

OCV Series

Features

- 105°C, 2,000 hours assured
- Ultra low ESR, solid capacitors of SMD type
- RoHS Compliance



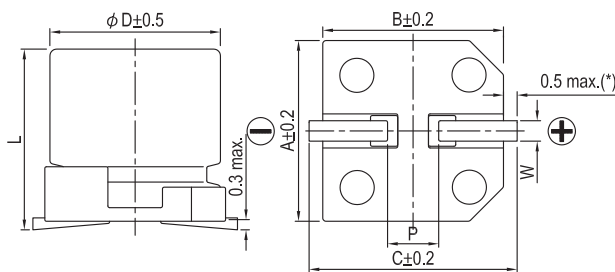
Marking color: Blue

Specifications

Items	Performance										
Category Temperature Range	-55°C ~ +105°C										
Capacitance Tolerance	±20% (at 120Hz, 20°C)										
Leakage Current (at 20°C)*	Rated voltage applied, after 2 minutes at 20°C. See Standard Ratings										
Tanδ (at 120Hz, 20°C)	See Standard Ratings										
ESR (at 100k ~ 300k Hz, 20°C)	See Standard Ratings										
Endurance	<table border="1"> <tr><td>Test Time</td><td>2,000 Hrs</td></tr> <tr><td>Capacitance Change</td><td>Within ±20% of initial value</td></tr> <tr><td>Tanδ</td><td>Less than 150% of specified value</td></tr> <tr><td>ESR</td><td>Less than 150% of specified value</td></tr> <tr><td>Leakage Current</td><td>Within specified value</td></tr> </table>	Test Time	2,000 Hrs	Capacitance Change	Within ±20% of initial value	Tanδ	Less than 150% of specified value	ESR	Less than 150% of specified value	Leakage Current	Within specified value
	Test Time	2,000 Hrs									
	Capacitance Change	Within ±20% of initial value									
	Tanδ	Less than 150% of specified value									
	ESR	Less than 150% of specified value									
Leakage Current	Within specified value										
* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2,000 hours at 105°C.											
Moisture Resistance	<table border="1"> <tr><td>Test Time</td><td>1,000 Hrs</td></tr> <tr><td>Capacitance Change</td><td>Within ±20% of initial value</td></tr> <tr><td>Tanδ</td><td>Less than 150% of specified value</td></tr> <tr><td>ESR</td><td>Less than 150% of specified value</td></tr> <tr><td>Leakage Current</td><td>Within specified value</td></tr> </table>	Test Time	1,000 Hrs	Capacitance Change	Within ±20% of initial value	Tanδ	Less than 150% of specified value	ESR	Less than 150% of specified value	Leakage Current	Within specified value
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	Tanδ	Less than 150% of specified value									
	ESR	Less than 150% of specified value									
Leakage Current	Within specified value										
* The above specifications shall be satisfied when the capacitors are restored to 20°C after subjecting them at 60°C, 90 to 95% RH for 1,000 hours. Leakage current should be tested after voltage treatment*.											
Resistance to Soldering Heat * (Please refer to page 25 for reflowsoldering conditions)	<table border="1"> <tr><td>Capacitance Change</td><td>Within ±10% of initial value</td></tr> <tr><td>Tanδ</td><td>Within specified value</td></tr> <tr><td>ESR</td><td>Within specified value</td></tr> <tr><td>Leakage Current</td><td>Within specified value</td></tr> </table>	Capacitance Change	Within ±10% of initial value	Tanδ	Within specified value	ESR	Within specified value	Leakage Current	Within specified value		
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Ripple Current and Frequency Multipliers	<table border="1"> <tr> <th>Frequency (Hz)</th> <th>120 ≤ f < 1k</th> <th>1k ≤ f < 10k</th> <th>10k ≤ f < 100k</th> <th>100k ≤ f < 500k</th> </tr> <tr> <th>Multiplier</th> <td>0.05</td> <td>0.3</td> <td>0.7</td> <td>1.0</td> </tr> </table>	Frequency (Hz)	120 ≤ f < 1k	1k ≤ f < 10k	10k ≤ f < 100k	100k ≤ f < 500k	Multiplier	0.05	0.3	0.7	1.0
	Frequency (Hz)	120 ≤ f < 1k	1k ≤ f < 10k	10k ≤ f < 100k	100k ≤ f < 500k						
Multiplier	0.05	0.3	0.7	1.0							

* For any doubt about measured values, measure the leakage current again after the following voltage treatment.
Voltage treatment: DC rated voltage is applied to the capacitors for 2 hours at 105 °C.

Diagram of Dimensions



Lead Spacing and Diameter

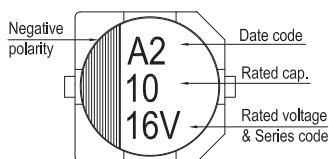
Unit: mm

φD	L	A	B	C	W	P ± 0.2
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5
6.3	5.9 +0.1/-0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0
6.3	7.0 ± 0.2	6.6	6.6	7.2	0.5 ~ 0.8	2.0
8	6.7 ± 0.3	8.3	8.3	9.0	0.7 ~ 1.1	3.1
8	12.0 ± 0.5	8.3	8.3	9.0	0.7 ~ 1.1	3.1
10	7.7 ± 0.3	10.3	10.3	11.0	0.7 ~ 1.3	4.7
10	9.9 +0.1/-0.3	10.3	10.3	11.0	0.7 ~ 1.3	4.7
10	12.6 +0.1/-0.4	10.3	10.3	11.0	0.7 ~ 1.3	4.7

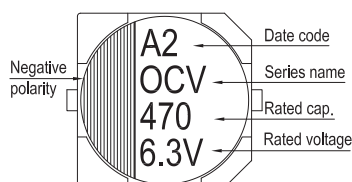
(*): For 5 ~ 6.3φ is 0.4 max.

