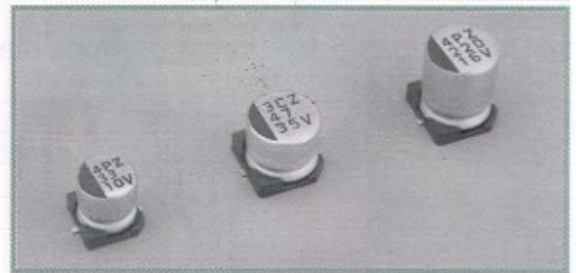


# CZ SERIES

Chip type, For surface mounting

## Features

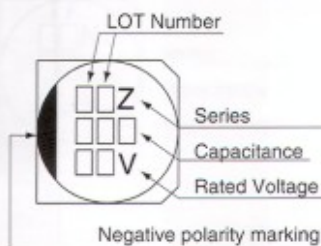
- Life time : 105°C, 2000 hours
- Low impedance at high frequency
- For surface mounting, digital equipment



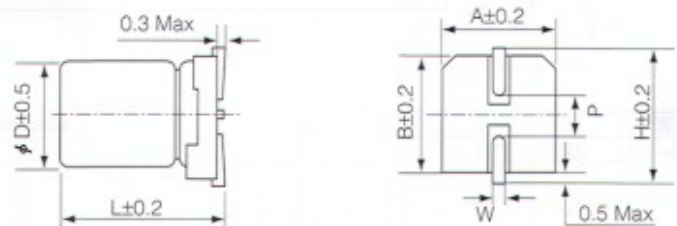
## Specifications

| Item   | Performance Characteristics   |  |      |      |      |      |      |
|--|---|--|------|------|------|------|------|
| Operating temperature range  | -55°C ~ +105°C  |  |      |      |      |      |      |
| Rated working voltage range  | 6.3V ~ 50V  |  |      |      |      |      |      |
| Nominal capacitance range  | 1 $\mu$ F ~ 330 $\mu$ F, $\pm$ 20%(at 20°C, 120Hz)  |  |      |      |      |      |      |
| D.C Leakage current(at 20°C)   | $I \leq 0.01CV$ or 3 $\mu$ A(2min), Whichever is greater.   |  |      |      |      |      |      |
| Tan $\delta$ (max., at 20°C, 120Hz)                                  | W.V(V)  | 6.3  | 10   | 16   | 25   | 35   | 50   |
|  | Tan $\delta$  | 0.24   | 0.20 | 0.16 | 0.14 | 0.12 | 0.12 |
| Characteristics at low temperature (max.) (impedance ratio at 120Hz) | W.V(V)  | 6.3  | 10   | 16   | 25   | 35   | 50   |
|  | Z-25°C/+ 20°C   | 3  | 2    | 2    | 2    | 2    | 2    |
|  | Z-55°C/+ 20°C   | 4  | 4    | 3    | 3    | 3    | 3    |
| Load life  | After applying rated working voltage for 2000 hrs at +105°C and then being stabilized at +20°C, capacitors shall meet following limits                          |  |      |      |      |      |      |
|  | Capacitance change  | Within $\pm$ 20% of the initial measured value |      |      |      |      |      |
|  | Tan $\delta$  | $\leq$ 200% of the initial specified value     |      |      |      |      |      |
|  | Leakage current   | $\leq$ The initial specified value             |      |      |      |      |      |
| Shelf life   | After storage for 1000 hrs at +105°C with no voltage applied and then being stabilized at +20°C, capacitors shall meet load life specification.                 |  |      |      |      |      |      |
|  |   |  |      |      |      |      |      |
| Resistance to soldering heat   | After reflow soldering(Refer to reflow soldering temperature profile ; see page 13) and then being stabilized at +20°C, capacitors shall meet following limits. |  |      |      |      |      |      |
|  | Capacitance change  | Within $\pm$ 10% of the initial measured value |      |      |      |      |      |
|  | Tan $\delta$  | $\leq$ The initial specified value             |      |      |      |      |      |
|  | Leakage current   | $\leq$ The initial specified value             |      |      |      |      |      |

