

**CV3 Series**



**Features**

- 3 φ ~ 18 φ , 85°C, 2,000 hours assured
- Chip type large capacitance capacitors
- Designed for surface mounting on high density PC board
- RoHS Compliance



Marking color: Black

**Specifications**

Items	Performance																					
Category Temperature Range	-40°C ~ +85°C																					
Capacitance Tolerance	±20% (at 120Hz, 20°C)																					
Leakage Current (at 20°C)	Rated Voltage	6.3 ~ 100V																				
	Time	after 2 minutes																				
	Case size	3 ~ 10 φ      12.5 ~ 18 φ																				
	Leakage Current	I = 0.01CV or 3μA, whichever is greater																				
Tanδ (at 120Hz, 20°C)	Rated Voltage	4   6.3   10   16   25   35   50   63   100   160 ~ 250   400 ~ 450																				
	Case size	3 ~ 10 φ   0.42   0.28   0.24   0.20   0.14   0.12   0.10   0.10   0.10   -   -																				
Low Temperature Characteristics (at 120Hz)	Rated Voltage	4.0   6.3   10   16   25   35   50   63   100   160 ~ 250   400 ~ 450																				
	Impedance Ratio	Z(-25°C) / Z(+20°C)   φ D < 12.5																				
		Z(-40°C) / Z(+20°C)   φ D ≥ 12.5																				
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Endurance	Test Time	2,000 Hrs																				
	Capacitance Change	Within ±20% of initial value (4V: ±30%)																				
	Tanδ	Less than 200% of specified value (4V: ±300%)																				
	Leakage Current	Within specified value																				
Shelf Life Test	Test time: 1,000 hours; other items are the same as those for the Endurance. The rated voltage shall be applied to the capacitors before the measurements for 160 ~ 450V (Refer to JIS C 5101-4 4.1).																					
Ripple Current & Frequency Multipliers	<table border="1"> <thead> <tr> <th>Cap. (μF)</th> <th colspan="4">Freq. (Hz)</th> </tr> <tr> <th></th> <th>50</th> <th>120</th> <th>1k</th> <th>10k up</th> </tr> </thead> <tbody> <tr> <td>Under 1,000</td> <td>0.80</td> <td>1.00</td> <td>1.25</td> <td>1.40</td> </tr> <tr> <td>1,000 &lt; C ≤ 6,800</td> <td>0.85</td> <td>1.00</td> <td>1.15</td> <td>1.25</td> </tr> </tbody> </table>		Cap. (μF)	Freq. (Hz)					50	120	1k	10k up	Under 1,000	0.80	1.00	1.25	1.40	1,000 < C ≤ 6,800	0.85	1.00	1.15	1.25
Cap. (μF)	Freq. (Hz)																					
	50	120	1k	10k up																		
Under 1,000	0.80	1.00	1.25	1.40																		
1,000 < C ≤ 6,800	0.85	1.00	1.15	1.25																		

**Diagram of Dimensions**

Fig. 1

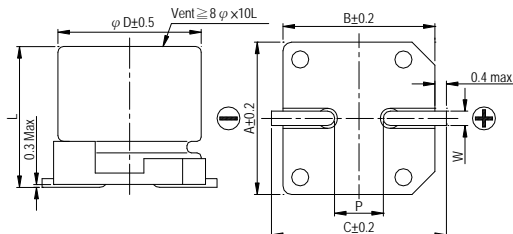
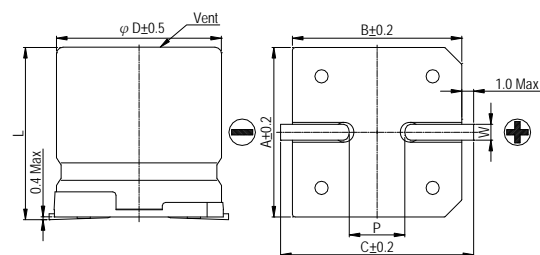


Fig. 2



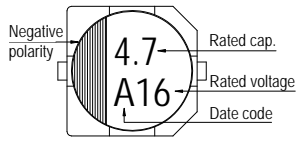
**Lead Spacing and Diameter**

Unit: mm

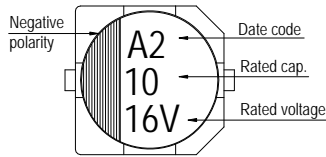
φ D	L	A	B	C	W	P ± 0.2	Fig. No.
3	5.3 ± 0.2	3.3	3.3	4.1	0.45 ~ 0.75	0.8	1
4	5.3 ± 0.2	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.3 ± 0.2	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.3 ± 0.2	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	6.5 ± 0.3	8.4	8.4	9.0	0.5 ~ 0.8	2.3	1
8	10 ± 0.5	8.4	8.4	9.0	0.7 ~ 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

