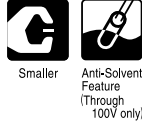
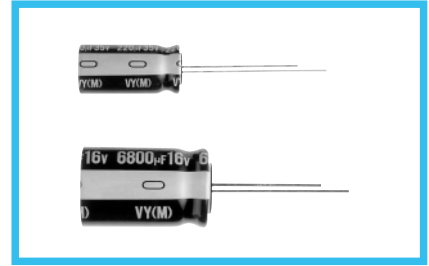
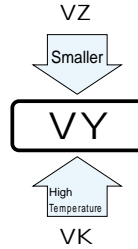


**VY series** Wide Temperature Range



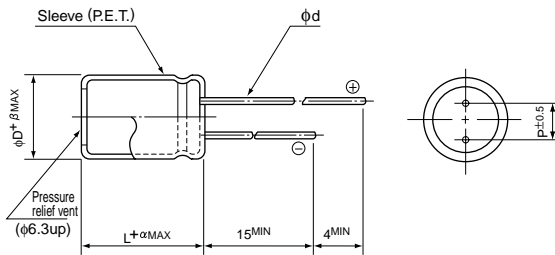
- One rank smaller case sizes than VZ series.
- Compliant to the RoHS directive (2002/95/EC).



## Specifications

| Item                          | Performance Characteristics   |   |
|-------------------------------|---|---|
| Category Temperature Range    | -55 to +105°C (6.3 to 100V), -40 to +105°C (160 to 400V), -25 to +105°C (450V)  |   |
| Rated Voltage Range           | 6.3 to 450V   |   |
| Rated Capacitance Range       | 0.1 to 68000μF  |   |
| Capacitance Tolerance         | ±20% at 120Hz, 20°C   |   |
| Leakage Current               | Rated voltage (V)   | 6.3 to 100  |
|                               |   | 160 to 450  |
| Tangent of loss angle (tan δ) | For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20°C   |   |
|                               | Rated voltage (V)   | 6.3 10 16 25 35 50 63 100 160 to 250 350 to 450               |
| Stability at Low Temperature  | Measurement frequency : 120Hz   |   |
|                               | Rated voltage (V)   | 6.3 10 16 25 35 to 50 63 to 100 160 to 200 250 to 350 400 450 |
| 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  | tan δ   |
| 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. |   |
|                               | Leakage current   |   |
| Marking                       | Printed with white color letter on black sleeve.  |   |

## Radial Lead Type



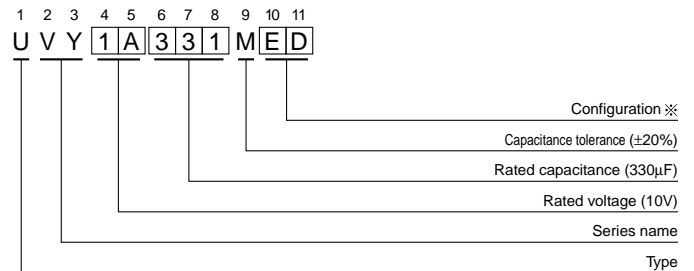
(mm)

| φD | 5   | 6.3 | 8   | 10  | 12.5 | 16  | 18  | 20   | 22   | 25   |
|----|-----|-----|-----|-----|------|-----|-----|------|------|------|
| P  | 2.0 | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 | 10.0 | 10.0 | 12.5 |
| φd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6  | 0.8 | 0.8 | 1.0  | 1.0  | 1.0  |
| β  | 0.5 | 0.5 | 0.5 | 0.5 | 0.5  | 0.5 | 0.5 | 0.5  | 1.0  | 1.0  |

|   |              |
|---|--------------|
| α | (L < 20) 1.5 |
|   | (L ≥ 20) 2.0 |

- Please refer to page 20 about the end seal configuration.

