

ORF Series

Features

- 105°C, 20,000 hours assured
- Ultra low ESR with large permissible ripple current
- RoHS compliant



Marking color: Blue

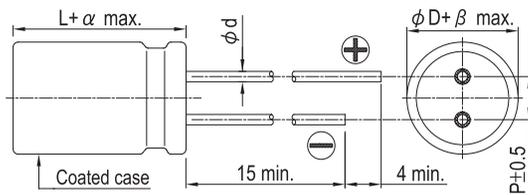
Specifications

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>20,000 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	20,000 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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	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 20,000 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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	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		
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Ripple Current and Frequency Multipliers	<table border="1"> <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> <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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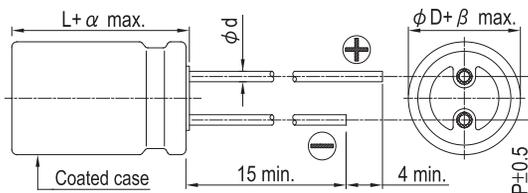
* For any doubt about measured values, measure the leakage current again after the following voltage treatment.
Voltage treatment: DC rated voltage is applied to the capacitors for 2 hours at 105°C.

Diagram of Dimensions

6.3 φ and 8 φ × 8L



8 φ × 11.5L and 10 φ × 12L



Lead Spacing and Diameter

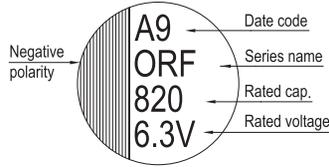
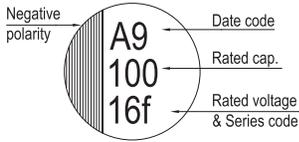
Unit: mm

φ D	6.3			8		10
	L	5.5	8	11	8	11.5
P	2.5			3.5		5.0
φ d	0.45	0.6	0.5	0.6		
α	0.5			1.0		
β	0.5					

Marking

$\phi D = 6.3$

$\phi D = 8 \sim 10$



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)
2V (0D)	2.3	1,000	6.3 \times 8	0.12	500	5	5,900
2.5V(0E)	2.9	330	6.3 \times 8	0.10	500	5	5,900
		470					
		560					
		820					
		1,200	8 \times 8	0.12	1,200	6,100	
1,600	0.12	800					
4V(0G)	4.6	470	6.3 \times 8	0.10	500	7	5,600
		560	6.3 \times 8	0.10	500	7	5,600
6.3V(0J)	7.2	820	6.3 \times 8	0.10	1,030	8	4,700
16V (1C)	18.0	100	6.3 \times 5.5	0.10	500	24	2,490
			6.3 \times 11		500	25	2,890
		270	8 \times 8		864	10	5,000
			8 \times 11.5		864	11	5,080
		330	8 \times 8		1,050	13	4,700
		470	8 \times 11.5		1,500	11	5,400
			10 \times 12		1,500	10	6,100

OP-CAP

Part Numbering System

ORF Series	270 μ F	\pm 20%	16V	Bulk Package	Gas Type	8 ϕ \times 11.5L	General Purpose
ORF	271	M	1C	BK	-	0811	
Series Name	Capacitance	Capacitance Tolerance	Rated Voltage	Lead Configuration and Package	Rubber Type	Case Size	Application

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