**Marking**

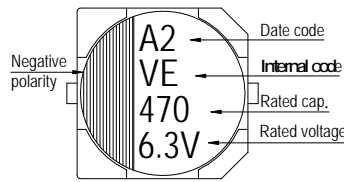
φ D = 3 mm



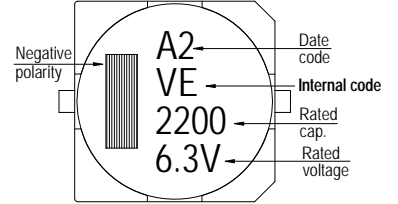
φ D = 4 ~ 6.3mm



φ D = 8 ~ 10 mm



φ D ≥ 12.5mm



Dimension: φ D × L(mm)

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

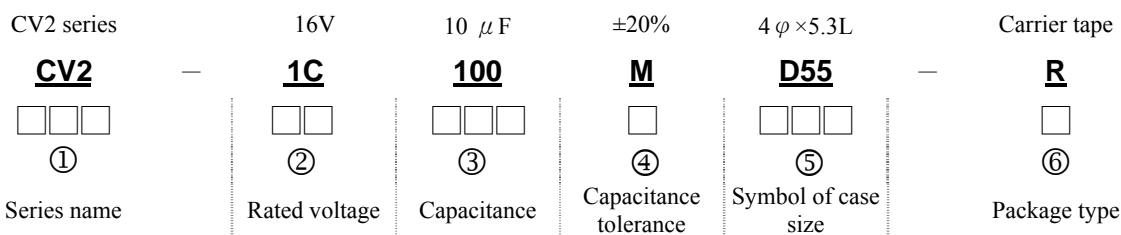
**Dimension & Permissible Ripple Current**

V. DC μF	Contents	4V (0G)		6.3V (0J)		10V (1A)		16V (1C)		25V (1E)		35V (1V)		50V (1H)		63 (1J)	
		φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA
1	010																
2.2	2R2													4×5.3	10	4×5.3	8
3.3	3R3													4×5.3	14	4×5.3	12
4.7	4R7					3×5.3	14	3×5.3	14	4×5.3	26	4×5.3	26	4×5.3	20	5×5.3	25
10	100			3×5.3	16	4×5.3	26	4×5.3	26	5×5.3	44	5×5.3	44	5×5.3	35	6.3×5.3 8×6.5	40 46
22	220	3×5.3	16	4×5.3	26	5×5.3	44	4×5.3 5×5.3	30 44	5×5.3 6.3×5.3	47 59	5×5.3 6.3×5.3	47 59	6.3×5.3 6.3×7.7	50 65	8×10	139
33	330	4×5.3	31	4×5.3	31	4×5.3 5×5.3	31 55	5×5.3	55	5×5.3 6.3×5.3	55 67	6.3×5.3 6.3×7.7	67 85	6.3×7.7 8×6.5	75 95	8×10	139
47	470	4×5.3	34	4×5.3 5×5.3	34 55	6.3×5.3	75	5×5.3 6.3×5.3	55 75	6.3×5.3 6.3×7.7	75 98	6.3×7.7 8×6.5	98 105	6.3×7.7 8×10	75 190	10×10	200
68	680	5×5.3	58	5×5.3 6.3×5.3	58 89	5×5.3 6.3×5.3	58 89	6.3×5.3	89	6.3×7.7	109	6.3×7.7	109	8×10	190	10×10	226
100	101	5×5.3 6.3×5.3	58 89	6.3×5.3	89	6.3×5.3 6.3×7.7	89 109	6.3×5.3 6.3×7.7	89 109 125	6.3×7.7 8×6.5	109 145	8×10	252	8×10	190	10×10	226
150	151											10×7.7	252				
220	221	6.3×5.3 6.3×7.7	89 124	6.3×5.3 6.3×7.7	89 124	6.3×7.7 8×6.5 8×10	124 175 270	6.3×7.7 8×10	124 270	8×10 10×7.7	270 270	8×10 10×10	270 370	10×10	320	12.5×13.5	500
330	331	6.3×7.7	124	6.3×7.7 8×6.5	124 190	8×10	290	8×10 10×7.7	290 290	10×10	400	10×10	400	12.5×13.5	600	12.5×16	600
470	471	8×10	290	8×10	290	10×7.7 10×10	290 400	10×10	400	10×10	400	12.5×13.5	750	12.5×16	740	16×16.5	850
680	681			10×7.7	290	10×10	410	10×10	410	12.5×13.5	680	12.5×13.5	680	16×16.5	1,000	18×16.5	1,100
1,000	102			10×10	430	10×10	430	12.5×13.5	750	12.5×13.5	750	16×16.5	1,100	18×16.5 16×21.5	1,350 1,400		
2,200	222			12.5×13.5	890	12.5×13.5	890	16×16.5	1,100	16×16.5	1,100	18×16.5 16×21.5	1,450 1,500				
3,300	332			12.5×16	1,000	16×16.5	1,300	16×16.5	1,300	18×16.5 16×21.5	1,450 1,500	18×21.5	1,750				
4,700	472			16×16.5	1,400	16×16.5	1,400	18×16.5 16×21.5	1,600 1,650	18×21.5	1,750						
6,800	682			18×16.5 16×21.5	1,700 1,750	18×16.5 16×21.5	1,700 1,750	18×21.5	2,000								
10,000	103			18×21.5	2,000	18×21.5	2,000										