## Type numbering system (Example : 10V 330μF)



### ※ Configuration

| φ D        | Pb-free leadwire<br>Pb-free PET sleeve |
|------------|--|
| 5          | DD                                     |
| 6.3        | ED                                     |
| 8 · 10     | PD                                     |
| 12.5 to 18 | HD                                     |
| 20 to 25   | RD                                     |

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

- Dimension table in next page.

# ALUMINUM ELECTROLYTIC CAPACITORS



## ■ Dimensions

| Cap.( $\mu$ F) | V    |           | 6.3  |           | 10   |           | 16   |           | 25     |           | 35       |           | 50       |           | 63       |                                |                 |
|----------------|------|-----------|------|-----------|------|-----------|------|-----------|--------|-----------|----------|-----------|----------|-----------|----------|--------------------------------|-----------------|
|                | Code |           | 0J   |           | 1A   |           | 1C   |           | 1E     |           | 1V       |           | 1H       |           | 1J       |                                |                 |
| 0.1            | 0R1  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 1.3       |          |                                |                 |
| 0.22           | R22  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 2.9       |          |                                |                 |
| 0.33           | R33  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 4.3       |          |                                |                 |
| 0.47           | R47  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 7         |          |                                |                 |
| 1              | 010  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 13        |          |                                |                 |
| 2.2            | 2R2  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 20        |          |                                |                 |
| 3.3            | 3R3  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 25        |          |                                |                 |
| 4.7            | 4R7  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 30        |          |                                |                 |
| 10             | 100  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 46        |          |                                |                 |
| 22             | 220  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 68        | 5 × 11   | 71                             |                 |
| 33             | 330  |           |      |           |      |           |      |           |        |           |          |           | 5 × 11   | 90        | 6.3 × 11 | 100                            |                 |
| 47             | 470  |           |      |           |      |           |      |           |        |           | 5 × 11   | 93        | 6.3 × 11 | 115       | 6.3 × 11 | 120                            |                 |
| 68             | 680  |           |      |           |      |           |      |           |        |           | 6.3 × 11 | 110       | 6.3 × 11 | 150       | 8 × 11.5 | 155                            |                 |
| 100            | 101  |           |      |           |      |           |      |           | 5 × 11 | 125       | 6.3 × 11 | 150       | 8 × 11.5 | 190       | 8 × 11.5 | 200                            |                 |
| 220            | 221  |           |      | 5 × 11    | 155  | 6.3 × 11  | 190  | 6.3 × 11  | 200    | 8 × 11.5  | 250      | 10 × 12.5 | 300      | 10 × 16   | 335      |                                |                 |
| 330            | 331  |           |      | 6.3 × 11  | 210  | 6.3 × 11  | 225  | 8 × 11.5  | 275    | 10 × 12.5 | 350      | 10 × 16   | 410      | 10 × 20   | 510      |                                |                 |
| 470            | 471  |           |      | 6.3 × 11  | 250  | 8 × 11.5  | 315  | 10 × 12.5 | 380    | 10 × 16   | 460      | 10 × 20   | 540      | 12.5 × 20 | 640      |                                |                 |
| 1000           | 102  | 8 × 11.5  | 390  | 10 × 12.5 | 460  | 10 × 12.5 | 500  | 10 × 16   | 610    | 12.5 × 20 | 810      | 12.5 × 25 | 950      | 16 × 25   | 930      |                                |                 |
| 2200           | 222  | 10 × 16   | 635  | 10 × 16   | 705  | 10 × 20   | 710  | 12.5 × 25 | 1090   | 16 × 25   | 1260     | 16 × 31.5 | 1410     | 18 × 35.5 | 1650     |                                |                 |
| 3300           | 332  | 10 × 20   | 840  | 12.5 × 20 | 1000 | 12.5 × 25 | 1170 | 16 × 25   | 1400   | 16 × 31.5 | 1500     | 18 × 35.5 | 1770     | 20 × 40   | 1950     |                                |                 |
| 4700           | 472  | 12.5 × 20 | 1090 | 12.5 × 25 | 1260 | 16 × 25   | 1500 | 16 × 25   | 1570   | 16 × 35.5 | 1780     | 20 × 40   | 2100     | 22 × 50   | 2450     |                                |                 |
| 6800           | 682  | 12.5 × 25 | 1350 | 16 × 25   | 1570 | 16 × 25   | 1600 | 16 × 35.5 | 1850   | 18 × 40   | 2000     | 22 × 50   | 2500     | 25 × 50   | 2800     |                                |                 |
| 10000          | 103  | 16 × 25   | 1650 | 16 × 31.5 | 1820 | 16 × 35.5 | 1930 | 18 × 40   | 2000   | 22 × 50   | 2650     | 25 × 50   | 2850     |           |          |                                |                 |
| 15000          | 153  | 16 × 31.5 | 1820 | 16 × 35.5 | 2050 | 18 × 40   | 2210 | 22 × 50   | 2750   | 25 × 50   | 3100     |           |          |           |          |                                |                 |
| 22000          | 223  | 18 × 35.5 | 2280 | 18 × 40   | 2420 | 22 × 40   | 2710 | 25 × 50   | 3250   |           |          |           |          |           |          |                                |                 |
| 33000          | 333  | 20 × 40   | 2500 | 22 × 50   | 3210 | 25 × 50   | 3450 |           |        |           |          |           |          |           |          |                                |                 |
| 47000          | 473  | 22 × 50   | 2780 | 25 × 50   | 3570 |           |      |           |        |           |          |           |          |           |          |                                |                 |
| 68000          | 683  | 25 × 50   | 3070 |           |      |           |      |           |        |           |          |           |          |           |          |                                |                 |
|                |      |           |      |           |      |           |      |           |        |           |          |           |          |           |          | Case size<br>$\phi$ D × L (mm) | Rated<br>ripple |

