

## OVA Series

### Features

- 105°C, 15,000 hours assured
- Ultra low ESR, solid capacitors of SMD type
- RoHS Compliant



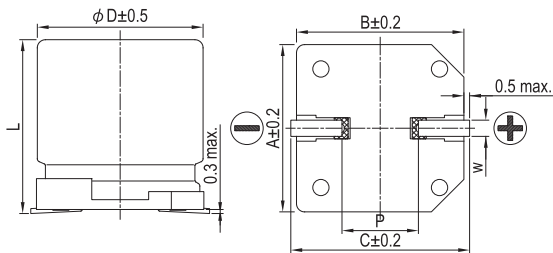
Marking color: Blue

### Specifications

Items	Performance										
Category Temperature Range	-55°C ~ +105°C										
Capacitance Tolerance	±20% (at 120 Hz, 20°C)										
Leakage Current (at 20°C)*	Rated voltage applied, after 2 minutes at 20°C. See Standard Ratings										
Tanδ (at 120 Hz, 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>15,000 Hrs For 6.3x4.4: 3,000 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	15,000 Hrs For 6.3x4.4: 3,000 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	15,000 Hrs For 6.3x4.4: 3,000 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 15,000 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 ~ 95% RH for 1,000 hours. Leakage current should be tested after voltage treatment*.											
Resistance to Soldering Heat * (Please refer to page 15 for reflow soldering 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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	Tanδ	Within specified value									
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Leakage Current	Within specified value										
Ripple Current and Frequency Multipliers	<table border="1"> <tr> <th>Frequency (Hz)</th> <th>120 ≤ f &lt; 1k</th> <th>1k ≤ f &lt; 10k</th> <th>10k ≤ f &lt; 100k</th> <th>100k ≤ f &lt; 500k</th> </tr> <tr> <td>Multiplier</td> <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

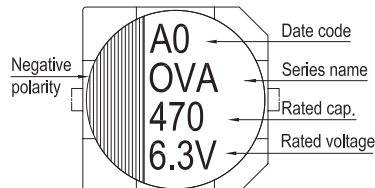
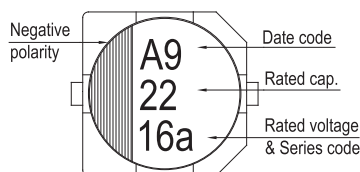
Unit: mm

φD	L	A	B	C	W	P ± 0.2
5	5.8 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5
6.3	4.4 ± 0.2	6.6	6.6	7.2	0.5 ~ 0.8	2.0
6.3	5.8 ± 0.3	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	12.6 +0.1/-0.4	10.3	10.3	11.0	0.7 ~ 1.3	4.7

### 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 ( $\mu$ F)	Size $\phi D \times L$ (mm)	Tan $\delta$ (120 Hz, 20°C)	L C ( $\mu$ A)	E S R (m $\Omega$ /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 × 5.8	0.12	110	25	2,500
		560	8 × 6.7		280	23	3,100
		680	8 × 12		340	12	4,770
		1,000	10 × 7.7		500	19	4,240
		1,500	10 × 12.6		750	10	5,500
4V (0G)	4.6	100	6.3 × 5.8	0.12	80	26	2,450
		120	6.3 × 4.4		240	38	1,710
		150	5 × 5.8		120	30	1,490
			6.3 × 5.8		120	26	2,450
		220	8 × 6.7		176	25	3,020
		330	8 × 6.7		264	25	3,020
		470	10 × 7.7		376	20	4,130
		560	8 × 12		448	12	4,770
		680	10 × 7.7		544	20	4,130
		820	10 × 12.6		656	10	5,500
		1,200	10 × 12.6		960	10	5,500
6.3V (0J)	7.2	47	5 × 5.8	0.12	59.2	35	1,380
		68	6.3 × 5.8		85.6	27	2,400
		82	6.3 × 4.4		258	40	1,670
			6.3 × 5.8		103	27	2,400
		100	5 × 5.8		126	35	1,380
			6.3 × 4.4		315	40	1,670
			6.3 × 5.8		126	27	2,400
		120	6.3 × 5.8		151	27	2,400
		150	8 × 6.7		189	25	3,020
		220	8 × 6.7		277	25	3,020
		330	10 × 7.7		416	20	4,130
		390	8 × 12		491	12	4,770
		470	8 × 12		592	12	4,770
			10 × 7.7		592	20	4,130
		680	10 × 12.6		857	10	5,500
820	10 × 12.6	1,033	10	5,500			
10V (1A)	12.0	33	5 × 5.8	0.12	66	40	1,270
		47	5 × 5.8		94	40	1,270
			6.3 × 4.4		235	41	1,560
			6.3 × 5.8		94	31	2,250
		56	6.3 × 5.8		112	31	2,250
		120	8 × 6.7		240	27	2,800
		150	8 × 6.7		300	27	2,800
		270	8 × 12		540	14	4,420
			10 × 7.7		540	24	3,770
		330	8 × 12		660	14	4,420
			10 × 7.7		660	24	3,770
470	10 × 12.6	940	12	5,300			
560	10 × 12.6	1,120	12	5,300			

OP-CAP



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

Standard Ratings

Rated Volt. (V)	Surge Voltage (V)	Capacitance (μF)	Size $\phi$ D×L(mm)	Tanδ (120 Hz, 20°C)	L C (μA)	E S R (mΩ/at 100k ~ 300k Hz, 20°C max.)	Rated R. C. (mA/rms at 100k Hz, 105°C)
16V (1C)	18.0	22	5 × 5.8	0.12	70	45	1,210
			6.3 × 4.4		176	45	1,490
		33	6.3 × 5.8		106	37	2,050
			6.3 × 5.8		125	37	2,050
		82	8 × 6.7		262	30	2,700
		150	10 × 7.7		480	26	3,430
			8 × 12		576	16	4,360
		180	10 × 7.7		576	26	3,430
			10 × 12.6		704	14	5,050
		330	10 × 12.6		792	14	5,050
20V (1D)	23.0	15	6.3 × 4.4	0.12	150	57	1,300
		22	6.3 × 5.8		88	50	1,650
		39	8 × 6.7		156	45	2,000
		47	8 × 6.7		188	45	2,000
		82	10 × 7.7		328	40	2,500
		150	10 × 7.7		600	20	4,320
			10 × 12.6		600	20	4,320
25V (1E)	29.0	10	6.3 × 5.8	0.12	125	65	1,500
		22	8 × 6.7		275	50	1,800
		39	10 × 7.7		488	45	2,100

OP-CAP

Part Numbering System

OVA Series	470μF	±20%	6.3V	Carrier Tape	8 $\phi$ ×12L	General Purpose
<b><u>OVA</u></b>	<b><u>471</u></b>	<b><u>M</u></b>	<b><u>0J</u></b>	<b><u>TR</u></b>	<b><u>-</u></b>	<b><u>0812</u></b>
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Package Type	Terminal Type	Case Size
						Application

Note: For more details, please refer to "Part Numbering System" on page 20.