

OCR Series

Features

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



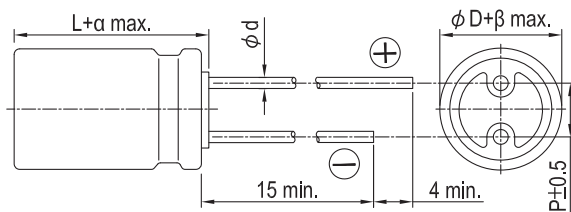
Marking color: Blue

Specifications

| Items | Performance | | | | | | | | | | |
|--|---|-----------------------------------|------------------------------|--------------------|------------------------------|-----------------|-----------------------------------|-----------------|-----------------------------------|-----------------|------------------------|
| Category Temperature Range | -55°C ~ +105°C | | | | | | | | | | |
| Capacitance Tolerance | ±20% (at 120Hz, 20°C) | | | | | | | | | | |
| Leakage Current (at 20°C)* | Rated voltage applied, after 2 minutes at 20°C. See Standard Ratings | | | | | | | | | | |
| Tanδ (at 120Hz, 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 2,000 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 |
| | 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 to 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 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 | | | | | | | | | | |
| * 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. | | | | | | | | | | | |
| 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 |
| | 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



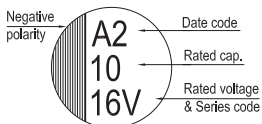
Lead Spacing and Diameter

Unit: mm

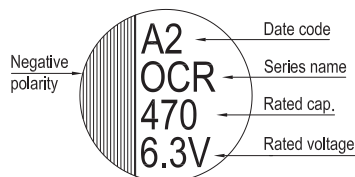
| | | | | | | |
|----|------|-----|-----|------|----|----|
| φD | 6.3 | 6.3 | 6.3 | 8 | 10 | 10 |
| L | 5.5 | 6.5 | 11 | 11.5 | 10 | 12 |
| P | 2.5 | | 3.5 | 5.0 | | |
| φd | 0.45 | 0.5 | 0.6 | | | |
| α | 1.0 | | | | | |
| β | 0.5 | | | | | |

Marking

φD = 6.3



φD = 8 ~ 10





Dimension: ϕ D×L(mm)
Ripple Current: mA/rms at 100k Hz, 105°C

Standard Ratings

| Rated Volt. (V) | Surge Voltage (V) | Capacitance (μF) | Size ϕ D×L(mm) | Tan δ (120Hz, 20°C) | L C (μA) | E S R (mΩ/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 × 5.5 | 0.12 | 110 | 28 | 2,390 |
| | | 390 | 6.3 × 11 | 0.12 | 195 | 18 | 3,160 |
| | | 680 | 8 × 11.5 | 0.18 | 340 | 10 | 5,230 |
| | | 1,000 | 10 × 10 | 0.18 | 500 | 14 | 4,700 |
| | | 1,500 | 10 × 12 | 0.18 | 750 | 12 | 5,500 |
| 4V (0G) | 4.6 | 150 | 6.3 × 5.5 | 0.12 | 120 | 40 | 1,810 |
| | | 270 | 6.3 × 11 | 0.12 | 216 | 15 | 3,200 |
| | | 560 | 8 × 11.5 | 0.18 | 448 | 10 | 5,230 |
| | | 1,200 | 10 × 12 | 0.18 | 960 | 12 | 5,500 |
| 6.3V (0J) | 7.2 | 100 | 6.3 × 5.5 | 0.12 | 126 | 40 | 1,810 |
| | | 220 | 6.3 × 11 | 0.12 | 277 | 18 | 3,160 |
| | | 330 | 6.3 × 6.5 | 0.12 | 416 | 28 | 2,390 |
| | | 390 | 8 × 11.5 | 0.15 | 491 | 12 | 4,770 |
| | | 470 | 8 × 11.5 | 0.15 | 592 | 12 | 4,770 |
| | | 820 | 10 × 12 | 0.15 | 1,033 | 12 | 5,500 |
| 10V (1A) | 12.0 | 100 | 6.3 × 6.5 | 0.12 | 200 | 45 | 1,700 |
| | | 220 | 10 × 10 | 0.15 | 440 | 17 | 3,950 |
| | | 330 | 8 × 11.5 | 0.12 | 660 | 14 | 4,420 |
| | | 560 | 10 × 12 | 0.12 | 1,360 | 12 | 5,300 |
| 16V (1C) | 18.0 | 47 | 6.3 × 5.5 | 0.10 | 150 | 50 | 1,650 |
| | | 100 | 6.3 × 11 | 0.10 | 320 | 22 | 2,820 |
| | | 180 | 8 × 11.5 | 0.12 | 576 | 16 | 4,360 |
| | | 330 | 10 × 10 | 0.12 | 1,056 | 16 | 4,360 |
| | | 330 | 10 × 12 | 0.12 | 1,056 | 14 | 5,050 |
| 20V (1D) | 23.0 | 22 | 6.3 × 5.5 | 0.10 | 88 | 60 | 1,450 |
| | | 56 | 6.3 × 11 | 0.10 | 224 | 25 | 2,650 |
| | | 100 | 8 × 11.5 | 0.15 | 400 | 24 | 3,320 |
| | | 100 | 10 × 10 | 0.15 | 400 | 24 | 3,320 |
| | | 150 | 10 × 12 | 0.15 | 600 | 20 | 4,320 |
| | | 330 | 10 × 12 | 0.12 | 1,320 | 24 | 2,800 |
| 25V (1E) | 29.0 | 6.8 | 6.3 × 5.5 | 0.10 | 170 | 80 | 1,200 |
| | | 33 | 8 × 11.5 | 0.12 | 165 | 24 | 3,320 |
| | | 56 | 8 × 11.5 | 0.12 | 280 | 24 | 3,320 |
| | | | 10 × 12.5 | 0.12 | 280 | 20 | 4,320 |
| | | 68 | 8 × 11.5 | 0.12 | 340 | 24 | 3,320 |
| | | 100 | 10 × 12 | 0.12 | 500 | 20 | 4,320 |
| | | 270 | 10 × 12 | 0.12 | 1,350 | 25 | 2,800 |
| 35V (1V) | 40.0 | 22 | 8 × 11.5 | 0.12 | 154 | 31 | 2,300 |
| | | 39 | 8 × 11.5 | 0.12 | 273 | 31 | 2,300 |
| | | 47 | 10 × 12 | 0.12 | 329 | 30 | 3,650 |
| | | 68 | 10 × 12 | 0.12 | 476 | 28 | 2,700 |
| | | 150 | 10 × 12 | 0.12 | 1,050 | 26 | 2,700 |
| 50V (1H) | 58.0 | 27 | 8 × 11.5 | 0.12 | 390 | 29 | 2,200 |
| | | 47 | 10 × 12 | 0.12 | 680 | 28 | 2,600 |
| 63V (1J) | 73.0 | 27 | 8 × 11.5 | 0.12 | 340 | 33 | 2,100 |
| | | 47 | 10 × 12 | 0.12 | 592 | 29 | 2,600 |

OP-CAP

Part Numbering System

OCR Series 470μF ±20% 6.3V Bulk Package Gas Type 8 ϕ × 11.5L Pb-free and PET coating case

OCR **471** **M** **0J** **BK** - **0811**

Series Name Capacitance Capacitance Tolerance Rated Voltage Lead Configuration & 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.