



## OCVZ Series

### Features

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



Marking color: Blue

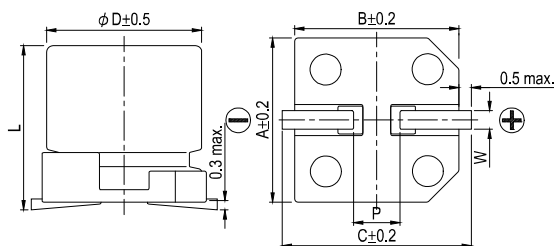
### Specifications

|                                                                                                                                                                                                       |                                                                         |              |                                   |                |                 |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|--------------|-----------------------------------|----------------|-----------------|
| Items                                                                                                                                                                                                 | Performance                                                             |              |                                   |                |                 |
| Category Temperature Range                                                                                                                                                                            | -55℃ ~ +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                                                               |              | 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℃ after the rated voltage applied for 2,000 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 voltage treatment*. |                                                                         |              |                                   |                |                 |
| Resistance to Soldering Heat *<br>(Please refer to page 26 for reflow 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.

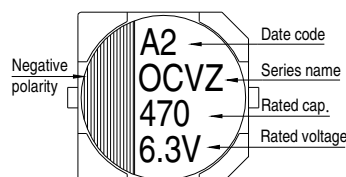
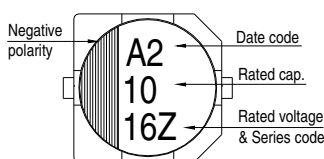
### Diagram of Dimensions



### Lead Spacing and Diameter

Unit: mm

| φD  | L              | A    | B    | C    | W         | P ± 0.2 |
|-----|----------------|------|------|------|-----------|---------|
| 5   | 5.7 ± 0.3      | 5.3  | 5.3  | 5.9  | 0.5 ~ 0.8 | 1.5     |
| 6.3 | 4.4 ± 0.2      | 6.6  | 6.6  | 7.2  | 0.5 ~ 0.8 | 2.0     |
| 6.3 | 5.9 +0.1/-0.3  | 6.6  | 6.6  | 7.2  | 0.5 ~ 0.8 | 2.0     |
| 6.3 | 7.7 ± 0.3      | 6.6  | 6.6  | 7.2  | 0.5 ~ 0.8 | 2.0     |
| 8   | 6.7 ± 0.3      | 8.3  | 8.3  | 9.0  | 0.7 ~ 1.1 | 3.1     |
| 8   | 10.0 ± 0.5     | 8.3  | 8.3  | 9.0  | 0.7 ~ 1.1 | 3.1     |
| 8   | 12.0 ± 0.5     | 8.3  | 8.3  | 9.0  | 0.7 ~ 1.1 | 3.1     |
| 10  | 7.7 ± 0.3      | 10.3 | 10.3 | 11.0 | 0.7 ~ 1.3 | 4.7     |
| 10  | 9.9 +0.1/-0.3  | 10.3 | 10.3 | 11.0 | 0.7 ~ 1.3 | 4.7     |
| 10  | 12.6 +0.1/-0.4 | 10.3 | 10.3 | 11.0 | 0.7 ~ 1.3 | 4.7     |