| Cap.( $\mu$ F) | V    |           | 100  |           | 160  |           | 200 |           | 250  |           | 350 |           | 400 |           | 450 |                                |                 |
|----------------|------|-----------|------|-----------|------|-----------|-----|-----------|------|-----------|-----|-----------|-----|-----------|-----|--------------------------------|-----------------|
|                | Code |           | 2A   |           | 2C   |           | 2D  |           | 2E   |           | 2V  |           | 2G  |           | 2W  |                                |                 |
| 0.1            | 0R1  | 5 × 11    | 1.5  |           |      | 6.3 × 11  | 1.5 |           |      |           |     |           |     |           |     |                                |                 |
| 0.22           | R22  | 5 × 11    | 3.4  |           |      | 6.3 × 11  | 3.3 |           |      |           |     |           |     |           |     |                                |                 |
| 0.33           | R33  | 5 × 11    | 5.0  |           |      | 6.3 × 11  | 5   |           |      |           |     |           |     |           |     |                                |                 |
| 0.47           | R47  | 5 × 11    | 7.1  |           |      | 6.3 × 11  | 11  |           |      |           |     | 6.3 × 11  | 8.5 |           |     |                                |                 |
| 1              | 010  | 5 × 11    | 15   |           |      | 6.3 × 11  | 16  |           |      |           |     | 6.3 × 11  | 14  |           |     |                                |                 |
| 2.2            | 2R2  | 5 × 11    | 21   |           |      | 6.3 × 11  | 25  |           |      | 6.3 × 11  | 21  | 8 × 11.5  | 27  | 8 × 11.5  | 20  |                                |                 |
| 3.3            | 3R3  | 5 × 11    | 29   |           |      | 6.3 × 11  | 30  | 6.3 × 11  | 28   | 8 × 11.5  | 30  | 8 × 11.5  | 34  | 10 × 12.5 | 28  |                                |                 |
| 4.7            | 4R7  | 5 × 11    | 32   |           |      | 6.3 × 11  | 35  | 6.3 × 11  | 35   | 8 × 11.5  | 39  | 10 × 12.5 | 42  | 10 × 12.5 | 32  |                                |                 |
| 10             | 100  | 5 × 11    | 50   | 8 × 11.5  | 41   | 8 × 11.5  | 57  | 10 × 12.5 | 71   | 10 × 12.5 | 64  | 10 × 16   | 64  | 10 × 20   | 56  |                                |                 |
| 22             | 220  | 6.3 × 11  | 93   | 10 × 12.5 | 92   | 10 × 16   | 105 | 10 × 20   | 105  | 12.5 × 20 | 105 | 12.5 × 25 | 140 | 12.5 × 25 | 100 |                                |                 |
| 33             | 330  | 8 × 11.5  | 130  | 10 × 16   | 125  | 10 × 20   | 140 | 10 × 20   | 140  | 12.5 × 25 | 170 | 16 × 25   | 170 | 16 × 25   | 125 |                                |                 |