V. DC μF	Contents	100V (2A)		160V (2C)		200V (2D)		250V (2E)		400V (2G)		450V (2W)	
		φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA	φ D×L	mA
4.7	4R7									12.5×13.5	120	12.5×13.5	120
10	100	8×10	90					12.5×13.5	150	12.5×13.5	120	12.5×16	130
22	220	8×10	90			12.5×13.5	240	12.5×13.5	150	16×16.5	140	16×16.5	140
33	330	10×10	120	12.5×13.5	290	12.5×16	310	12.5×16	240	16×16.5	140	18×16.5	180
47	470	10×10	120	12.5×16	370	16×16.5	420	16×16.5	340	18×16.5	280	18×21.5	250
68	680	12.5×13.5	380	16×16.5	500	16×16.5	420	18×16.5 16×21.5	440 450	18×21.5	350		
100	101	12.5×13.5	440	18×16.5 16×21.5	650 690	18×16.5 16×21.5	550 590	18×21.5	490				
220	221	16×16.5	600										
330	331	18×16.5 16×21.5	780 850										

## Part Numbering System for the SMD Type

When you place an order for electrolytic/Os-con capacitors, please refer to our part number as shown below.



① Series:

Series is represented by a three/four digit code.

② Rated Voltage: Voltage on volts (V) is represented by two digit code showing the real working voltage: OE=2.5V, OG=4V, OJ=6.3V, 1A=10V, 1C=16V, 1E=25V, 1V=35V, 1H=50V, 1J=63V, 1K=80V, 2A=100V, 2C=160V, 2D=200V, 2E=250V, 2G=400V and 2W=450V

③ Capacitance:

Rated capacitance in  $\mu$ F is represented by a three digit number. The first two digits are the significant figures of the nominal capacitance and the third digit indicates the number of zeros following these figures. The decimal point is represent by the capital letter R. Please refer to the following example:

$\mu$ F	0.1	0.47	1	4.7	10	47	100	470	1000
Part number	0R1	R47	010	4R7	100	470	101	471	102

④ Tolerance:

Symbol of W, T, Q, V, M, K and J show special capacitance tolerance which are listed as follows:

W = -10% ~ +100%	M = -20% ~ +20%
T = -10% ~ +50%	K = -10% ~ +10%
Q = -10% ~ +30%	J = -5% ~ +5%
V = -10% ~ +20%	

⑤ Case Size: Symbol of case size are listed as follows:

$\phi$ D×L (mm)	Symbol	$\phi$ D×L (mm)	Symbol	$\phi$ D×L (mm)	Symbol	$\phi$ D×L (mm)	Symbol
3×5.3	B55	6.3×5.3	F55	8×6.5	G68	10×10.0	H10
4×5.3	D55	6.3×5.7	F60	8×7.0	G72	10×13.0	H13
4×5.7	D60	6.3×6.0	F62	8×10.0	G10	12.5×13.5	K14
5×5.3	E55	6.3×7.0	F72	8×12.0	G12	12.5×16.0	K16
5×5.7	E60	6.3×7.7	F80	10×8.0	H82	16×16.5	L17

⑥ Package type:

R = Tape and reel