# ALUMINUM ELECTROLYTIC CAPACITORS

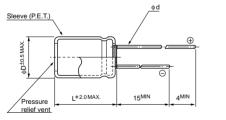
# nichicon

| PZ High Voltage, Smaller-sized   |                                |   |
|--|--------------------------------|---|
|  | Smaller High Ripple<br>Current |   |
| <ul> <li>High ripple current.</li> <li>Load life of 2000 hours at 105°C.</li> <li>Suited for ballast applications.</li> <li>Compliant to the RoHS directive (2002/95/EC).</li> </ul> | PT<br>Smaller<br>PZ            | 04 82#4504 82#4504 82<br>P200<br>P200<br>00#4004 100#4004<br>P200<br>P200 |

#### Specifications

| Item                                 | Performance Characteristics   |                        |  |          |  |             |  |  |  |
|--------------------------------------|---|------------------------|--|----------|--|-------------|--|--|--|
| Category Temperature Range           | -25 to +105°C   |                        |  |          |  |             |  |  |  |
| Rated Voltage Range                  | 200 to 450V   |                        |  |          |  |             |  |  |  |
| Rated Capacitance Range              | 18 to 470µF   |                        |  |          |  |             |  |  |  |
| Capacitance Tolerance                | ±20% at 120Hz, 20°C   |                        |  |          |  |             |  |  |  |
| Leakage Current                      | After 1 minute's application of rated vo  | ltage, leakage         | current is                                     | not more | than 0.04CV  | /+100 (μΑ). |  |  |  |
| Tangent of loss angle (tan $\delta)$ | Rated voltage (V) 200   | t frequency : 1<br>400 | 42   | 0        | erature : 20°C<br>450  | ]           |  |  |  |
|                                      | tan δ (MAX.) 0.12   | 0.15                   | 0.2  | 0        | 0.20   |             |  |  |  |
|                                      | Measurement frequency : 120Hz   |                        |  |          |  |             |  |  |  |
| Stability at Low Temperature         | Rated voltage (V)<br>Impedance ratio ZT / Z20 (MAX.) Z-25°C / Z+20  | 200<br>PC 3            | 400<br>8                                       | 420      | 450  | -           |  |  |  |
|                                      |   | 0 3                    | 0  | 0        | 0  |             |  |  |  |
| Endurance                            | The specifications listed at right shall be capacitors are restored to 20°C after Dependence of the second | rated                  | Capacitance change<br>tan δ<br>Leakage current |          | Within ±20% of the initial capacitance value<br>200% or less than the initial specified value<br>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.   |                        |  |          |  |             |  |  |  |

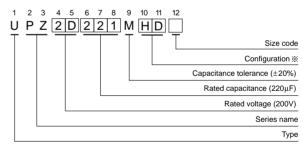
#### Radial Lead Type



|     |      |         | (mm)        |
|-----|------|---------|-------------|
| 10  | 12.5 | 16      | 18          |
| 5.0 | 5.0  | 7.5     | 7.5         |
| 0.6 | 0.8  | 0.8     | 0.8         |
|     | 5.0  | 5.0 5.0 | 5.0 5.0 7.5 |



## Type numbering system (Example : 200V 220 $\mu\text{F})$



\*Configuration

| φD         | Pb-free leadwire<br>Pb-free PET sleeve |
|------------|--|
| 10         | PD                                     |
| 12.5 to 18 | HD                                     |
|            |  |

• Please refer to page 20 about the end seal configulation.

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.



#### Dimensions

| V        |      | 200              | 400  |           | 420 |           | 450       |                                  |              |     |
|----------|------|------------------|------|-----------|-----|-----------|-----------|----------------------------------|--------------|-----|
| Cap.(µF) | Code | e 2D             |      | 2G        |     | W6        |           | 2W                               |              |     |
| 18       | 180  |                  |      |           |     |           |           | 10×31.5                          | 180          |     |
| 22       | 220  |                  |      |           |     | 10×31.5   | 200       |                                  |              |     |
| 27       | 270  |                  |      | 10×31.5   | 240 |           |           |                                  |              |     |
| 33       | 330  |                  |      |           |     |           |           | 12.5×31.5                        | 280          |     |
| 39       | 390  |                  |      |           |     | 12.5×31.5 | 310       | 12.5×35.5                        | 320          |     |
| 47       | 470  |                  |      | 12.5×31.5 | 370 | 12.5×35.5 | 360       | 12.5×40                          | 380          |     |
| 56       | 560  |                  |      | 12.5×35.5 | 420 | 12.5×40   | 430       | 16×31.5                          | 440          |     |
| 68       | 680  |                  |      | 12.5×40   | 480 | 16×31.5   | 510       | 16×35.5                          | 490          |     |
| 82       | 820  | 10×31.5          | 400  |           |     | 16×35.5   | 570       | 16×40                            | 550          |     |
| 02       | 020  | 10×31.5          | 400  |           |     | 10×35.5   | 570       | ▲ 18 ×31.5                       | 550          |     |
| 100      | 101  |                  |      | 16×31.5   | 580 | 16×40     | 610       | 18×35.5                          | 650          |     |
| 100      | 101  |                  |      | 10×31.5   | 500 | ▲ 18×31.5 | 610       |                                  |              |     |
| 120      | 121  |                  |      | 16×35.5   | 670 | 18×35.5   | 660       | 660                              | 18×40        | 740 |
| 120      | 121  |                  |      | ▲ 18×31.5 | 670 | 10×30.5   |           | 10 ~ 40                          | 740          |     |
| 150      | 151  | 12.5×31.5        | 620  | 16×40     | 770 | 18×40     | 710       | 710                              |              |     |
| 100      | 101  | 12.0 × 01.0      | 020  | ▲ 18×35.5 | 770 | 10/10     |           |                                  |              |     |
| 180      | 181  | 12.5×35.5        | 700  | 18×40     | 880 |           |           |                                  |              |     |
| 220      | 221  | 12.5×40          | 800  |           |     |           |           |                                  |              |     |
| 270      | 271  | 16×31.5          | 870  |           |     |           | <br> <br> |                                  |              |     |
| 330      | 331  | 16×35.5          | 1010 |           |     |           | <br> <br> |                                  |              |     |
| 330      | 001  | <b>▲</b> 18×31.5 | 1010 |           |     |           |           |                                  |              |     |
| 390      | 391  | 16×40            | 1130 |           |     |           |           |                                  |              |     |
|          | 531  | <b>▲</b> 18×35.5 | 1120 |           |     |           |           |                                  |              |     |
| 470      | 471  | 18×40            | 1270 |           |     |           |           | Case size $\phi D \times L$ (mm) | Rated ripple |     |

Rated ripple current (mArms) at 105°C 120Hz

▲ : In this case, 6 will be put at 12th digit of type numbering system.

## • Frequency coefficient of rated ripple current

| V          | 60Hz | 120Hz | 500Hz | 1kHz | 10kHz or more |
|------------|------|-------|-------|------|---------------|
| 200        | 0.80 | 1.00  | 1.20  | 1.30 | 1.40          |
| 400 to 450 | 0.80 | 1.00  | 1.25  | 1.40 | 1.50          |