

# CE-FS Series

105°C Standard

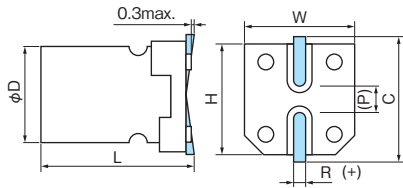
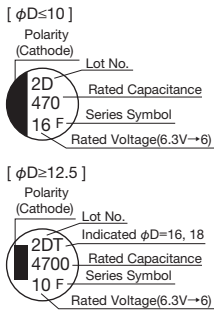


- 105°C 1,000 to 2,000hours
- Solvent proof (within 2 minutes)
- AEC-Q200

## Specifications

| Items                              | Condition                                                   | Specifications                         |                                                 |      |      |      |      |      |             |      |
|------------------------------------|-------------------------------------------------------------|----------------------------------------|-------------------------------------------------|------|------|------|------|------|-------------|------|
| Rated voltage (V)                  | —                                                           | 6.3                                    | 10                                              | 16   | 25   | 35   | 50   | 63   | 100         |      |
| Surge voltage (V)                  | Room temperature                                            | 8.0                                    | 13                                              | 20   | 32   | 44   | 63   | 79   | 125         |      |
| Category temperature range (°C)    | —                                                           | -55 to +105                            |                                                 |      |      |      |      |      | -40 to +105 |      |
| Capacitance tolerance (%)          | 120Hz/20°C                                                  | M : ±20                                |                                                 |      |      |      |      |      |             |      |
| Dissipation Factor (tan δ)         | tanδ(max.)<br>120Hz/20°C                                    | φ4 to φ6.3                             | 0.24                                            | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.12        | 0.10 |
|                                    |                                                             | φ8 to φ16                              | 0.28                                            | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.12        | 0.10 |
|                                    |                                                             | φ18                                    | 0.34                                            | 0.30 | 0.26 | 0.22 | 0.18 | 0.16 | 0.14        | 0.10 |
| Leakage current(LC)                | μA/after 2minutes (max.), 20°C                              | Exceeding 1,000μF, +0.02 every 1,000μF |                                                 |      |      |      |      |      |             |      |
| Impedance ratio at low temperature | Based on the value at 120Hz, +20°C                          | -40°C Z/Z <sub>20°C</sub>              | 3                                               | 3    | 2    | 2    | 2    | 2    | 2           | 3    |
|                                    |                                                             | -55°C Z/Z <sub>20°C</sub>              | 8                                               | 5    | 4    | 3    | 3    | 3    | 3           | —    |
| Endurance                          | 105°C rated voltage applied (With the rated ripple current) | Test                                   | φ4 to φ6.3 : 1,000hours, φ8 to φ18 : 2,000hours |      |      |      |      |      |             |      |
|                                    |                                                             | ΔC/C                                   | Within ±25% of the initial value                |      |      |      |      |      |             |      |
|                                    |                                                             | tanδ                                   | Less than 200% of the specified value           |      |      |      |      |      |             |      |
|                                    |                                                             | LC                                     | Less than the specified value                   |      |      |      |      |      |             |      |

## Marking, Dimensions



A pressure relief vent is provided for φD=8 or bigger

(P)reference size

(Unit : mm)

| D <sup>±0.5</sup> | L                                   | W <sup>±0.2</sup> | H <sup>±0.2</sup> | C <sup>±0.2</sup> | R          | P   |
|-------------------|-------------------------------------|-------------------|-------------------|-------------------|------------|-----|
| 4                 | 5.4 <sup>+0.1</sup> <sub>-0.2</sub> | 4.3               | 4.3               | 5.0               | 0.5 to 0.8 | 1.0 |
| 4                 | 6.0 <sup>±0.3</sup>                 | 4.3               | 4.3               | 5.0               | 0.5 to 0.8 | 1.0 |
| 5                 | 5.4 <sup>+0.1</sup> <sub>-0.2</sub> | 5.3               | 5.3               | 6.0               | 0.5 to 0.8 | 1.4 |
| 6.3               | 5.4 <sup>+0.1</sup> <sub>-0.2</sub> | 6.6               | 6.6               | 7.3               | 0.5 to 0.8 | 2.2 |
| 6.3               | 6.0 <sup>±0.3</sup>                 | 6.6               | 6.6               | 7.3               | 0.5 to 0.8 | 2.2 |
| 6.3               | 7.7 <sup>±0.3</sup>                 | 6.6               | 6.6               | 7.3               | 0.5 to 0.8 | 2.2 |
| 8                 | 10.2 <sup>±0.3</sup>                | 8.3               | 8.3               | 9.0               | 0.7 to 1.0 | 3.2 |
| 10                | 10.2 <sup>±0.3</sup>                | 10.3              | 10.3              | 11.0              | 1.0 to 1.4 | 4.6 |
| 12.5              | 13.5 <sup>±0.5</sup>                | 12.8              | 12.8              | 13.5              | 1.0 to 1.4 | 4.6 |
| 16                | 16.5 <sup>±0.5</sup>                | 16.3              | 16.3              | 17.3              | 1.7 to 2.1 | 7.0 |
| 18                | 16.5 <sup>±1.0</sup>                | 19.0              | 19.0              | 20.0              | 1.7 to 2.1 | 7.0 |
| 18                | 21.5 <sup>±1.0</sup>                | 19.0              | 19.0              | 20.0              | 1.7 to 2.1 | 7.0 |