## Marking



## Dimensions in mm (not to scale)



| Size code      | D   | L   | A   | B   | P   | H   | W       |
|----------------|-----|-----|-----|-----|-----|-----|---------|
| B              | 4   | 5.3 | 4.3 | 4.3 | 1.0 | 5.0 | 0.5~0.8 |
| C              | 5   | 5.3 | 5.3 | 5.3 | 1.5 | 5.9 | 0.5~0.8 |
| D              | 6.3 | 5.3 | 6.6 | 6.6 | 2.0 | 7.2 | 0.5~0.8 |
| D <sub>1</sub> | 6.3 | 5.7 | 6.6 | 6.6 | 2.0 | 7.2 | 0.5~0.8 |
| D <sub>2</sub> | 6.3 | 7.7 | 6.6 | 6.6 | 2.0 | 7.2 | 0.5~0.8 |

Chip

# CZ SERIES

## Dimensions & Maximum permissible ripple current

∅ D x L(mm)

| Cap(μF) | W.V(V) | 6.3(0J)        |      |                | 10(1A)         |      |                | 16(1C)         |      |                |
|---------|--------|----------------|------|----------------|----------------|------|----------------|----------------|------|----------------|
|         |        | SIZE           | Z    | I <sub>r</sub> | SIZE           | Z    | I <sub>r</sub> | SIZE           | Z    | I <sub>r</sub> |
| 10      |        |                |      |                |                |      |                | B              | 3.0  | 50             |
| 22      |        | B              | 3.0  | 60             | C              | 1.8  | 95             | C              | 1.8  | 95             |
| 33      |        | C              | 1.8  | 95             | C              | 1.8  | 95             | D <sub>1</sub> | 0.44 | 230            |
| 47      |        | C              | 1.8  | 95             | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            |
| 68      |        | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            |
| 100     |        | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            |
| 150     |        | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            | D <sub>2</sub> | 0.34 | 280            |
| 220     |        | D <sub>1</sub> | 0.44 | 230            | D <sub>2</sub> | 0.34 | 280            | D <sub>2</sub> | 0.34 | 280            |
| 330     |        | D <sub>2</sub> | 0.34 | 280            |                |      |                |                |      |                |

| Cap(μF) | W.V(V) | 25(1E)         |      |                | 35(1V)         |      |                | 50(1H)         |      |                |
|---------|--------|----------------|------|----------------|----------------|------|----------------|----------------|------|----------------|
|         |        | SIZE           | Z    | I <sub>r</sub> | SIZE           | Z    | I <sub>r</sub> | SIZE           | Z    | I <sub>r</sub> |
| 1.0     |        |                |      |                |                |      |                | B              | 5.0  | 30             |
| 2.2     |        |                |      |                |                |      |                | B              | 5.0  | 30             |
| 3.3     |        |                |      |                |                |      |                | B              | 5.0  | 30             |
| 4.7     |        |                |      |                | B              | 3.0  | 60             | C              | 3.0  | 50             |
| 10      |        |                |      |                | C              | 1.8  | 95             | D <sub>1</sub> | 0.88 | 165            |
| 22      |        | D              | 1.0  | 140            | D              | 1.0  | 140            | D <sub>1</sub> | 0.88 | 165            |
| 27      |        | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            | D <sub>2</sub> | 0.68 | 185            |
| 33      |        | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            | D <sub>2</sub> | 0.68 | 185            |
| 47      |        | D <sub>1</sub> | 0.44 | 230            | D <sub>1</sub> | 0.44 | 230            |                |      |                |
| 56      |        | D <sub>1</sub> | 0.44 | 230            | D <sub>2</sub> | 0.34 | 280            |                |      |                |
| 68      |        | D <sub>1</sub> | 0.44 | 230            | D <sub>2</sub> | 0.34 | 280            |                |      |                |
| 100     |        | D <sub>2</sub> | 0.34 | 290            |                |      |                |                |      |                |

Maximum permissible ripple current (mA (rms) at 105°C, 100KHz)  
 Max. Impedance (Ω at 20°C, 100KHz)  
 Case Size (D ∅ x L)