitance Tolerance	±20% at 120Hz, 20°C										
Leakage Current	I ≤ 0.01 CV or 3µA whichever is greater (after 2 minutes)										
Dissipation Factor	Measurement: 120Hz Temperature: 20°C										
	RATED VOLTAGE (V)		6.3	10	16	25	35	50	63	80	100
	TAN δ (MAX)	Ø4 ~ Ø10	0.28	0.22	0.20	0.16	0.14	0.12	0.12	0.12	0.12
		Ø12.5 ~ Ø16	0.34	0.28	0.22	0.20	0.16	0.14	0.14	0.14	0.14
Stability At Low Temperature	Measurement: 120Hz										
	RATED VOLTAGE (V)			6.3	10	16	25	35	50	63	80	100
	IMPEDANCE RATIO ZT / Z20 (MAX.)	Ø4 ~ Ø10	Z (-25°C) / Z (20°C)	4	4	3	3	2	2	2	2	2
			Z (-55°C) / Z (20°C)	10	7	5	5	4	4	3	4	4
		Ø12.5 ~ Ø16	Z (-25°C) / Z (20°C)	4	3	3	3	2	2	2	2	2
			Z (-55°C) / Z (20°C)	10	7	5	5	4	4	3	4	4
Load Life	After applying rated working voltage for 2000 hours at +105°C ± 2°C, and then being stabilized at +20°C, capacitors shall meet the following limits.										
	CAPACITANCE CHANGE	Within ± 25% of initial value									
	DISSIPATION FACTOR	Less than 250% of the initial value									
	LEAKAGE CURRENT	Within the initial limit									
Shelf Life	After storage for 1000 h 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 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

CVL	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	1R0 - 1µF 4R7 - 4.7µF 100 - 10µF 471 - 470µF 102 - 1000µF	M: -20% ~+20%	D60 - 4x5.4 E60 - 5x5.4 F60 - 6.3x5.4 F80 - 6.3x7.7 G68 - 8x6.5 G10 - 8x10.5 H8 - 10x7.7 H10 - 10x10.5 H13 - 10x13.5 K14 - 12.5x13.5	R - Taping polarity with reel package in 380mm D60 - 2000 / REEL E60 - 2000 / REEL F60 - 1000 / REEL F80 - 1000 / REEL G68 - 1000 / REEL G10 - 500 / REEL H8 - 500 / REEL H10 - 500 / REEL H13 - 400 / REEL K14 - 400 / REEL

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DIMENSIONS



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

ØD x L	4 x 5.4	5 x 5.4	6.3 x 5.4 (6.3 x 7.7)	8 x 6.5 (8 x 10.5)	10 x 7.7 (10 x 10.5) (10 x 13.5)	12.5 x 13.5
A	2.0	2.2	2.6	3.0	3.3	4.9
B	4.3	5.3	6.6	8.4	10.4	13.0
C	4.3	5.3	6.6	8.4	10.4	13.0
E ± 0.2	1.0	1.4	1.9	2.2 / 3.1	4.7	4.7
L	5.4 ± 0.6	5.4 ± 0.6	5.4 / 7.7 ± 0.6	10.5 ± 0.6	10.5 / 13.5 ± 1.0	13.5 / 16 ± 1.0

FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

FREQUENCY		50Hz	120Hz	1kHz	10kHz≤
COEFFICIENT	FULL CAPACITANCE	0.60	0.70	0.85	1.00

DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE

WV/V		6.3			10			16		
		0J			1A			1C		
CAP (µF)		CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz	CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz	CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz
100	10							4 x 5.4	3.00	60
220	22	4 x 5.4	3.00	60	4 x 5.4	3.00	60	4 x 5.4	3.00	60
								5 x 5.4	1.80	95
330	33	4 x 5.4	3.00	60	4 x 5.4	3.00	60	5 x 5.4	1.80	95
								6.3 x 5.4	1.00	140
470	47	5 x 5.4	1.80	95	5 x 5.4	1.80	95	5 x 5.4	1.80	95
					6.3 x 5.4	1.00	140	6.3 x 5.4	1.00	140
680	68							8 x 6.5	0.60	230
101	100	5 x 5.4	1.80	100	5 x 5.4	1.80	100	6.3 x 5.4	1.00	140
		6.3 x 5.4	1.00	1.40	6.3 x 5.4	1.00	140	6.3 x 7.7	0.60	230
								8 x 6.5	0.60	230
151	150				6.3 x 5.4	1.00	140	6.3 x 7.7	0.60	230
								8 x 10.5	0.45	450
221	220	6.3 x 5.4	1.00	140	6.3 x 5.4	1.00	140	6.3 x 7.7	0.60	230
		6.3 x 7.7	0.60	230	6.3 x 7.7	0.60	230	8 x 6.5	0.60	230
					8 x 10.5	0.45	450	8 x 10.5	0.45	450
331	330	6.3 x 7.7	0.60	230	8 x 10.5	0.45	450	8 x 10.5	0.45	450
		8 x 10.5	0.45	450				10 x 7.7	0.45	450
471	470	6.3 x 7.7	0.60	230	8 x 10.5	0.45	450	8 x 10.5	0.80	450
		8 x 10.5	0.45	450				10 x 10.5	0.25	670
681	680							10 x 10.5	0.25	670
821	820	8 x 10.5	0.40	450						
		10 x 10.5	0.25	670						
102	1000	10 x 10.5	0.25	670	10 x 10.5	0.25	670	10 x 10.5	0.25	670
								10 x 13.5	0.15	750
152	1500	10 x 10.5	0.25	670				12.5 x 13.5	0.12	820
222	2200	12.5 x 13.5	0.12	820	12.5 x 13.5	0.12	820			