Marking

φD = 5 ~ 6.3



φD = 8 ~ 10





Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 100k Hz, 105°C

Standard Ratings

Rated Volt. (V)	Surge Voltage (V)	Capacitance (μ F)	Size $\phi D \times L$ (mm)	Tan δ (120Hz, 20°C)	L C (μ A)	E S R (m Ω /at 100k ~ 300k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
2.5V (0E)	2.9	220	6.3 \times 5.9	0.12	110	25	2,500
		560	8 \times 6.7	0.12	280	23	3,100
		680	8 \times 12	0.18	340	12	4,770
		1,000	10 \times 7.7	0.12	500	19	4,240
		1,200	10 \times 9.9	0.18	750	13	5,200
		1,500	10 \times 12.6	0.18	750	10	5,500
4V (0G)	4.6	150	5 \times 5.7	0.12	120	30	1,490
			6.3 \times 5.9	0.12	120	26	2,450
		220	8 \times 6.7	0.12	176	25	3,020
		330	8 \times 6.7	0.12	264	25	3,020
		470	10 \times 7.7	0.12	376	20	4,130
		560	8 \times 12	0.18	448	12	4,770
		680	10 \times 7.7	0.12	544	20	4,130
		1,200	10 \times 9.9	0.18	656	13	5,200
6.3V (0J)	7.2	82	6.3 \times 5.9	0.12	103	27	2,400
			5 \times 5.7	0.12	126	35	1,380
		100	6.3 \times 5.9	0.12	126	27	2,400
			120	6.3 \times 7	0.12	151	30
		150	6.3 \times 7	0.12	189	30	2,250
			8 \times 6.7	0.12	189	25	3,020
		220	6.3 \times 7	0.12	277	30	2,250
			8 \times 6.7	0.12	277	25	3,020
		330	10 \times 7.7	0.12	416	20	4,130
		470	8 \times 12	0.15	592	12	4,770
560	10 \times 9.9	0.15	706	16	4,700		
820	10 \times 12.6	0.15	1,033	10	5,500		
10V (1A)	12.0	47	5 \times 5.7	0.12	94	40	1,270
		56	6.3 \times 5.9	0.10	112	31	2,250
		150	8 \times 6.7	0.10	300	27	2,800
		330	8 \times 12	0.15	660	14	4,420
			10 \times 7.7	0.10	660	24	3,770
		470	10 \times 9.9	0.15	940	18	4,400
		560	10 \times 12.6	0.15	1,120	12	5,300
16V (1C)	18.0	22	5 \times 5.7	0.12	70	45	1,210
		47	6.3 \times 5.9	0.10	150	50	1,650
		82	8 \times 6.7	0.10	262	30	2,700
		180	8 \times 12	0.15	576	16	4,360
			10 \times 7.7	0.10	576	26	3,430
		220	10 \times 9.9	0.15	704	20	4,200
		330	10 \times 12.6	0.15	792	14	5,050
		820	10 \times 12.6	0.12	2,624	18	4,200

OP-CAP



Dimension: $\phi D \times L$ (mm)
Ripple Current: mA/rms at 100k Hz, 105°C

Standard Ratings

Rated Volt. (V)	Surge Voltage (V)	Capacitance (μF)	Size $\phi D \times L$ (mm)	Tan δ (120Hz, 20°C)	L C (μA)	E S R (m Ω /at 100k ~ 300k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
20V (1D)	23.0	22	6.3 × 5.9	0.10	88	50	1,650
		47	8 × 6.7	0.10	188	45	2,000
		82	10 × 7.7	0.10	328	40	2,500
		100	8 × 12	0.15	400	24	3,320
			10 × 9.9	0.15	400	25	3,700
		150	10 × 12.6	0.15	600	20	4,320
330	10 × 12.6	0.12	1,320	26	2,700		
25V (1E)	29.0	6.8	6.3 × 5.9	0.10	170	80	1,200
		10	8 × 6.7	0.10	125	60	1,500
		22	10 × 7.7	0.10	275	50	2,000
		33	8 × 12	0.12	413	30	2,980
		56	10 × 12.6	0.12	700	28	3,800
		270	10 × 12.6	0.12	1,350	27	2,700
35V (1V)	40.0	39	8 × 12	0.12	273	31	2,100
		68	10 × 12.6	0.12	476	28	2,700
50V (1H)	58.0	39	8 × 12	0.12	390	34	2,000
		68	10 × 12.6	0.12	680	29	2,600
63V (1J)	73.0	27	8 × 12	0.12	340	35	2,000
		47	10 × 12.6	0.12	592	30	2,500

OP-CAP

Part Numbering System

OCV Series 470 μF $\pm 20\%$ 6.3V Carrier Tape 8 $\phi \times 12L$ Pb-free and PET coating case

OCV **471** **M** **OJ** **TR** - **0812**

Series Name Capacitance Capacitance Tolerance Rated Voltage Package Type Terminal Type Case size Lead Wire and Coating Type

Note: For more details, please refer to "Part Numbering System (SMD Type)" on page 15.