



## 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.<br>See Standard Ratings |
| Tanδ (at 120Hz, 20°C)                    | See Standard Ratings                                                    |
| ESR (at 100k ~ 300k Hz, 20°C)            | See Standard Ratings                                                    |
| Endurance                                | Test Time                                                               |
|                                          | 2,000 Hrs                                                               |
|                                          | Capacitance Change                                                      |
|                                          | Within ±20% of initial value                                            |
|                                          | Tanδ                                                                    |
| Moisture Resistance                      | Less than 150% of specified value                                       |
|                                          | ESR                                                                     |
|                                          | Less than 150% of specified value                                       |
|                                          | Leakage Current                                                         |
|                                          | Within specified value                                                  |
| Resistance to Soldering Heat *           | Test Time                                                               |
|                                          | 1,000 Hrs                                                               |
|                                          | Capacitance Change                                                      |
|                                          | Within ±20% of initial value                                            |
|                                          | Tanδ                                                                    |
| Ripple Current and Frequency Multipliers | Less than 150% of specified value                                       |
|                                          | ESR                                                                     |
|                                          | Less than 150% of specified value                                       |
|                                          | Leakage Current                                                         |
|                                          | Within specified value                                                  |

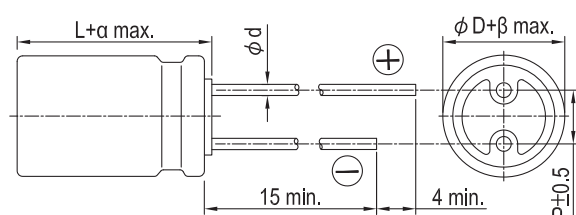
\* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2,000 hours at 105°C.

\* 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\*.

\* 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.

|                |              |              |                |                 |
|----------------|--------------|--------------|----------------|-----------------|
| Frequency (Hz) | 120 ≤ f < 1k | 1k ≤ f < 10k | 10k ≤ f < 100k | 100k ≤ f < 500k |
| Multiplier     | 0.05         | 0.3          | 0.7            | 1.0             |

## Diagram of Dimensions



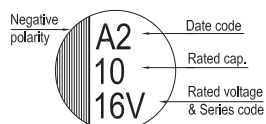
## Lead Spacing and Diameter

Unit: mm

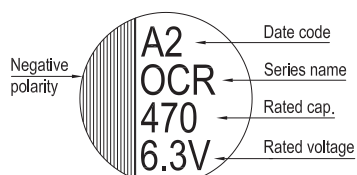
|          |      |     |     |      |     |    |
|----------|------|-----|-----|------|-----|----|
| $\phi D$ | 6.3  | 6.3 | 6.3 | 8    | 10  | 10 |
| L        | 5.5  | 6.5 | 11  | 11.5 | 10  | 12 |
| P        | 2.5  |     |     | 3.5  | 5.0 |    |
| $\phi d$ | 0.45 |     | 0.5 | 0.6  |     |    |
| $\alpha$ | 1.0  |     |     |      |     |    |
| $\beta$  | 0.5  |     |     |      |     |    |

## Marking

φD = 6.3



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

## Part Numbering System

OCR Series 470 $\mu$ F $\pm 20\%$ 

6.3V

Bulk Package

Gas  
Type8  $\phi \times 11.5L$ Pb-free and PET  
coating case**OCR****471****M****0J****BK****-****0811**

Series Name Capacitance

Capacitance  
ToleranceRated  
VoltageLead Configuration  
& PackageRubber  
Type

Case Size

Lead Wire and  
Coating Type

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.

## Данный компонент на территории Российской Федерации

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Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

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