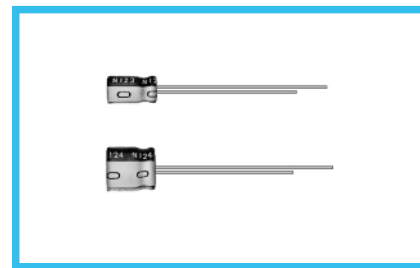


**SF** 7mmL, Low Impedance  
series



- Low impedance over wide temperature range of  $-55$  to  $+105^{\circ}\text{C}$ , with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).

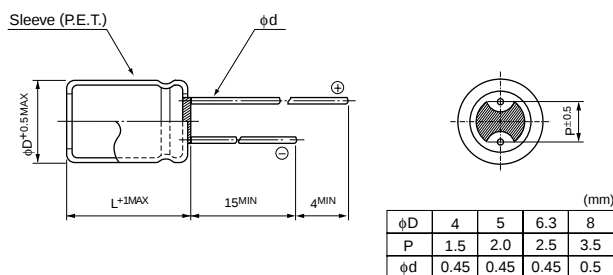
**SF** Low Impedance ST



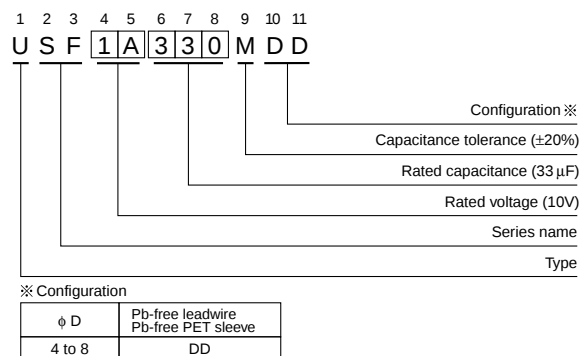
## Specifications

| Item                          | Performance Characteristics                                                                                                                                                                                                             |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
|-------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------|------|------|------|---------------------------------------------------|-----------------------------------------------|--|--|--|--|
| Category Temperature Range    | -55 to +105°C                                                                                                                                                                                                                           |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
| Rated Voltage Range           | 6.3 to 35V                                                                                                                                                                                                                              |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
| Rated Capacitance Range       | 6.8 to 220μF                                                                                                                                                                                                                            |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C                                                                                                                                                                                                                     |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
| Leakage Current               | After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3(μA), whichever is greater.                                                                                                                  |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
| Tangent of loss angle (tan δ) | Measurement frequency : 120Hz, Temperature : 20°C                                                                                                                                                                                       |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
|                               | Rated voltage (V)                                                                                                                                                                                                                       | 6.3             | 10   | 16   | 25   | 35   |                                                   |                                               |  |  |  |  |
|                               | tan δ (MAX.)                                                                                                                                                                                                                            | 0.18            | 0.16 | 0.14 | 0.12 | 0.12 |                                                   |                                               |  |  |  |  |
| Stability at Low Temperature  | Measurement frequency : 120Hz                                                                                                                                                                                                           |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
|                               | Rated voltage (V)                                                                                                                                                                                                                       |                 | 6.3  | 10   | 16   | 25   | 35                                                |                                               |  |  |  |  |
|                               | Impedance ratio                                                                                                                                                                                                                         | Z-25°C / Z+20°C | 2    | 2    | 2    | 2    | 2                                                 |                                               |  |  |  |  |
|                               | ZT / Z20 (MAX.)                                                                                                                                                                                                                         | Z-55°C / Z+20°C | 3    | 3    | 3    | 3    | 3                                                 |                                               |  |  |  |  |
| Endurance                     | The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.                                                                                    |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
|                               |                                                                                                                                                                                                                                         |                 |      |      |      |      | Capacitance change                                | Within ±20% of the initial capacitance value  |  |  |  |  |
|                               |                                                                                                                                                                                                                                         |                 |      |      |      |      | tan δ                                             | 200% or less than the initial specified value |  |  |  |  |
|                               | Leakage current                                                                                                                                                                                                                         |                 |      |      |      |      | Less than or equal to the initial specified value |                                               |  |  |  |  |
| Shelf Life                    | After storing the capacitors under no load at 105°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above. |                 |      |      |      |      |                                                   |                                               |  |  |  |  |
| Marking                       | Printed with white color letter on dark brown sleeve.                                                                                                                                                                                   |                 |      |      |      |      |                                                   |                                               |  |  |  |  |

## Radial Lead Type



## Type numbering system (Example : 10V 33 $\mu\text{F}$ )



## Dimensions

| V        |      | 6.3     |     |     | 10      |     |     | 16      |     |     | 25      |     |     | 35                       |                |                 |
|----------|------|---------|-----|-----|---------|-----|-----|---------|-----|-----|---------|-----|-----|--------------------------|----------------|-----------------|
| Cap.(μF) | Code | 0J      |     |     | 1A      |     |     | 1C      |     |     | 1E      |     |     | 1V                       |                |                 |
| 6.8      | 6R8  |         |     |     |         |     |     |         |     |     |         |     |     | 4 × 7                    | 3.3            | 70              |
| 10       | 100  |         |     |     |         |     |     |         |     |     | 4 × 7   | 3.3 | 70  | 5 × 7                    | 1.7            | 110             |
| 15       | 150  |         |     |     |         |     |     | 4 × 7   | 3.3 | 70  | 5 × 7   | 1.7 | 110 | 6.3 × 7                  | 0.8            | 160             |
| 22       | 220  |         |     |     | 4 × 7   | 3.3 | 70  | 5 × 7   | 1.7 | 110 | 5 × 7   | 1.7 | 110 | 6.3 × 7                  | 0.8            | 160             |
| 33       | 330  | 5 × 7   | 1.7 | 110 | 5 × 7   | 1.7 | 110 | 6.3 × 7 | 0.8 | 160 | 6.3 × 7 | 0.8 | 160 | 8 × 7                    | 0.5            | 200             |
| 47       | 470  | 5 × 7   | 1.7 | 110 | 6.3 × 7 | 0.8 | 160 | 6.3 × 7 | 0.8 | 160 | 8 × 7   | 0.5 | 200 |                          |                |                 |
| 68       | 680  | 6.3 × 7 | 0.8 | 160 | 6.3 × 7 | 0.8 | 160 | 8 × 7   | 0.5 | 200 | 8 × 7   | 0.5 | 200 |                          |                |                 |
| 100      | 101  | 6.3 × 7 | 0.8 | 160 | 8 × 7   | 0.5 | 200 | 8 × 7   | 0.5 | 200 |         |     |     |                          |                |                 |
| 150      | 151  | 8 × 7   | 0.5 | 200 | 8 × 7   | 0.5 | 200 |         |     |     |         |     |     | Case size<br>φD × L (mm) | Impe-<br>dance | Rated<br>ripple |
| 220      | 221  | 8 × 7   | 0.5 | 200 |         |     |     |         |     |     |         |     |     |                          |                |                 |

Max. Impedance ( $\Omega$ ) at  $20^{\circ}\text{C}$  100kHz  
Rated ripple current (mA rms) at  $105^{\circ}\text{C}$  100kHz

## Frequency coefficient of rated ripple current

| Frequency   | 50 Hz | 120 Hz | 300 Hz | 1 kHz | 10 kHz or more |
|-------------|-------|--------|--------|-------|----------------|
| Coefficient | 0.35  | 0.50   | 0.64   | 0.83  | 1.00           |

Please refer to page 20, 21, 22 about the formed or taped product spec.  
Please refer to page 4 for the minimum order quantity.

CAT.8100C