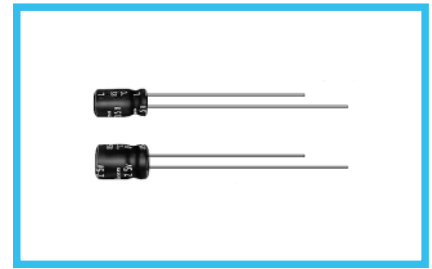
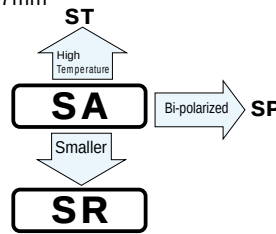


**SA** 7mmL, For General Purposes series

- Standard miniature series with 7mm height.
- Compliant to the RoHS directive (2011/65/EU).

**SR** 7mmL, High CV series

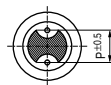
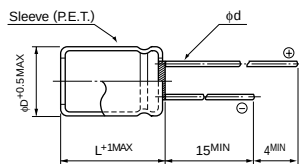
- Higher CV series with 7mm height.



## Specifications

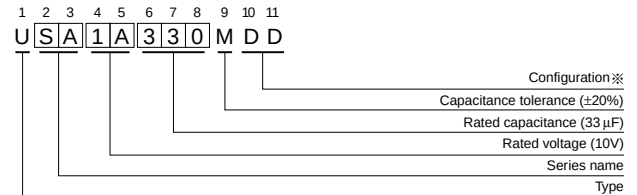
| Item                          | SA series                                                                                                                                                                                                                              |                 |      |      | SR series          |      |                                                   |      |    |
|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|------|------|--------------------|------|---------------------------------------------------|------|----|
| Category Temperature Range    | - 40 to +85°C                                                                                                                                                                                                                          |                 |      |      | -40 to +85°C       |      |                                                   |      |    |
| Rated Voltage Range           | 6.3 to 50V                                                                                                                                                                                                                             |                 |      |      | 4 to 50V           |      |                                                   |      |    |
| Rated Capacitance Range       | 0.1 to 220μF                                                                                                                                                                                                                           |                 |      |      | 0.1 to 470μF       |      |                                                   |      |    |
| 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 at 20°C                                                                                                                                                                                                  |                 |      |      |                    |      |                                                   |      |    |
|                               | Rated voltage (V)                                                                                                                                                                                                                      | 4               | 6.3  | 10   | 16                 | 25   | 35                                                | 50   |    |
|                               | tan δ (MAX.)                                                                                                                                                                                                                           | 0.35            | 0.24 | 0.20 | 0.16               | 0.14 | 0.12                                              | 0.10 |    |
| Stability at Low Temperature  | Measurement frequency : 120Hz                                                                                                                                                                                                          |                 |      |      |                    |      |                                                   |      |    |
|                               | Rated voltage (V)                                                                                                                                                                                                                      |                 | 4    | 6.3  | 10                 | 16   | 25                                                | 35   | 50 |
|                               | Impedance ratio                                                                                                                                                                                                                        | Z-25°C / Z+20°C | 6    | 4    | 3                  | 2    | 2                                                 | 2    | 2  |
|                               | ZT / Z20 (MAX.)                                                                                                                                                                                                                        | Z-40°C / Z+20°C | 12   | 8    | 6                  | 4    | 4                                                 | 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 2000 hours at 85°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 85°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 black sleeve.                                                                                                                                                                                       |                 |      |      |                    |      |                                                   |      |    |

## Radial Lead Type



|         | 4    | 5    | 6.3  | 8   |
|---------|------|------|------|-----|
| φD (mm) | 4    | 5    | 6.3  | 8   |
| P       | 1.5  | 2.0  | 2.5  | 3.5 |
| φd      | 0.45 | 0.45 | 0.45 | 0.5 |

Type numbering system (Example : SA series : 10V 33μF)



| Configuration | φ D | Pb-free leadwire | Pb-free PET sleeve |
|---------------|-----|------------------|--------------------|
| 4 to 8        |     |                  | DD                 |

## Dimensions

| V(Code)  | Series | 4 (0G) | 6.3 (0J) | 10 (1A) | 16 (1C) | 25 (1E) | 35 (1V) | 50 (1H) |
|----------|--------|--------|----------|---------|---------|---------|---------|---------|
| Cap.(μF) | Code   | SR     | SA       | SR      | SA      | SR      | SA      | SR      |
| 0.1      | 0R1    |        |          |         |         |         |         |         |
| 0.22     | R22    |        |          |         |         |         |         |         |
| 0.33     | R33    |        |          |         |         |         |         |         |
| 0.47     | R47    |        |          |         |         |         |         |         |
| 1        | 010    |        |          |         |         |         |         |         |
| 2.2      | 2R2    |        |          |         |         |         |         |         |
| 3.3      | 3R3    |        |          |         |         |         |         |         |
| 4.7      | 4R7    |        |          |         |         |         |         |         |
| 10       | 100    |        |          |         |         |         |         |         |
| 22       | 220    |        |          |         |         |         |         |         |
| 33       | 330    |        |          |         |         |         |         |         |
| 47       | 470    |        |          |         |         |         |         |         |
| 100      | 101    |        |          |         |         |         |         |         |
| 220      | 221    |        |          |         |         |         |         |         |
| 330      | 331    |        |          |         |         |         |         |         |
| 470      | 471    |        |          |         |         |         |         |         |

## Frequency coefficient of rated ripple current

| Frequency   | 50 Hz | 120 Hz | 300 Hz | 1 kHz | 10 kHz or more |
|-------------|-------|--------|--------|-------|----------------|
| Coefficient | 0.70  | 1.00   | 1.17   | 1.36  | 1.50           |

Rated ripple current (mArms) at 85°C 120Hz

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