



OCRZ Series

Features

- 105°C, 2000 hours assured
- Ultra low ESR with large permissible ripple current
- RoHS compliance



Marking color: Blue

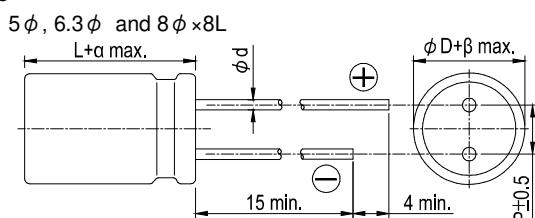
Specifications

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>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> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2000 hours at 105°C.</p>	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										
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> <p>* 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*.</p>	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
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										
Resistance to Soldering Heat * (Please refer to page 11 for 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		
Capacitance Change	Within ±10% of initial value										
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Leakage Current	Within specified value										
Ripple Current and Frequency Multipliers	<table border="1"> <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
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.

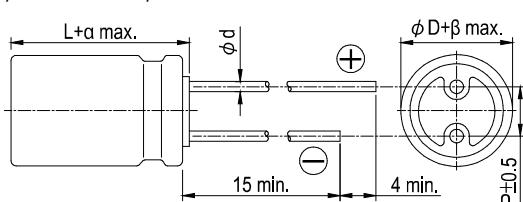
Voltage treatment: DC rated voltage is applied to the capacitors for 2 hours at 105 °C.

Diagram of Dimensions



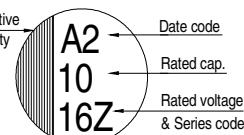
Lead Spacing and Diameter Unit: mm						
φ D	5	6.3	6.3	8	8	10
L	8	6	8	8	12	12
P	2.0		2.5		3.5	5.0
φ d	0.5	0.45		0.6		
α				1.0		
β				0.5		

8φ × 12L and 10φ × 12L

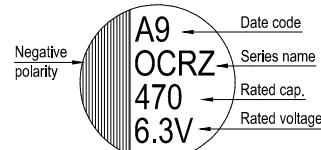


Marking

φ D = 5 ~ 6.3



φ D = 8 ~ 10





Standard Ratings

Rated Volt. (V)	Surge Voltage (V)	Capacitance (μ F)	Size ϕ D×L(mm)	Tan δ (120 Hz, 20°C)	L C (μ A)	Dimension: ϕ D×L(mm)		Rated R. C. (mA/rms at 100k Hz, 105°C)		
						E S R (m Ω /at 100k ~ 300k Hz, 20°C max.)	Ripple Current: mA/rms at 100k Hz, 105°C			
2.5V (0E)	2.9	330	6.3 × 8	0.10	500	7	5,600	5,600		
		390	6.3 × 6*			10		3,900		
		470	5 × 8		235	7	4,200	4,200		
			8 × 8					5,000		
			5 × 8		500			4,200		
			6.3 × 6*					10		
		560	6.3 × 8					4,000		
			8 × 8					5,600		
			6.3 × 8	0.12	280			6,200		
			8 × 8		500			5,600		
		820	8 × 8		410	7	6,200	5,600		
			8 × 12		410					
			8 × 8		500					
		1,000	8 × 12		500					
			10 × 12							
		1,200	6.3 × 8		600	5,600	6,200	5,600		
			8 × 8					6,200		
			8 × 12					6,200		
			10 × 12					6,500		
		1,500	8 × 8	0.12	750	900	6,200	6,200		
			10 × 12		750			6,500		
			8 × 8		900			6,200		
			8 × 12		1,100			6,200		
			10 × 12		1,350			7,200		
			10 × 12		1,950			7,200		
			10 × 12		1,950					
4V (0G)	4.6	560	6.3 × 8	0.10	500	7	6,200	5,600		
			8 × 8	0.10	448					
			8 × 12	0.12	448					
		820	8 × 8	0.10	656					
					800					
		1,000	8 × 12	0.12	960					
					1,200			6,500		
					1,760	8	7,200	7,200		
					2,160			7,200		
6.3V (0J)	7.2	270	5 × 8	0.10	680	8	3,900	3,900		
			5 × 8		832			3,900		
		330	6.3 × 8		592		5,600	5,600		
			8 × 8	0.12	6,200	6,200	6,200			
			8 × 12	0.12			6,200			
		470	6.3 × 8	0.10	706	7	5,600	5,600		
			8 × 8	0.10				6,200		
			8 × 12	0.12				6,200		
		560	6.3 × 8	0.10	857	8	5,600	5,600		
			8 × 8	0.10				6,200		
			8 × 12	0.12				6,200		
		680	6.3 × 8	0.10	1,033	7	5,500	5,500		
			6.3 × 8					6,200		
			8 × 8					6,200		
		820	8 × 12	0.12				5,500		
			10 × 12	0.12				6,200		
			8 × 8	0.10	1,260	7	6,200	5,500		
		1,000	8 × 12	0.12	1,260	8	6,200			

Remark: The case size with “*” of case length is 6.0 mm maximum.



Standard Ratings

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

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

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)	
6.3V (0J)	7.2	1,200	10 × 12	0.12	1,512	8	5,500	
		1,500			1,890	7	6,200	
		1,800			2,268			
		2,200			2,772			
10V (1A)	12.0	270	8 × 12	0.12	540	8	5,000	
		390	8 × 12		780		5,000	
		470	10 × 12		940		6,000	
		560	8 × 8		1,120	9	5,600	
			10 × 12		1,120	8	6,000	
		820	8 × 12		1,640		5,000	
			10 × 12		1,640		6,000	
		1,200	10 × 12		2,400		6,000	
16V (1C)	18.0	100	6.3 × 6*	0.10	320	24	2,490	
			6.3 × 8		500		4,680	
		180	6.3 × 8		576	10	4,680	
			8 × 8		576		5,000	
		270	6.3 × 8		864		4,680	
			8 × 8				5,000	
		330	8 × 12	0.12	8			
			8 × 8	0.10	1,056	10		
		470	10 × 12		1,056	8	6,000	
			8 × 8		1,504	16	4,000	
			8 × 12			10	5,400	
		820	10 × 12			8	6,000	
			0.10	2,624	10	6,100		
		1,000		0.10	10	6,100		
20V (1D)	23.0	330	8 × 8	0.12	1,320	17	3,880	
		390	8 × 12		1,560	14	4,970	
		680	10 × 12		2,720	12	5,400	
25V (1E)	29.0	180	8 × 8	0.12	900	18	3,770	
		220	8 × 12		1,100	16	4,650	
		390	10 × 12		1,950	14	5,000	
35V (1V)	40.0	47	8 × 12	0.12	329	24	3,600	
		82	8 × 12		574	20	4,000	
		120	10 × 12		840	18	4,400	
		150	10 × 12		1,050	20	3,800	

Remark: The case size with “*” of case length is 6.0 mm maximum.

Part Numbering System

OCRZ Series	470 μ F	$\pm 20\%$	6.3V	Bulk Package	Gas Type	6.3 ϕ × 8L	Pb-free and PET coating case
ORZ	471	M	0J	BK	-	0608	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Lead Configuration and 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.

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