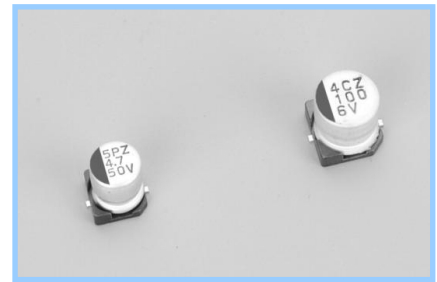


# CZX SERIES

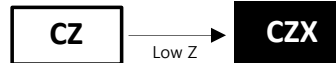
105°C, Low Z, Chip type

## ■ Features

- 105°C, Low Z(ESR), SMD type
- Low impedance at high frequency
- Expand up to Φ10 case sizes
- Load life of 2,000 hours at 105°C

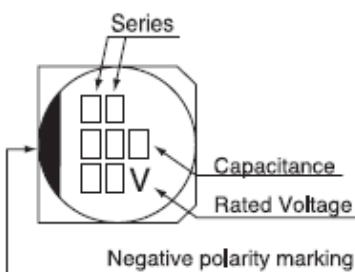


## ■ Specifications

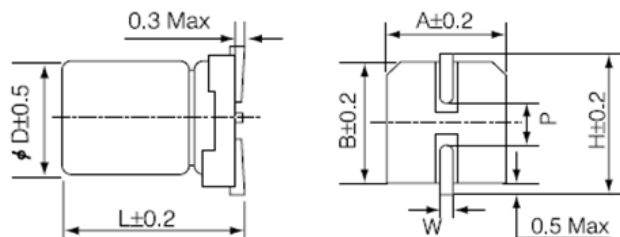


| Item  | Performance Characteristics  |   |                             |      |      |                       |      |
|---|--|---|-----------------------------|------|------|-----------------------|------|
| Operating temperature range   | -55°C ~ +105°C   |   |                             |      |      |                       |      |
| Rated working voltage range   | 6.3V ~ 50V   |   |                             |      |      |                       |      |
| Nominal capacitance range   | 1.0 μF ~ 1,500 μF , ±20% (at 20°C, 120Hz)  |   |                             |      |      |                       |      |
| D.C Leakage current(at 20°C)  | I ≤ 0.01CV or 3μA (2min), whichever is greater.  |   |                             |      |      |                       |      |
|   | Where I = Leakage current(μA)  |   | C = Nominal capacitance(μF) |      |      | V = Rated voltage (V) |      |
| Tan δ (max., at 20°C, 120Hz)  | W.V  | 6.3                                       | 10                          | 16   | 25   | 35                    | 50   |
|   | Tan δ  | 0.24                                      | 0.20                        | 0.16 | 0.14 | 0.15                  | 0.12 |
| Characteristics at low temperature(max.) (impedance ratio at 120Hz) | W.V(V)   | 6.3                                       | 10                          | 16   | 25   | 35                    | 50   |
|   | Z-25°C/Z+20°C  | 3   | 2                           | 2    | 2    | 2                     | 2    |
|   | Z-40°C/Z+20°C  | 4   | 6                           | 3    | 3    | 3                     | 3    |
| Load life   | After applying rated working voltage for 2,000 hours at +105°C and then listed being stabilized at +20°C, capacitors shall meet following limits. (4Φ~6.3Φ : 1,000Hours) |   |                             |      |      |                       |      |
|   | Capacitance change   | Within ±30% of the initial measured value |                             |      |      |                       |      |
|   | Tan δ  | ≤ 200% of the initial specified value     |                             |      |      |                       |      |
|   | Leakage current  | ≤ The initial specified value             |                             |      |      |                       |      |
| Shelf life  | After storage for 1,000hours at + 105°C with no voltage applied and then being stabilized at +20°C, capacitors shall meet following limits.                              |   |                             |      |      |                       |      |
|   | Capacitance change   | Within ±30% of the initial measured value |                             |      |      |                       |      |
|   | Tan δ  | ≤ 200% of the initial specified value     |                             |      |      |                       |      |
|   | Leakage current  | ≤ The initial specified value             |                             |      |      |                       |      |
| Resistance to soldering heat  | After reflow soldering(Refer to reflow soldering temperature profile) and then being stabilized at +20°C, capacitors shall meet following limits.                        |   |                             |      |      |                       |      |

