



OCR Series

Features

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



Marking color: Blue

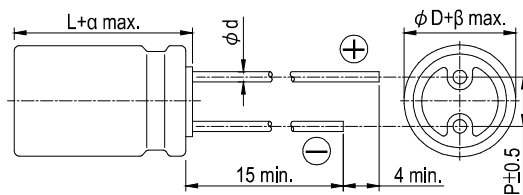
Specifications

Items	Performance																													
Category Temperature Range	-55℃ ~ +105℃																													
Capacitance Tolerance	±20% (at 120 Hz, 20℃)																													
Leakage Current (at 20℃)*	Rated voltage applied, after 2 minutes at 20℃. See Standard Ratings																													
Tanδ (at 120 Hz, 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 ~ 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



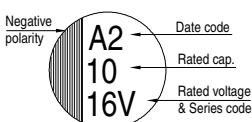
Lead Spacing and Diameter

Unit: mm

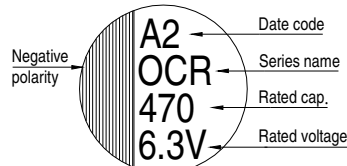
ϕD	6.3	6.3	6.3	8	10	10
L	5.5	6.5	11	11.5	10	12
P	2.5			3.5	5.0	
ϕd	0.45		0.5	0.6		
α	1.0					
β	0.5					

Marking

φ D = 6.3



φ D = 8 ~ 10





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 (120 Hz, 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		500	14	4,700
		1,500	10 $\times$ 12		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		277	18	3,160
		330	6.3 $\times$ 6.5		416	28	2,390
		390	8 $\times$ 11.5	0.15	491	12	4,770
		470	8 $\times$ 11.5		592	12	4,770
		820	10 $\times$ 12		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		1,056	16	4,360
		330	10 $\times$ 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
			10 $\times$ 10		400	24	3,320
		150	10 $\times$ 12		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		280	24	3,320
			10 $\times$ 12.5		280	20	4,320
		68	8 $\times$ 11.5		340	24	3,320
		100	10 $\times$ 12		500	20	4,320
		270	10 $\times$ 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		273	31	2,300
		47	10 $\times$ 12		329	30	3,650
		68	10 $\times$ 12		476	28	2,700
		150	10 $\times$ 12		1,050	26	2,700

Part Numbering System

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

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