■ Size, Rated Ripple Current

| $\mu F$ \ V | 6.3       |      | 10        |      | 16        |      | 25        |      | 35        |      |
|-------------|-----------|------|-----------|------|-----------|------|-----------|------|-----------|------|
| 4.7         |           |      |           |      |           |      | 4x5.4     | 13   | 4x5.4     | 14   |
| 10          |           |      |           |      | 4x5.4     | 18   | 5x5.4     | 20   | 5x5.4     | 21   |
| 22          | 4x5.4     | 22   | 5x5.4     | 25   | 5x5.4     | 27   | 6.3x5.4   | 36   | 6.3x5.4   | 38   |
| 33          | 5x5.4     | 27   | 5x5.4     | 30   | 6.3x5.4   | 40   | 6.3x5.4   | 44   | 6.3x6.0   | 42   |
| 47          | 5x5.4     | 33   | 6.3x5.4   | 41   | 6.3x5.4   | 48   | 6.3x6.0   | 48   | 6.3x6.0   | 49   |
| 100         | 6.3x5.4   | 50   | 6.3x5.4   | 53   | 6.3x5.4   | 60   | 6.3x7.7   | 91   | 6.3x7.7   | 84   |
| 150         |           |      | 6.3x6.0   | 62   | 6.3x7.7   | 95   | 8x10.2    | 140  | 8x10.2    | 155  |
| 220         | 6.3x6.0   | 67   | 6.3x7.7   | 105  | 6.3x7.7   | 105  | 8x10.2    | 175  | 8x10.2    | 190  |
| 330         | 6.3x7.7   | 105  | 8x10.2    | 195  | 8x10.2    | 195  | 8x10.2    | 220  | 10x10.2   | 300  |
| 470         | 8x10.2    | 210  | 8x10.2    | 210  | 8x10.2    | 230  | 10x10.2   | 300  | 12.5x13.5 | 410  |
| 680         | 8x10.2    | 210  |           |      | 10x10.2   | 310  |           |      | 12.5x13.5 | 430  |
| 1000        | 8x10.2    | 230  | 10x10.2   | 310  |           |      | 12.5x13.5 | 460  | 16x16.5   | 700  |
| 1500        | 10x10.2   | 310  |           |      | 12.5x13.5 | 500  |           |      | 16x16.5   | 740  |
| 2200        |           |      | 12.5x13.5 | 510  |           |      | 16x16.5   | 805  | 18x16.5   | 950  |
| 2700        |           |      |           |      |           |      |           |      | 18x21.5   | 1200 |
| 3300        | 12.5x13.5 | 520  |           |      | 16x16.5   | 840  | 18x16.5   | 1040 |           |      |
| 3900        |           |      |           |      |           |      | 18x21.5   | 1280 |           |      |
| 4700        |           |      | 16x16.5   | 880  | 18x16.5   | 1090 |           |      |           |      |
| 5600        |           |      |           |      | 18x21.5   | 1300 |           |      |           |      |
| 6800        | 16x16.5   | 930  | 18x16.5   | 1150 |           |      |           |      |           |      |
| 8200        |           |      | 18x21.5   | 1350 |           |      |           |      |           |      |
| 10000       | 18x16.5   | 1200 |           |      |           |      |           |      |           |      |
| 12000       | 18x21.5   | 1350 |           |      |           |      |           |      |           |      |

| $\mu F$ \ V | 50        |      | 63        |     | 100       |     |
|-------------|-----------|------|-----------|-----|-----------|-----|
| 0.47        | 4x5.4     | 3.5  | 4x5.4     | 3.5 |           |     |
| 1.0         | 4x5.4     | 7.0  | 4x5.4     | 7.0 | 4x6.0     | 7.0 |
| 2.2         | 4x5.4     | 11   | 4x5.4     | 11  | 6.3x6.0   | 14  |
| 3.3         | 4x5.4     | 13   | 5x5.4     | 14  | 6.3x6.0   | 20  |
| 4.7         | 5x5.4     | 16   | 5x5.4     | 16  | 6.3x6.0   | 25  |
| 10          | 6.3x5.4   | 24   | 6.3x5.4   | 24  | 6.3x7.7   | 35  |
| 22          | 6.3x6.0   | 42   | 6.3x7.7   | 49  | 8x10.2    | 84  |
| 33          | 6.3x7.7   | 60   | 8x10.2    | 112 | 10x10.2   | 133 |
| 47          | 6.3x7.7   | 63   | 8x10.2    | 119 | 12.5x13.5 | 240 |
| 68          |           |      | 8x10.2    | 126 | 12.5x13.5 | 245 |
| 100         | 8x10.2    | 140  | 10x10.2   | 196 | 16x16.5   | 490 |
| 150         |           |      |           |     | 16x16.5   | 500 |
| 220         | 10x10.2   | 220  | 12.5x13.5 | 287 | 18x16.5   | 650 |
| 330         | 12.5x13.5 | 365  |           |     | 18x21.5   | 700 |
| 390         | 12.5x13.5 | 380  |           |     |           |     |
| 470         |           |      | 16x16.5   | 630 |           |     |
| 680         |           |      | 18x16.5   | 750 |           |     |
| 1000        | 16x16.5   | 655  | 18x21.5   | 900 |           |     |
| 1500        | 18x21.5   | 1100 |           |     |           |     |

Please refer to page 14 for ripple current frequency coefficients.

Case size:  $\phi D \times L$ (mm)  
 $\phi 16, \phi 18$ :CE-FST

Rated ripple current  
mA<sub>rms</sub>(120Hz, 105°C)

■ Part number