| 47             | 470  | 8 × 11.5  | 140  | 10 × 20   | 150  | 12.5 × 20 | 195 | 12.5 × 20 | 190  | 16 × 25   | 210 | 16 × 25   | 200 | 16 × 31.5 | 155 |                                |                 |
| 68             | 680  | 10 × 12.5 | 190  | 12.5 × 20 | 250  | 12.5 × 25 | 250 | 16 × 25   | 270  | 16 × 25   | 285 | 16 × 31.5 | 240 | 18 × 35.5 | 185 |                                |                 |
| 100            | 101  | 10 × 16   | 240  | 12.5 × 25 | 310  | 16 × 25   | 320 | 16 × 25   | 310  | 18 × 35.5 | 370 | 18 × 35.5 | 310 | 18 × 40   | 200 |                                |                 |
| 220            | 221  | 12.5 × 20 | 390  | 16 × 31.5 | 410  | 16 × 35.5 | 500 | 18 × 35.5 | 485  | 22 × 50   | 540 | 22 × 50   | 460 | 25 × 50   | 250 |                                |                 |
| 330            | 331  | 12.5 × 25 | 540  | 18 × 35.5 | 570  | 18 × 40   | 675 | 20 × 40   | 710  | 25 × 50   | 710 |           |     |           |     |                                |                 |
| 470            | 471  | 16 × 25   | 715  | 18 × 40   | 855  | 22 × 40   | 925 | 22 × 50   | 1000 |           |     |           |     |           |     |                                |                 |
| 1000           | 102  | 18 × 35.5 | 960  | 25 × 50   | 1350 |           |     |           |      |           |     |           |     |           |     |                                |                 |
| 2200           | 222  | 22 × 50   | 1750 |           |      |           |     |           |      |           |     |           |     |           |     |                                |                 |
| 3300           | 332  | 25 × 50   | 2070 |           |      |           |     |           |      |           |     |           |     |           |     |                                |                 |
|                |      |           |      |           |      |           |     |           |      |           |     |           |     |           |     | Case size<br>$\phi$ D × L (mm) | Rated<br>ripple |

Rated ripple current (mA rms) at 105°C 120Hz

## ● Frequency coefficient of rated ripple current

| V          | Cap.( $\mu$ F) | Frequency |       |       |       |                |
|------------|----------------|-----------|-------|-------|-------|----------------|
|            |                | 50Hz      | 120Hz | 300Hz | 1 kHz | 10 kHz or more |
| 6.3 to 100 | 0.1 to 68      | 0.75      | 1.00  | 1.35  | 1.57  | 2.00           |
|            | 100 to 470     | 0.80      | 1.00  | 1.23  | 1.34  | 1.50           |
|            | 1000 to 68000  | 0.85      | 1.00  | 1.10  | 1.13  | 1.15           |
| 160 to 450 | 0.1 to 220     | 0.80      | 1.00  | 1.25  | 1.40  | 1.60           |
|            | 330 to 1000    | 0.90      | 1.00  | 1.10  | 1.13  | 1.15           |