## ■ Marking



## ■ Dimensions in mm(not to scale)



| Size code      | Φ D | L   | A    | B    | P   | H   | W       |
|----------------|-----|-----|------|------|-----|-----|---------|
| B              | 4   | 5.3 | 4.3  | 4.3  | 1   | 5   | 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   | 7.2 | 0.5~0.8 |
| D <sub>1</sub> | 6.3 | 5.7 | 6.6  | 6.6  | 2   | 7.2 | 0.5~0.8 |
| D <sub>2</sub> | 6.3 | 7.7 | 6.6  | 6.6  | 2   | 7.2 | 0.5~0.8 |
| E              | 8   | 6.3 | 8.3  | 8.3  | 2.3 | 9   | 0.5~0.8 |
| F              | 8   | 10  | 8.3  | 8.3  | 3.1 | 9   | 0.8~1.1 |
| G              | 10  | 10  | 10.3 | 10.3 | 4.5 | 11  | 0.8~1.1 |

# CZX SERIES

## ▣ Dimensions & Maximum permissible ripple current

| $\mu\text{F}$ \ V | 6.3                   | 10  | 16                    | 25                    | 35                    | 50                    |
|-------------------|-----------------------|---|-----------------------|-----------------------|-----------------------|-----------------------|
| 1.0               |                       |   |                       |                       |                       | B<br>30               |
|                   |                       |   |                       |                       |                       | 5.0                   |
| 2.2               |                       |   |                       |                       |                       | B<br>30               |
|                   |                       |   |                       |                       |                       | 5.0                   |
| 3.3               |                       |   |                       |                       |                       | B<br>30               |
|                   |                       |   |                       |                       |                       | 5.0                   |
| 4.7               |                       |   |                       |                       | B<br>80               | C<br>85               |
|                   |                       |   |                       |                       | 1.8                   | 1.5                   |
| 10                |                       |   |                       | B<br>83               | C<br>150              | D <sub>1</sub><br>165 |
|                   |                       |   |                       | 1.8                   | 0.76                  | 1.9                   |
| 22                |                       | B<br>83   | C<br>155              | C<br>155              | C<br>150              | D <sub>1</sub><br>165 |
|                   |                       | 1.8   | 0.76                  | 0.76                  | 0.76                  | 1.9                   |
| 33                | B<br>85               | C<br>150  | D <sub>1</sub><br>235 | D <sub>1</sub><br>235 | D <sub>1</sub><br>235 | D <sub>2</sub><br>185 |
|                   | 1.8                   | 0.80  | 0.36                  | 0.36                  | 0.37                  | 0.68                  |
| 47                | C<br>150              | D <sub>1</sub><br>240   | D <sub>1</sub><br>235 | D <sub>1</sub><br>235 | D <sub>1</sub><br>235 | D <sub>2</sub><br>185 |
|                   | 0.80                  | 0.36  | 0.36                  | 0.36                  | 0.37                  | 0.68                  |
| 68                | D <sub>1</sub><br>235 | D <sub>1</sub><br>240   | D <sub>1</sub><br>240 | D <sub>1</sub><br>240 | D <sub>1</sub><br>280 | F<br>300              |
|                   | 0.38                  | 0.36  | 0.36                  | 0.36                  | 0.34                  | 0.34                  |
| 100               | D <sub>1</sub><br>240 | D <sub>1</sub><br>240   | D <sub>1</sub><br>240 | D <sub>2</sub><br>280 | F<br>550              | F<br>300              |
|                   | 0.38                  | 0.36  | 0.36                  | 0.34                  | 0.17                  | 0.34                  |
| 150               | D <sub>1</sub><br>240 | D <sub>1</sub><br>240   | D <sub>2</sub><br>280 | F<br>450              | F<br>550              | G<br>670              |
|                   | 0.38                  | 0.36  | 0.34                  | 0.17                  | 0.17                  | 0.18                  |
| 220               | D <sub>1</sub><br>240 | D <sub>2</sub><br>280   | D <sub>2</sub><br>280 | F<br>550              | F<br>580              | G<br>670              |
|                   | 0.38                  | 0.34  | 0.34                  | 0.17                  | 0.17                  | 0.18                  |
| 330               | D <sub>2</sub><br>280 | F<br>580  | F<br>550              | F<br>550              | G<br>750              |                       |
|                   | 0.34                  | 0.17  | 0.17                  | 0.17                  | 0.09                  |                       |
| 470               | F<br>450              | F<br>600  | F<br>550              | G<br>710              |                       |                       |
|                   | 0.17                  | 0.17  | 0.17                  | 0.09                  |                       |                       |
| 680               | F<br>450              | G<br>720  | G<br>680              |                       |                       |                       |
|                   | 0.17                  | 0.09  | 0.09                  |                       |                       |                       |
| 1,000             | F<br>450              | G<br>780  |                       |                       |                       |                       |
|                   | 0.17                  | 0.09  |                       |                       |                       |                       |
| 1,500             | G<br>670              | Size code<br>Maximum permissible ripple current[mA(rms) at 105°C, 100kHz]<br>Impedance(Z) [ $\Omega$ max. / 20°C, 100kHz] |                       |                       |                       |                       |
|                   | 0.09                  |   |                       |                       |                       |                       |