MS LEVEL 1

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DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE

WV/V		25			35			50		
		1E			1V			1H		
CAP (µF)		CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz	CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz	CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz
1R0	1							4 x 5.4	5.00	30
2R2	2.2							4 x 5.4	5.00	30
3R3	3.3							4 x 5.4	5.00	30
4R7	4.7	4 x 5.4	3.00	60	4 x 5.4	3.00	60	4 x 5.4	5.00	30
								5 x 5.4	3.00	50
100	10	4 x 5.4	3.00	60	4 x 5.4	3.00	60	5 x 5.4	3.00	50
		5 x 5.4	1.80	95	5 x 5.4	1.80	95	6.3 x 5.4	2.00	70
220	22	5 x 5.4	1.80	95	5 x 5.4	1.80	95	6.3 x 5.4	2.00	70
		6.3 x 5.4	1.00	140	6.3 x 5.4	1.00	140	6.3 x 7.7	1.00	120
								8 x 6.5	1.00	120
330	33	5 x 5.4	1.80	95	6.3 x 5.4	1.00	140	6.3 x 7.7	1.00	120
		6.3 x 5.4	1.00	140	8 x 6.5	0.60	230	8 x 10.5	0.80	280
470	47	6.3 x 5.4	1.00	140	6.3 x 5.4	1.00	140	6.3 x 7.7	1.00	120
					6.3 x 7.7	0.60	230	8 x 6.5	1.00	120
					8 x 6.5	0.60	230	8 x 10.5	0.45	450
					8 x 10.5	0.45	450			
101	100	8 x 10.5	0.45	450	8 x 6.5	0.60	230	10 x 7.7	0.80	300
		6.3 x 7.7	0.50	255	8 x 10.5	0.45	450	10 x 10.5	0.45	450
151	150	8 x 10.5	0.45	450	8 x 10.5	0.45	450	10 x 10.5	0.45	450
					10 x 7.7	0.45	450			
221	220	8 x 10.5	0.45	450	8 x 10.5	0.40	450	10 x 10.5	0.45	500
		10 x 7.7	0.45	450						
		10 x 10.5	0.25	670	10 x 10.5	0.25	670	10 x 13.5	0.35	550
331	330	6.3 x 7.7	0.16	600	10 x 10.5	0.25	670	12.5 x 13.5	0.25	650
		8 x 10.5	0.40	450						
		10 x 10.5	0.25	670						
471	470	10 x 10.5	0.25	670	10 x 13.5	0.15	750			
681	680	10 x 13.5	0.15	750	12.5 x 13.5	0.12	820			
102	1000	12.5 x 13.5	0.11	820						

WV/V		63			80			100		
		1J			1K			2A		
CAP (µF)		CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz	CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz	CASE SIZE Ø D X L (MM)	IMPEDANCE (Ω) AT 20 °C 100kHz	RIPPLE CURRENT (mA rms) at 105°C 100kHz
4R7	4.7	5 x 5.4	5.00	50				5 x 5.4	5.00	25
								6.3 x 5.4	5.00	40
100	10	6.3 x 5.4	3.00	80	6.3 x 7.7	3.00	60	6.3 x 7.7	3.00	60
								8 x 6.5	3.00	60
220	22	6.3 x 7.7	2.50	100	8 x 10.5	2.00	130	8 x 10.5	2.00	130
								10 x 10.5	1.50	180
330	33	8 x 10.5	2.00	250	10 x 10.5	1.50	180	10 x 10.5	1.50	180
								10 x 13.5	1.20	210
470	47	8 x 10.5	2.00	250	8 x 10.5	2.00	130	10 x 10.5	1.50	180
		10 x 7.7	2.00	250	10 x 10.5	1.50	180	10 x 13.5	1.20	240
		10 x 10.5	1.50	300	10 x 13.5	1.20	240	12.5 x 13.5	0.85	500
101	100	10 x 10.5	1.50	300	10 x 10.5	1.50	180	12.5 x 13.5	0.85	500
		10 x 13.5	1.00	400	10 x 13.5	1.20	240			
		12.5 x 13.5	0.85	500	12.5 x 13.5	0.85	500			
151	150				12.5 x 13.5	0.85	500			
221	220	12.5 x 13.5	0.65	550						