

OCR Series

Features

- 105°C, 2,000 hours assured
- Ultra low ESR with large permissible ripple current
- RoHS Compliance



Marking color: Blue

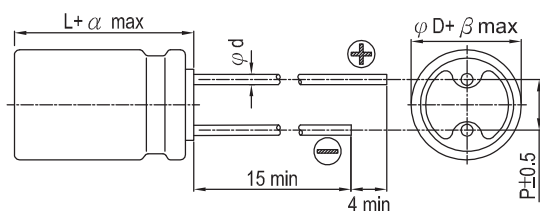
Specifications

Items	Performance																													
Category Temperature Range	-55℃ ~ +105℃																													
Capacitance Tolerance	±20% (at 120Hz, 20℃)																													
Leakage Current (at 20℃)*	Rated voltage applied, after 2 minutes at 20℃. See Standard Ratings																													
Tanδ (at 120Hz, 20℃)	See Standard Ratings																													
ESR (at 100k ~ 300k Hz, 20℃)	See Standard Ratings																													
Endurance	<table><tr><td>Test Time</td><td colspan="4">2,000 Hrs</td></tr><tr><td>Capacitance Change</td><td colspan="4">Within ±20% of initial value</td></tr><tr><td>Tanδ</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>ESR</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>Leakage Current</td><td colspan="4">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			
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* The above specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage applied for 2,000 hours at 105℃.																														
Moisture Resistance	<table><tr><td>Test Time</td><td colspan="4">1,000 Hrs</td></tr><tr><td>Capacitance Change</td><td colspan="4">Within ±20% of initial value</td></tr><tr><td>Tanδ</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>ESR</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>Leakage Current</td><td colspan="4">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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* The above specifications shall be satisfied when the capacitors are restored to 20℃ after subjecting them at 60℃, 90 to 95% RH for 1,000 hours. Leakage current should be tested after voltage treatment*.																														
Resistance to Soldering Heat * (Please refer to page 11 for soldering conditions)	<table><tr><td>Capacitance Change</td><td colspan="4">Within ±10% of initial value</td></tr><tr><td>Tanδ</td><td colspan="4">Within specified value</td></tr><tr><td>ESR</td><td colspan="4">Within specified value</td></tr><tr><td>Leakage Current</td><td colspan="4">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><tr><td>Frequency (Hz)</td><td>120 ≤ f < 1k</td><td>1k ≤ f < 10k</td><td>10k ≤ f < 100k</td><td>100k ≤ f < 500k</td></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															
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* 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



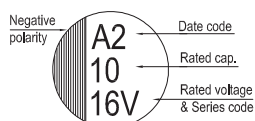
Lead Spacing and Diameter

Unit: mm

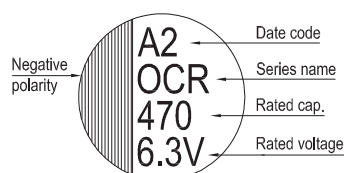
ϕD	6.3	6.3	6.3	8	10	10
L	5.5	6.5	11	11.5	10	12
P	2.5			3.5	5.0	
ϕd	0.45		0.5	0.6		
α	1.0					
β	0.5					

Marking

φ D = 6.3



φ D = 8 ~ 10





Standard Ratings

Dimension: $\phi D \times L$ (mm)

Ripple Current: mA/rms at 100k Hz, 105°C

W. V. (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 5.5	0.12	110	28	2,390
		390	6.3 \times 11	0.12	195	18	3,160
		680	8 \times 11.5	0.18	340	10	5,230
		1,000	10 \times 10	0.18	500	14	4,700
		1,500	10 \times 12	0.18	750	12	5,500
4V (0G)	4.6	150	6.3 \times 5.5	0.12	120	40	1,810
		270	6.3 \times 11	0.12	216	15	3,200
		560	8 \times 11.5	0.18	448	10	5,230
		1,200	10 \times 12	0.18	960	12	5,500
6.3V (0J)	7.2	100	6.3 \times 5.5	0.12	126	40	1,810
		220	6.3 \times 11	0.12	277	18	3,160
		330	6.3 \times 6.5	0.12	416	28	2,390
		390	8 \times 11.5	0.15	491	12	4,770
		470	8 \times 11.5	0.15	592	12	4,770
		820	10 \times 12	0.15	1,033	12	5,500
10V (1A)	12.0	100	6.3 \times 6.5	0.12	200	45	1,700
		220	10 \times 10	0.15	440	17	3,950
		330	8 \times 11.5	0.12	660	14	4,420
		560	10 \times 12	0.12	1,360	12	5,300
16V (1C)	18.0	47	6.3 \times 5.5	0.10	150	50	1,650
		100	6.3 \times 11	0.10	320	22	2,820
		180	8 \times 11.5	0.12	576	16	4,360
		330	10 \times 10	0.12	1,056	16	4,360
		330	10 \times 12	0.12	1,056	14	5,050
20V (1D)	23.0	22	6.3 \times 5.5	0.10	88	60	1,450
		56	6.3 \times 11	0.10	224	25	2,650
		100	8 \times 11.5	0.15	400	24	3,320
		100	10 \times 10	0.15	400	24	3,320
		150	10 \times 12	0.15	600	20	4,320
		330	10 \times 12	0.12	1,320	24	2,800
25V (1E)	29.0	6.8	6.3 \times 5.5	0.10	170	80	1,200
		33	8 \times 11.5	0.12	165	24	3,320
		56	8 \times 11.5	0.12	280	24	3,320
			10 \times 12.5	0.12	280	20	4,320
		68	8 \times 11.5	0.12	340	24	3,320
		100	10 \times 12	0.12	500	20	4,320
		270	10 \times 12	0.12	1,350	25	2,800
35V (1V)	40.0	22	8 \times 11.5	0.12	154	31	2,300
		39	8 \times 11.5	0.12	273	31	2,300
		47	10 \times 12	0.12	329	30	3,650
		68	10 \times 12	0.12	476	28	2,700
		150	10 \times 12	0.12	1,050	26	2,700
50V (1H)	58.0	27	8 \times 11.5	0.12	390	29	2,200
		47	10 \times 12	0.12	680	28	2,600
63V (1J)	73.0	27	8 \times 11.5	0.12	340	33	2,100
		47	10 \times 12	0.12	592	29	2,600

Part Numbering System

OCR Series	470 μ F	$\pm 20\%$	6.3V	Bulk Package	Gas Type	8 $\phi \times 11.5L$	Pb-free and PET coating case
OCR	471	M	0J	BK	-	0811	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Lead Configuration & Package	Rubber Type	Case Size	Lead Wire and Coating Type

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.