

## OCVZ Series

### Features

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



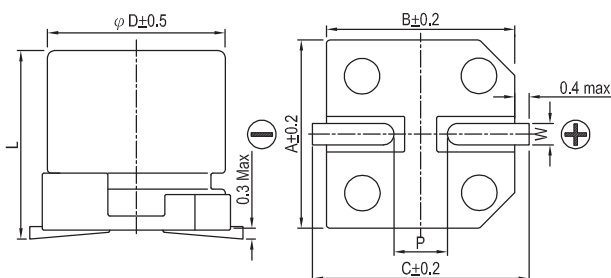
Marking color: Blue

### Specifications

| Items                                                                                                                                                                                                  | Performance                                                                                                                                                                                                                                                                                                                                                                                      |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------|----------------|-----------------|--------------------|------------------------------|--------------|----------------|-----------------|--------------------|------------------------------|-----|-----|-----|------|-----------------------------------|--|--|--|-----------------|-----------------------------------|--|--|--|-----------------|------------------------|--|--|--|
| Category Temperature Range                                                                                                                                                                             | -55℃ ~ +105℃                                                                                                                                                                                                                                                                                                                                                                                     |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
| Capacitance Tolerance                                                                                                                                                                                  | ±20% (at 120Hz, 20℃)                                                                                                                                                                                                                                                                                                                                                                             |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
| Leakage Current (at 20℃)*                                                                                                                                                                              | Rated voltage applied, after 2 minutes at 20℃.<br>See Standard Ratings                                                                                                                                                                                                                                                                                                                           |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
| Tanδ (at 120Hz, 20℃)                                                                                                                                                                                   | See Standard Ratings                                                                                                                                                                                                                                                                                                                                                                             |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
| ESR (at 100k ~ 300k Hz, 20℃)                                                                                                                                                                           | See Standard Ratings                                                                                                                                                                                                                                                                                                                                                                             |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
| Endurance                                                                                                                                                                                              | <table><tr><td>Test Time</td><td colspan="4">2,000 Hrs</td></tr><tr><td>Capacitance Change</td><td colspan="4">Within ±20% of initial value</td></tr><tr><td>Tanδ</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>ESR</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>Leakage Current</td><td colspan="4">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℃ after the rated voltage applied for 2,000 hours at 105℃.                                                         |                                                                                                                                                                                                                                                                                                                                                                                                  |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
| Moisture Resistance                                                                                                                                                                                    | <table><tr><td>Test Time</td><td colspan="4">1,000 Hrs</td></tr><tr><td>Capacitance Change</td><td colspan="4">Within ±20% of initial value</td></tr><tr><td>Tanδ</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>ESR</td><td colspan="4">Less than 150% of specified value</td></tr><tr><td>Leakage Current</td><td colspan="4">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℃ after subjecting them at 60℃, 90 to 95% RH for 1,000 hours. Leakage current should be tested voltage treatment*. |                                                                                                                                                                                                                                                                                                                                                                                                  |                                   |              |                |                 |                    |                              |              |                |                 |                    |                              |     |     |     |      |                                   |  |  |  |                 |                                   |  |  |  |                 |                        |  |  |  |
| Resistance to Soldering Heat *<br>(Please refer to page 25 for reflow soldering conditions)                                                                                                            | <table><tr><td>Capacitance Change</td><td colspan="4">Within ±10% of initial value</td></tr><tr><td>Tanδ</td><td colspan="4">Within specified value</td></tr><tr><td>ESR</td><td colspan="4">Within specified value</td></tr><tr><td>Leakage Current</td><td colspan="4">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><tr><td>Frequency (Hz)</td><td>120 ≤ f &lt; 1k</td><td>1k ≤ f &lt; 10k</td><td>10k ≤ f &lt; 100k</td><td>100k ≤ f &lt; 500k</td></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



