

Features

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



Marking color: Blue

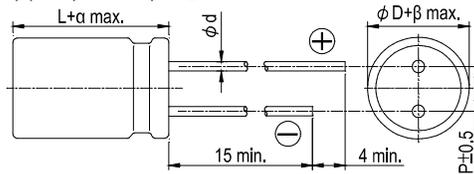
Specifications

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>	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 2000 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
	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										
* 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 18 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									
	Tanδ	Within specified value									
	ESR	Within specified value									
Leakage Current	Within specified value										
Ripple Current and Frequency Multipliers											
<table border="1"> <thead> <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> </thead> <tbody> <tr> <td>Multiplier</td> <td>0.05</td> <td>0.3</td> <td>0.7</td> <td>1.0</td> </tr> </tbody> </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

5 φ, 6.3 φ and 8 φ × 8L

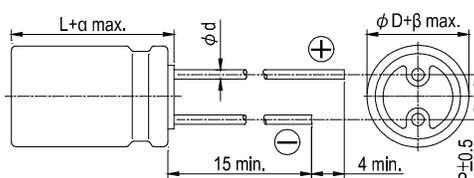


Lead Spacing and Diameter

Unit: mm

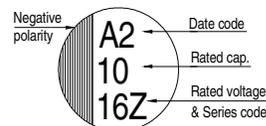
φ D	5	6.3	6.3	8	8	10
L	8	6	8	8	12	12
P	2.0	2.5		3.5		5.0
φ d	0.5	0.45		0.6		
α	1.0					
β	0.5					

8 φ × 12L and 10 φ × 12L

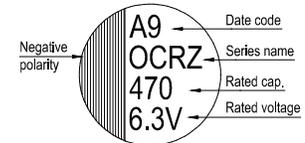


Marking

φ D = 5 ~ 6.3



φ D = 8 ~ 10



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)
2.5V (0E)	2.9	330	6.3 x 8	0.10	500	7	5,600
		390	6.3 x 6*			10	3,900
		470	5 x 8			7	4,200
			8 x 8				5,000
		560	5 x 8	500	4,200		
			6.3 x 6*		10	4,000	
			6.3 x 8		5,600		
		820	8 x 8	0.12	280	6,200	
			6.3 x 8	0.10	500	5,600	
			8 x 8	0.10	410	6,200	
		1,000	8 x 12	0.12	410		
			8 x 8		500		
			8 x 12				
		1,200	10 x 12	0.10		600	7
			6.3 x 8		600	6,200	
		1,500	8 x 8	0.12	750	6,200	
			10 x 12		750	6,500	
		1,800	8 x 8	0.12	900	6,200	
		2,200	8 x 12		1,100	6,200	
		2,700	10 x 12		1,350	7,200	
3,900	10 x 12		1,950	7,200			
4V (0G)	4.6	560	6.3 x 8	0.10	500	7	5,600
			8 x 8	0.10	448		6,200
			8 x 12	0.12	448		
		820	0.10	656			
		1,000		8 x 8	800		
		1,200	8 x 12	0.12	960		6,500
		1,500	10 x 12		1,200		7,200
		2,200		1,760	8		7,200
2,700	2,160	8		7,200			
6.3V (0J)	7.2	270	5 x 8	0.10	680	8	3,900
		330	5 x 8		832	8	3,900
		470	6.3 x 8	0.12	592	5,600	
			8 x 8			6,200	
		560	8 x 12	0.12	706	6,200	
			6.3 x 8			0.10	5,600
			8 x 8			0.10	6,200
		680	8 x 12	0.12	857	6,200	
			6.3 x 8			0.10	5,600
		820	8 x 8	0.10	1,033	5,600	
			8 x 12			8	5,500
			10 x 12			7	6,200
		1,000	8 x 8	0.10	1,260	7	6,200
			8 x 12	0.12	1,260	8	5,500

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

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

ORZ **471** **M** **0J** **BK** - **0608**

Series Name Capacitance Capacitance Tolerance Rated Voltage Lead Configuration and Package Rubber Type Case Size

XX
S = Standard
KS = AEC-Q200 Qualified, Safety Critical Application
LS = AEC-Q200 Qualified, Non-Safety Critical Application