Dimension:  $\phi$  D×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×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                  | 180                       | 5 × 5.7                | 0.12                           | 300               | 19                                                  | 2,800                                     |
|                    |                      | 330                       | 6.3 × 4.4              |                                | 500               | 16                                                  | 3,180                                     |
|                    |                      | 390                       | 6.3 × 5.9              |                                | 300               | 14                                                  | 3,160                                     |
|                    |                      | 560                       | 6.3 × 5.9              |                                | 300               | 16                                                  | 3,500                                     |
|                    |                      |                           | 6.3 × 7.7              |                                | 420               | 9                                                   | 4,200                                     |
|                    |                      | 680                       | 8 × 6.7                | 0.15                           | 500               | 20                                                  | 3,370                                     |
|                    |                      | 820                       | 8 × 12                 |                                | 500               | 9                                                   | 5,380                                     |
|                    |                      | 1,200                     | 10 × 7.7               |                                | 600               | 13                                                  | 4,450                                     |
|                    |                      | 1,500                     | 8 × 12                 |                                | 750               | 12                                                  | 5,150                                     |
|                    |                      | 2,200                     | 10 × 9.9               |                                | 1,100             | 10                                                  | 5,500                                     |
| 4V (0G)            | 4.6                  | 150                       | 5 × 5.7                | 0.12                           | 300               | 20                                                  | 2,730                                     |
|                    |                      | 270                       | 6.3 × 5.9              |                                |                   | 15                                                  | 3,160                                     |
|                    |                      | 330                       | 6.3 × 5.9              |                                |                   | 15                                                  | 3,160                                     |
|                    |                      | 390                       | 6.3 × 7.7              |                                | 468               | 9                                                   | 4,200                                     |
|                    |                      | 560                       | 8 × 6.7                |                                | 500               | 22                                                  | 3,220                                     |
|                    |                      |                           | 8 × 12                 | 0.15                           | 500               | 9                                                   | 5,380                                     |
|                    |                      | 1,000                     | 10 × 7.7               | 0.12                           | 800               | 14                                                  | 4,300                                     |
|                    |                      | 1,200                     | 8 × 12                 | 0.15                           | 960               | 12                                                  | 4,700                                     |
|                    |                      |                           | 10 × 9.9               | 0.12                           | 960               | 10                                                  | 5,500                                     |
|                    |                      | 1,500                     | 8 × 12                 | 0.15                           | 1,200             | 12                                                  | 4,700                                     |
|                    |                      |                           | 10 × 9.9               | 0.12                           | 1,200             | 10                                                  | 5,500                                     |
|                    |                      | 1,800                     | 10 × 9.9               |                                | 1,440             | 10                                                  | 5,500                                     |
|                    |                      |                           | 10 × 12.6              |                                | 1,440             | 9                                                   | 5,600                                     |
|                    |                      | 2,200                     | 10 × 12.6              | 0.15                           | 1,760             | 9                                                   | 5,700                                     |
| 6.3V (0J)          | 7.2                  | 120                       | 5 × 5.7                | 0.12                           | 300               | 21                                                  | 2,660                                     |
|                    |                      | 220                       | 6.3 × 4.4              |                                | 500               | 18                                                  | 3,000                                     |
|                    |                      |                           | 6.3 × 5.9              |                                | 300               | 15                                                  | 3,160                                     |
|                    |                      | 330                       | 6.3 × 5.9              |                                | 415               | 17                                                  | 3,390                                     |
|                    |                      |                           | 6.3 × 7.7              |                                | 623               | 9                                                   | 4,200                                     |
|                    |                      | 390                       | 8 × 6.7                | 0.15                           | 491               | 22                                                  | 3,220                                     |
|                    |                      | 820                       | 8 × 12                 |                                | 1,033             | 13                                                  | 4,700                                     |
|                    |                      |                           | 10 × 7.7               |                                | 1,033             | 14                                                  | 4,300                                     |
|                    |                      | 1,200                     | 10 × 9.9               | 0.12                           | 1,512             | 12                                                  | 5,025                                     |
|                    |                      | 1,500                     | 10 × 9.9               | 0.15                           | 1,890             | 12                                                  | 5,025                                     |
|                    |                      |                           | 10 × 12.6              |                                | 1,890             | 10                                                  | 5,560                                     |
| 10V (1A)           | 12.0                 | 1,800                     | 10 × 12.6              | 0.15                           | 2,268             | 11                                                  | 5,200                                     |
|                    |                      | 68                        | 5 × 5.7                | 0.12                           | 300               | 23                                                  | 2,540                                     |
|                    |                      | 120                       | 6.3 × 5.9              |                                | 300               | 22                                                  | 2,600                                     |
|                    |                      | 150                       | 6.3 × 7.7              |                                | 450               | 15                                                  | 3,400                                     |
|                    |                      | 220                       | 8 × 6.7                |                                | 440               | 22                                                  | 3,220                                     |
|                    |                      | 270                       | 8 × 6.7                |                                | 500               | 22                                                  | 3,220                                     |
|                    |                      | 390                       | 8 × 10                 |                                | 780               | 17                                                  | 4,000                                     |
|                    |                      | 470                       | 10 × 7.7               |                                | 940               | 19                                                  | 3,800                                     |
|                    |                      | 680                       | 10 × 9.9               |                                | 1,056             | 13                                                  | 4,820                                     |



