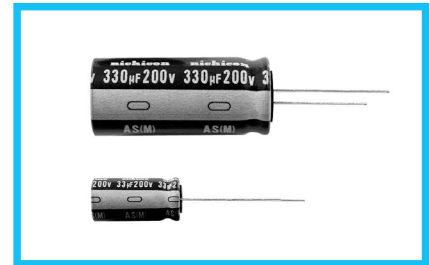
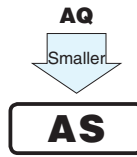


ALUMINUM ELECTROLYTIC CAPACITORS

AS

Wide Temperature Range, Miniature Type Permissible
Abnormal Voltage
series

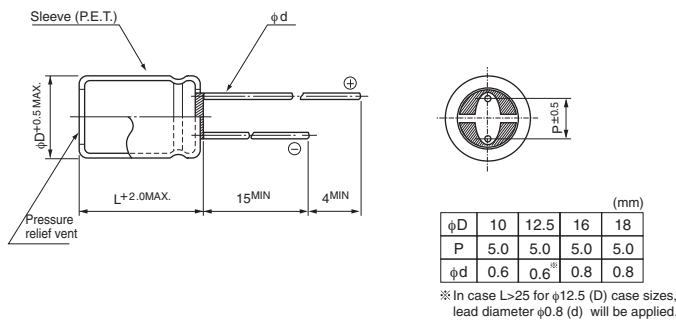


- Improved safety feature for abnormally excessive voltage.
- High ripple current product.
- Compliant to the RoHS directive (2011/65/EU).

Specifications

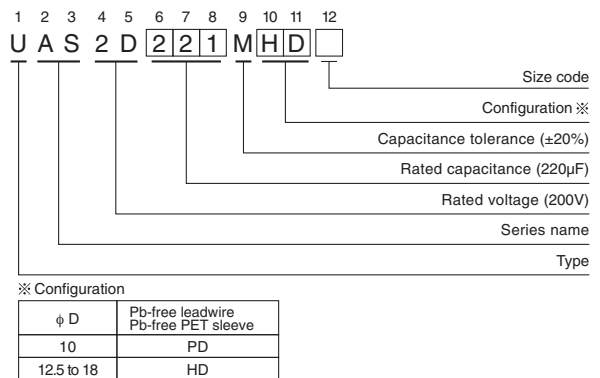
| Item | Performance Characteristics | | | | | | | | | | | | |
|---------------------------------|---|--|--------------------|--|--------------|---|-----------------|---|-------------------|-----------------|-------------------------|-------------------|-------------------------------|
| Category Temperature Range | -40 to +105°C | | | | | | | | | | | | |
| Rated Voltage Range | 200V, 400V | | | | | | | | | | | | |
| Rated Capacitance Range | 4.7 to 330µF | | | | | | | | | | | | |
| Capacitance Tolerance | ±20% at 120Hz, 20°C | | | | | | | | | | | | |
| Leakage Current | After 1 minute's application of rated voltage at 20°C, leakage current is 0.04CV+100 (µA) or less. | | | | | | | | | | | | |
| Tangent of loss angle (tan δ) | <table border="1"> <tr> <th>Rated voltage (V)</th> <th>200</th> <th>400</th> </tr> <tr> <td>tan δ (MAX.)</td> <td>0.15</td> <td>0.15</td> </tr> </table> | Rated voltage (V) | 200 | 400 | tan δ (MAX.) | 0.15 | 0.15 | Measurement frequency: 120Hz at 20°C | | | | | |
| Rated voltage (V) | 200 | 400 | | | | | | | | | | | |
| tan δ (MAX.) | 0.15 | 0.15 | | | | | | | | | | | |
| Stability at Low Temperature | <table border="1"> <tr> <th colspan="2">Rated voltage (V)</th> <th>200</th> <th>400</th> </tr> <tr> <td rowspan="2">Impedance ratio ZT / Z20 (MAX.)</td> <td>Z-25°C / Z+20°C</td> <td>3</td> <td>8</td> </tr> <tr> <td>Z-40°C / Z+20°C</td> <td>6</td> <td>10</td> </tr> </table> | Rated voltage (V) | | 200 | 400 | Impedance ratio ZT / Z20 (MAX.) | Z-25°C / Z+20°C | 3 | 8 | Z-40°C / Z+20°C | 6 | 10 | Measurement frequency : 120Hz |
| Rated voltage (V) | | 200 | 400 | | | | | | | | | | |
| Impedance ratio ZT / Z20 (MAX.) | Z-25°C / Z+20°C | 3 | 8 | | | | | | | | | | |
| | Z-40°C / Z+20°C | 6 | 10 | | | | | | | | | | |
| Endurance | The specifications listed at right shall be met when the capacitors are restored to 20°C after D.C. bias plus rated ripple current is applied for 2000 hours at 105°C, the peak voltage shall not exceed the rated voltage. | <table border="1"> <tr> <td>Capacitance change</td> <td>Within ±20% of the initial capacitance value</td> </tr> <tr> <td>tan δ</td> <td>200% or less than the initial specified value</td> </tr> <tr> <td>Leakage current</td> <td>Less than or equal to the initial specified value</td> </tr> </table> | 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 | | | | | |
| 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 leaving capacitors under no load at 105°C for 1000 hours they shall meet the specified values for the endurance characteristics listed above. | | | | | | | | | | | | |
| Safety Performance | The pressure relief vent will operate in normal conditions, with no dangerous conditions such as flames, ignitions or dispersion of pieces of the capacitor and / or case. | | | | | | | | | | | | |
| Marking | Printed with white color letter on dark brown sleeve. | <table border="1"> <tr> <th rowspan="3">voltage (V)</th> <th colspan="2">Test conditions</th> </tr> <tr> <th>Limited DC current</th> <th>Test Voltage</th> </tr> <tr> <td>200</td> <td>300VDC and 375VDC</td> </tr> <tr> <td>400</td> <td>2A (4A : 100µF or more)</td> <td>500VDC and 600VDC</td> </tr> </table> | voltage (V) | Test conditions | | Limited DC current | Test Voltage | 200 | 300VDC and 375VDC | 400 | 2A (4A : 100µF or more) | 500VDC and 600VDC | |
| | | voltage (V) | | Test conditions | | | | | | | | | |
| | | | | Limited DC current | Test Voltage | | | | | | | | |
| 200 | 300VDC and 375VDC | | | | | | | | | | | | |
| 400 | 2A (4A : 100µF or more) | 500VDC and 600VDC | | | | | | | | | | | |

