

## OCRK Series

### Features

- 105°C, 5,000 hours assured
- Ultra low ESR with large permissible ripple current
- RoHS compliant



Marking color: Blue

### Specifications

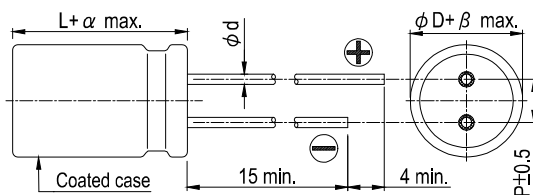
|                                                                                      |                                                                                                                                                                                                            |              |                                   |                |                 |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|----------------|-----------------|
| Items                                                                                | Performance                                                                                                                                                                                                |              |                                   |                |                 |
| Category Temperature Range                                                           | -55℃ ~ +105℃                                                                                                                                                                                               |              |                                   |                |                 |
| Capacitance Tolerance                                                                | ± 20% (at 120 Hz, 20℃)                                                                                                                                                                                     |              |                                   |                |                 |
| Leakage Current (at 20℃)*                                                            | Rated voltage applied, after 2 minutes at 20℃.<br>See Standard Ratings                                                                                                                                     |              |                                   |                |                 |
| Tanδ (at 120 Hz, 20℃)                                                                | See Standard Ratings                                                                                                                                                                                       |              |                                   |                |                 |
| ESR (at 100k~300k Hz, 20℃)                                                           | See Standard Ratings                                                                                                                                                                                       |              |                                   |                |                 |
| Endurance                                                                            | Test Time                                                                                                                                                                                                  |              | 5,000 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℃ after the rated voltage applied for 5,000 hours at 105℃.                                                              |              |                                   |                |                 |
| Moisture Resistance                                                                  | 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℃ after subjecting them at 60℃, 90 ~ 95% RH for 1,000 hours. Leakage current should be tested after voltage treatment*. |              |                                   |                |                 |
| Resistance to Soldering Heat *<br>(Please refer to page 18 for soldering conditions) | 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                                             | 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

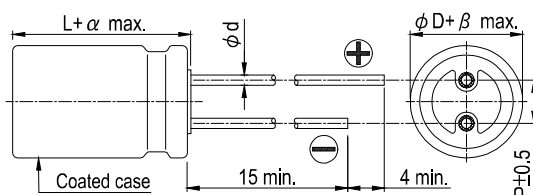
6.3 φ × 8L



Lead Spacing and Diameter Unit: mm

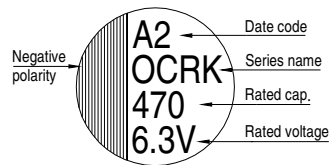
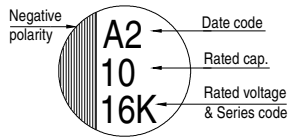
| φ D | 6.3 | 8    | 10  |
|-----|-----|------|-----|
| L   | 8   | 11.5 | 12  |
| P   | 2.5 | 3.5  | 5.0 |
| φ d | 0.6 |      |     |
| α   | 1.0 |      |     |
| β   | 0.5 |      |     |

8 φ × 11.5L and 10 φ × 12L





## 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.<br>(V) | Surge Voltage<br>(V) | Capacitance<br>( $\mu$ F) | Size<br>$\phi D \times L$ (mm) | Tan $\delta$<br>(120 Hz, 20°C) | L C<br>( $\mu$ A) | E S R<br>(m $\Omega$ /at 100k ~ 300k Hz, 20°C max.) | Rated R. C.<br>(mA/rms at 100k Hz, 105°C) |
|--------------------|----------------------|---------------------------|--------------------------------|--------------------------------|-------------------|-----------------------------------------------------|-------------------------------------------|
| 2.5V (0E)          | 2.9                  | 330                       | 6.3 $\times$ 8                 | 0.10                           | 500               | 7                                                   | 5,600                                     |
|                    |                      | 470                       |                                |                                |                   |                                                     |                                           |
|                    |                      | 560                       |                                |                                |                   |                                                     |                                           |
|                    |                      | 820                       |                                |                                |                   |                                                     |                                           |
| 4V (0G)            | 4.6                  | 560                       | 6.3 $\times$ 8                 | 0.10                           | 500               | 7                                                   | 5,000                                     |
| 6.3V (0J)          | 7.2                  | 390                       | 8 $\times$ 11.5                | 0.15                           | 491               | 15                                                  | 4,210                                     |
|                    |                      | 470                       | 6.3 $\times$ 8                 | 0.10                           | 592               | 8                                                   | 4,700                                     |
|                    |                      |                           | 8 $\times$ 11.5                | 0.15                           | 592               | 15                                                  | 4,210                                     |
|                    |                      | 560                       | 6.3 $\times$ 8                 | 0.10                           | 706               | 8                                                   | 4,700                                     |
|                    |                      | 820                       | 10 $\times$ 12                 | 0.15                           | 1,033             | 12                                                  | 4,360                                     |
| 10V (1A)           | 12.9                 | 330                       | 8 $\times$ 11.5                | 0.12                           | 660               | 17                                                  | 3,950                                     |
|                    |                      | 560                       | 10 $\times$ 12                 | 0.12                           | 1,360             | 16                                                  | 4,720                                     |
| 16V (1C)           | 18.0                 | 180                       | 8 $\times$ 11.5                | 0.12                           | 576               | 20                                                  | 3,640                                     |
|                    |                      | 270                       | 6.3 $\times$ 8                 |                                | 864               | 15                                                  | 3,800                                     |
|                    |                      | 330                       | 10 $\times$ 12                 |                                | 1,056             | 16                                                  | 4,720                                     |
| 20V (1D)           | 23.0                 | 100                       | 8 $\times$ 11.5                | 0.12                           | 400               | 28                                                  | 2,300                                     |
|                    |                      | 330                       | 10 $\times$ 12                 | 0.12                           | 1,320             | 26                                                  | 2,800                                     |
| 25V (1E)           | 29.0                 | 100                       | 8 $\times$ 11.5                | 0.12                           | 500               | 28                                                  | 2,200                                     |
|                    |                      | 270                       | 10 $\times$ 12                 | 0.12                           | 1,350             | 27                                                  | 2,700                                     |
| 35V (1V)           | 40.0                 | 68                        | 8 $\times$ 11.5                | 0.12                           | 476               | 29                                                  | 2,200                                     |
|                    |                      | 150                       | 10 $\times$ 12                 | 0.12                           | 1,050             | 28                                                  | 2,600                                     |

## Part Numbering System

|             |             |                       |               |                                |             |                       |                 |
|-------------|-------------|-----------------------|---------------|--------------------------------|-------------|-----------------------|-----------------|
| OCRK Series | 470 $\mu$ F | $\pm 20\%$            | 6.3V          | Bulk Package                   | Gas Type    | 8 $\phi \times 11.5L$ | General Purpose |
| <b>ORK</b>  | <b>471</b>  | <b>M</b>              | <b>0J</b>     | <b>BK</b>                      | -           | <b>0811</b>           |                 |
| 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.