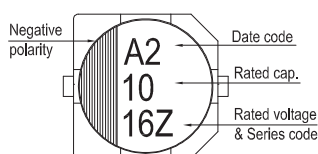
### Lead Spacing and Diameter

Unit: mm

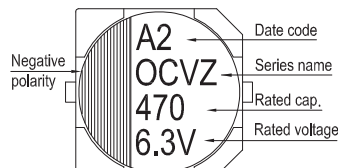
| φD  | L               | A    | B    | C    | W         | P ± 0.2 |
|-----|-----------------|------|------|------|-----------|---------|
| 5   | 5.7 ± 0.3       | 5.3  | 5.3  | 5.9  | 0.5 ~ 0.8 | 1.5     |
| 6.3 | 4.4 ± 0.2       | 6.6  | 6.6  | 7.2  | 0.5 ~ 0.8 | 2.0     |
| 6.3 | 5.9 + 0.1/-0.3  | 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       | 8.4  | 8.4  | 9.0  | 0.7 ~ 1.1 | 3.1     |
| 8   | 12.0 ± 0.5      | 8.4  | 8.4  | 9.0  | 0.7 ~ 1.1 | 3.1     |
| 10  | 7.7 ± 0.3       | 10.4 | 10.4 | 11.0 | 0.7 ~ 1.3 | 4.7     |
| 10  | 9.9 + 0.1/-0.3  | 10.4 | 10.4 | 11.0 | 0.7 ~ 1.3 | 4.7     |
| 10  | 12.6 + 0.1/-0.4 | 10.4 | 10.4 | 11.0 | 0.7 ~ 1.3 | 4.7     |

### MARKING

φD = 5 ~ 6.3



φD = 8 ~ 10



## Standard Ratings

Dimension:  $\phi D \times L$ (mm)

Ripple Current: mA/rms at 100k Hz, 105°C

| W. V. (V) | Surge Voltage (V) | Capacitance ( $\mu F$ ) | Size $\phi D \times L$ (mm) | Tan $\delta$ (120Hz, 20°C) | L C ( $\mu A$ ) | E S R (m $\Omega$ /at 100k ~ 300k Hz, 20°C Max) | Rated R. C. (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                   | 0.12                       | 500             | 16                                              | 3,180                                  |
|           |                   | 390                     | 6.3 × 5.9                   | 0.12                       | 300             | 14                                              | 3,160                                  |
|           |                   | 560                     | 6.3 × 5.9                   | 0.12                       | 300             | 16                                              | 3,500                                  |
|           |                   |                         | 6.3 × 7.7                   | 0.12                       | 420             | 9                                               | 4,200                                  |
|           |                   | 680                     | 8 × 6.7                     | 0.12                       | 500             | 20                                              | 3,370                                  |
|           |                   | 820                     | 8 × 12                      | 0.15                       | 500             | 9                                               | 5,380                                  |
|           |                   | 1,200                   | 10 × 7.7                    | 0.12                       | 600             | 13                                              | 4,450                                  |
|           |                   | 1,500                   | 8 × 12                      | 0.15                       | 750             | 12                                              | 5,150                                  |
|           |                   | 2,700                   | 10 × 12.6                   | 0.15                       | 1,350           | 9                                               | 5,600                                  |
| 4V (0G)   | 4.6               | 150                     | 5 × 5.7                     | 0.12                       | 300             | 20                                              | 2,730                                  |
|           |                   | 270                     | 6.3 × 5.9                   | 0.12                       | 300             | 15                                              | 3,160                                  |
|           |                   | 330                     | 6.3 × 5.9                   | 0.12                       | 300             | 15                                              | 3,160                                  |
|           |                   | 390                     | 6.3 × 7.7                   | 0.12                       | 468             | 9                                               | 4,200                                  |
|           |                   | 560                     | 8 × 6.7                     | 0.12                       | 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                                  |
|           |                   | 1,500                   | 8 × 12                      | 0.15                       | 1,200           | 12                                              | 4,700                                  |
|           |                   | 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                   | 0.12                       | 500             | 18                                              | 3,000                                  |
|           |                   |                         | 6.3 × 5.9                   | 0.12                       | 300             | 15                                              | 3,160                                  |
|           |                   | 330                     | 6.3 × 5.9                   | 0.12                       | 415             | 17                                              | 3,390                                  |
|           |                   |                         | 6.3 × 7.7                   | 0.12                       | 623             | 9                                               | 4,200                                  |
|           |                   | 390                     | 8 × 6.7                     | 0.12                       | 491             | 22                                              | 3,220                                  |
|           |                   | 820                     | 8 × 12                      | 0.15                       | 1,033           | 13                                              | 4,700                                  |
|           |                   |                         | 10 × 7.7                    | 0.12                       | 1,033           | 14                                              | 4,300                                  |
|           |                   | 1,500                   | 10 × 12.6                   | 0.15                       | 1,890           | 10                                              | 5,560                                  |
| 10V (1A)  | 12.0              | 68                      | 5 × 5.7                     | 0.12                       | 300             | 23                                              | 2,540                                  |
|           |                   | 120                     | 6.3 × 5.9                   | 0.12                       | 300             | 22                                              | 2,600                                  |
|           |                   | 150                     | 6.3 × 7.7                   | 0.12                       | 450             | 15                                              | 3,400                                  |
|           |                   | 270                     | 8 × 6.7                     | 0.12                       | 500             | 22                                              | 3,220                                  |
|           |                   | 470                     | 10 × 7.7                    | 0.12                       | 940             | 19                                              | 3,800                                  |
| 16V (1C)  | 18.0              | 39                      | 5 × 5.7                     | 0.12                       | 300             | 27                                              | 2,350                                  |
|           |                   |                         | 6.3 × 5.9                   | 0.12                       | 300             | 24                                              | 2,460                                  |
|           |                   | 68                      | 6.3 × 5.9                   | 0.12                       | 300             | 25                                              | 2,440                                  |
|           |                   | 100                     | 6.3 × 5.9                   | 0.12                       | 320             | 24                                              | 2,490                                  |
|           |                   | 150                     | 8 × 6.7                     | 0.12                       | 500             | 22                                              | 3,220                                  |
|           |                   | 220                     | 10 × 7.7                    | 0.12                       | 704             | 22                                              | 3,450                                  |
|           |                   | 270                     | 8 × 12                      | 0.15                       | 864             | 12                                              | 4,850                                  |
|           |                   | 330                     | 10 × 12.6                   | 0.15                       | 1,056           | 12                                              | 5,300                                  |
|           |                   | 470                     | 10 × 12.6                   | 0.15                       | 1,504           | 10                                              | 6,100                                  |
|           |                   | 820                     | 10 × 12.6                   | 0.12                       | 2,624           | 12                                              | 5,400                                  |
|           |                   | 1,000                   | 10 × 12.6                   | 0.12                       | 3,200           | 12                                              | 5,400                                  |