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>(μF) | Size<br>φ D×L(mm) | Tanδ<br>(120 Hz, 20°C) | L C<br>(μA) | E S R<br>(mΩ/at 100k ~ 300k Hz, 20°C max.) | Rated R. C.<br>(mA/rms at 100k Hz, 105°C) |
|--------------------|----------------------|---------------------|-------------------|------------------------|-------------|--------------------------------------------|-------------------------------------------|
| 16V (1C)           | 18.0                 | 39                  | 5 × 5.7           | 0.12                   | 300         | 27                                         | 2,350                                     |
|                    |                      |                     | 6.3 × 5.9         |                        |             | 24                                         | 2,460                                     |
|                    |                      | 68                  | 6.3 × 5.9         |                        |             | 25                                         | 2,440                                     |
|                    |                      | 82                  | 6.3 × 7.7         |                        | 262         | 24                                         | 2,700                                     |
|                    |                      | 100                 | 6.3 × 5.9         |                        | 320         | 24                                         | 2,490                                     |
|                    |                      |                     | 6.3 × 7.7         |                        |             |                                            | 2,700                                     |
|                    |                      | 8 × 6.7             |                   |                        |             |                                            | 3,010                                     |
|                    |                      | 120                 | 384               |                        | 24          | 3,010                                      |                                           |
|                    |                      | 150                 | 500               |                        | 22          | 3,220                                      |                                           |
|                    |                      | 180                 | 576               |                        | 18          | 3,890                                      |                                           |
|                    |                      | 220                 | 704               |                        | 18          | 3,890                                      |                                           |
|                    |                      |                     | 704               |                        | 22          | 3,450                                      |                                           |
|                    |                      | 270                 | 864               | 12                     | 4,850       |                                            |                                           |
|                    |                      | 330                 | 1,056             | 16                     | 4,350       |                                            |                                           |
|                    |                      |                     | 10 × 12.6         | 1,056                  | 12          | 5,300                                      |                                           |
|                    |                      | 1,504               |                   | 10                     | 6,100       |                                            |                                           |
|                    |                      | 2,624               |                   | 12                     | 5,400       |                                            |                                           |
|                    |                      | 3,200               |                   | 12                     | 5,400       |                                            |                                           |
| 20V(1D)            | 23.0                 | 120                 | 6.3 × 5.9         | 0.12                   | 480         | 25                                         | 3,200                                     |
|                    |                      | 390                 | 8 × 12            |                        | 1,560       | 14                                         | 4,950                                     |
|                    |                      | 560                 | 10 × 9.9          |                        | 2,240       | 18                                         | 4,100                                     |
|                    |                      |                     | 10 × 12.6         |                        | 2,240       | 12                                         | 5,600                                     |
| 25V(1E)            | 29.0                 | 56                  | 6.3 × 5.9         | 0.12                   | 280         | 30                                         | 2,800                                     |
|                    |                      | 180                 | 8 × 12            |                        | 900         | 16                                         | 4,650                                     |
|                    |                      | 220                 | 10 × 9.9          |                        | 1,100       | 20                                         | 3,800                                     |
|                    |                      | 330                 | 10 × 12.6         |                        | 1,650       | 14                                         | 5,000                                     |
| 35V(1V)            | 40.0                 | 22                  | 6.3 × 5.9         | 0.12                   | 154         | 35                                         | 2,600                                     |
|                    |                      | 82                  | 8 × 12            |                        | 574         | 20                                         | 4,000                                     |
|                    |                      | 120                 | 10 × 12.6         |                        | 840         | 18                                         | 4,400                                     |

## Part Numbering System

|             |             |                       |               |              |               |                         |                         |
|-------------|-------------|-----------------------|---------------|--------------|---------------|-------------------------|-------------------------|
| OCVZ Series | 820 $\mu$ F | $\pm$ 20%             | 6.3V          | Carrier Tape |               | 10 $\phi$ $\times$ 7.7L | Pb-free and Coated Case |
| <b>OVZ</b>  | <b>821</b>  | <b>M</b>              | <b>0J</b>     | <b>TR</b>    | -             | <b>1008</b>             |                         |
| Series Name | Capacitance | Capacitance Tolerance | Rated Voltage | Package Type | Terminal Type | Case Size               | Lead Wire and Case Type |

Note: For more details, please refer to "Part Numbering System (SMD Type)" on page 15.

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