Radial Lead Type



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

Type numbering system (Example : 200V 220µF)



Dimensions

| Cap. (µF) | Code | V | 200 (2D) | | | | 400 (2G) | | | | | |
|-----------|------|---------|----------|-------------|-----|-----------|-----------|-----------|-----------|-----|------------|-----|
| | | | φ10 | φ12.5 | φ16 | φ18 | φ10 | φ12.5 | φ16 | φ18 | | |
| 4.7 | 4R7 | | | | | 10 × 9 | 60 | | | | | |
| 22 | 220 | | | | | | 12.5 × 20 | 165 | | | | |
| 27 | 270 | | | | | | 12.5 × 25 | 200 | | | | |
| 33 | 330 | 10 × 20 | 160 | | | | | | 16 × 20 | 225 | | |
| 39 | 390 | | | | | | | | 16 × 25 | 255 | ▲18 × 20 | 255 |
| 47 | 470 | 10 × 25 | 195 | ▲12.5 × 20 | 195 | | | | 16 × 25 | 290 | ▲18 × 20 | 280 |
| 56 | 560 | | | 12.5 × 20 | 210 | | | | 16 × 31.5 | 340 | ▲18 × 25 | 320 |
| 68 | 680 | | | 12.5 × 25 | 320 | | | | 16 × 35.5 | 385 | ▲18 × 25 | 360 |
| 82 | 820 | | | 12.5 × 25 | 360 | | | | 16 × 40 | 435 | ▲18 × 31.5 | 430 |
| 100 | 101 | | | 12.5 × 31.5 | 430 | ▲16 × 20 | 430 | | | | 18 × 35.5 | 490 |
| 120 | 121 | | | | | | | | | | 18 × 40 | 540 |
| 150 | 151 | | | | | 16 × 25 | 460 | ▲18 × 20 | 460 | | | |
| 180 | 181 | | | | | 16 × 31.5 | 600 | ▲18 × 25 | 600 | | | |
| 220 | 221 | | | | | | | 18 × 31.5 | 710 | | | |
| 270 | 271 | | | | | | | 18 × 35.5 | 890 | | | |
| 330 | 331 | | | | | | | 18 × 40 | 910 | | | |

Frequency coefficient of rated ripple current

| Frequency | 50, 60Hz | 120Hz | 300Hz | 1kHz | 10kHz or more |
|-------------|----------|-------|-------|------|---------------|
| Coefficient | 0.80 | 1.00 | 1.25 | 1.40 | 1.60 |

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

- ▲ : In case of low profile type, [6] will be put at 12th digit of type numbering system. 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.8100D