

Features

- 105°C, 15,000 hours assured
- Ultra low ESR with large permissible ripple current
- RoHS Compliance



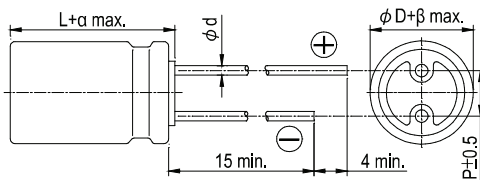
Marking color: Blue

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>15,000 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	15,000 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	15,000 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 specified 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"> <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> <th>Multiplier</th> <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.

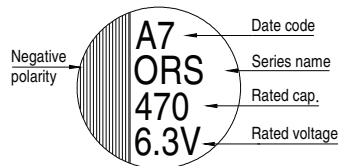
Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

φD	8	10
L	11.5	12
P	3.5	5.0
φd	0.6	
α	1.0	
β	0.5	

Marking



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	680	8 x 11.5	0.12	340	10	5,230
		820	8 x 11.5		410	10	5,230
		1,500	10 x 12		750	8	5,500
4V (0G)	4.6	560	8 x 11.5	0.12	448	10	5,230
		820	10 x 12		656	8	5,500
		1,000			800		
		1,200			960		
6.3V (0J)	7.2	390	8 x 11.5	0.12	491	12	4,770
		470	8 x 11.5		592	12	4,770
		680	10 x 12		857	10	5,500
		820			1,033		
		1,000			1,260		
10V (1A)	12.0	270	8 x 11.5	0.12	540	14	4,420
		330	8 x 11.5		660	14	4,420
		470	10 x 12		940	12	5,300
		560	10 x 12		1,360	12	5,300
16V (1C)	18.0	100	8 x 11.5	0.12	320	16	4,360
		180	8 x 11.5		576	16	4,360
		270	10 x 12		864	14	5,050
		330	10 x 12		1,056	14	5,050
20V (1D)	23.0	100	8 x 11.5	0.12	400	24	3,320
		150	10 x 12	0.12	600	20	4,320
25V (1E)	29.0	68	8 x 11.5	0.12	340	24	3,320
		100	10 x 12	0.12	500	20	4,320
35V (1V)	40.0	18	8 x 11.5	0.12	315	34	2,830
		33	10 x 12	0.12	578	30	3,270

Part Numbering System

ORS Series 470 μ F \pm 20% 6.3V Bulk Package Gas Type 8 ϕ x 11.5L

ORS **471** **M** **0J** **BK** - **0811** **XX**
 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