## Standard Ratings

Dimension:  $\phi$  D×L(mm)

Ripple Current: mA/rms at 100k Hz, 105°C

| W. V. (V) | Surge Voltage (V) | Capacitance (μF) | Size $\phi$ D×L(mm) | Tanδ (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) |
|-----------|-------------------|------------------|---------------------|--------------------|----------|----------------------------------------|----------------------------------------|
| 20V(1D)   | 23.0              | 120              | 6.3 × 5.9           | 0.12               | 480      | 25                                     | 3,200                                  |
|           |                   | 390              | 8 × 12              | 0.12               | 1,560    | 14                                     | 4,950                                  |
|           |                   | 560              | 10 × 9.9            | 0.12               | 2,240    | 18                                     | 4,100                                  |
|           |                   |                  | 10 × 12.6           | 0.12               | 2,240    | 12                                     | 5,600                                  |
| 25V(1E)   | 29.0              | 56               | 6.3 × 5.9           | 0.12               | 280      | 30                                     | 2,800                                  |
|           |                   | 180              | 8 × 12              | 0.12               | 900      | 16                                     | 4,650                                  |
|           |                   | 220              | 10 × 9.9            | 0.12               | 1,100    | 20                                     | 3,800                                  |
|           |                   | 330              | 10 × 12.6           | 0.12               | 1,650    | 14                                     | 5,000                                  |
| 35V(1V)   | 40.0              | 22               | 6.3 × 5.9           | 0.12               | 154      | 35                                     | 2,600                                  |
|           |                   | 82               | 8 × 12              | 0.12               | 574      | 20                                     | 4,000                                  |
|           |                   | 120              | 10 × 12.6           | 0.12               | 840      | 18                                     | 4,400                                  |

## Part Numbering System

|             |             |                       |               |              |               |                  |                              |
|-------------|-------------|-----------------------|---------------|--------------|---------------|------------------|------------------------------|
| OCVZ Series | 820μF       | ±20%                  | 6.3V          | Carrier Tape |               | 10 $\phi$ × 7.7L | Pb-free and PET coating case |
| <b>OVZ</b>  | <b>821</b>  | <b>M</b>              | <b>0J</b>     | <b>TR</b>    | <b>-</b>      | <b>1008</b>      |                              |
| Series Name | Capacitance | Capacitance Tolerance | Rated Voltage | Package Type | Terminal Type | Case size        | Lead Wire and Coating Type   |

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

## Данный компонент на территории Российской Федерации

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