

ALUMINUM ELECTROLYTIC CAPACITORS

RZ series Compact & Low-Profile Sized, Wide Temperature Range



- Very small case sizes same as RS series, but operating over wide temperature range of -55 (-40) to $+105^{\circ}\text{C}$.
- Compliant to the RoHS directive (2002/95/EC).

RZ



Specifications

| Item | Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|---|------------|------------|-------|--|---|------|------|------|------|------|-----|-----|--|------|------|------|------|------|------|------|------|------|------|------|------|--|----|---|---|---|---|---|---|---|---|---|---|
| Category Temperature Range | -55 to $+105^{\circ}\text{C}$ (6.3 to 100V), -40 to $+105^{\circ}\text{C}$ (160 to 400V) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Voltage Range | 6.3 to 400V | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rated Capacitance Range | 0.1 to 10000 μF | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Capacitance Tolerance | $\pm 20\%$ at 120Hz, 20°C | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Leakage Current | <table border="1"> <tr> <th>Rated voltage (V)</th> <th>6.3 to 100</th> <th>160 to 400</th> </tr> <tr> <td>_____</td> <td>After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.</td> <td>After 1 minute's application of rated voltage, $I = 0.04CV + 100$ (μA) or less</td> </tr> </table> | Rated voltage (V) | 6.3 to 100 | 160 to 400 | _____ | After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. | After 1 minute's application of rated voltage, $I = 0.04CV + 100$ (μA) or less | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Rated voltage (V) | 6.3 to 100 | 160 to 400 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Tangent of loss angle ($\tan \delta$) | For capacitance of more than 1000 μF , add 0.02 for every increase of 1000 μF . Measurement frequency : 120Hz at 20°C <table border="1"> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> </tr> <tr> <td>$\tan \delta$ (MAX.)</td> <td>0.28</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.08</td> <td>0.20</td> <td>0.20</td> <td>0.20</td> <td>0.25</td> </tr> </table> | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 | $\tan \delta$ (MAX.) | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.20 | 0.20 | 0.20 | 0.25 | | | | | | | | | | | | |
| Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $\tan \delta$ (MAX.) | 0.28 | 0.24 | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.08 | 0.20 | 0.20 | 0.20 | 0.25 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Stability at Low Temperature | Measurement frequency : 120Hz | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <table border="1"> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>100</th> <th>160</th> <th>200</th> <th>250</th> <th>400</th> </tr> <tr> <td>Impedance ratio $Z_{-25^{\circ}\text{C}} / Z_{+20^{\circ}\text{C}}$</td> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>3</td> <td>3</td> <td>6</td> </tr> <tr> <td>$ZT / Z20$ (MAX.) $Z_{-40^{\circ}\text{C}} / Z_{+20^{\circ}\text{C}}$</td> <td>10</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>4</td> <td>6</td> <td>10</td> </tr> </table> | Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 | Impedance ratio $Z_{-25^{\circ}\text{C}} / Z_{+20^{\circ}\text{C}}$ | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 6 | $ZT / Z20$ (MAX.) $Z_{-40^{\circ}\text{C}} / Z_{+20^{\circ}\text{C}}$ | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 6 |
| Rated voltage (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 100 | 160 | 200 | 250 | 400 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Impedance ratio $Z_{-25^{\circ}\text{C}} / Z_{+20^{\circ}\text{C}}$ | 5 | 4 | 3 | 2 | 2 | 2 | 2 | 2 | 3 | 3 | 3 | 6 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| $ZT / Z20$ (MAX.) $Z_{-40^{\circ}\text{C}} / Z_{+20^{\circ}\text{C}}$ | 10 | 8 | 6 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 6 | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 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 $\pm 20\%$ of the initial capacitance value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | $\tan \delta$ | 200% or less than the initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Shelf Life | Leakage current | Less than or equal to the initial specified value | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 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 black sleeve. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Radial Lead Type



| α | | (mm) | | | | | | | | | | |
|------------------|-----|----------|-----|-----|-----|-----|------|-----|-----|------|--|--|
| $\phi D < 20$ | 1.5 | ϕD | 5 | 6.3 | 8 | 10 | 12.5 | 16 | 18 | 20 | | |
| $\phi D \geq 20$ | 2.0 | P | 2.0 | 2.5 | 3.5 | 5.0 | 5.0 | 7.5 | 7.5 | 10.0 | | |
| | | ϕd | 0.5 | 0.5 | 0.6 | 0.6 | 0.6 | 0.8 | 0.8 | 1.0 | | |

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

Type numbering system (Example : 10V 330 μF)



Configuration

| ϕD | Pb-free leadwire Pb-free PET sleeve |
|------------|--|
| 5 - 6.3 | DD |
| 8 - 10 | PD |
| 12.5 to 18 | HD |
| 20 | 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

RZ series

■Dimensions

| V | | 6.3 | | 10 | | 16 | | 25 | | 35 | | 50 | |
|----------|------|---------|------|---------|------|-----------|------|---------|------|-----------|------|------------------------|-----------------|
| Cap.(μF) | Code | 0J | | 1A | | 1C | | 1E | | 1V | | 1H | |
| 0.1 | 0R1 | | | | | | | | | | | 5×9 | 1.1 |
| 0.22 | R22 | | | | | | | | | | | 5×9 | 2.3 |
| 0.33 | R33 | | | | | | | | | | | 5×9 | 3.5 |
| 0.47 | R47 | | | | | | | | | | | 5×9 | 5 |
| 1 | 010 | | | | | | | | | | | 5×9 | 12 |
| 2.2 | 2R2 | | | | | | | | | | | 5×9 | 18 |
| 3.3 | 3R3 | | | | | | | | | | | 5×9 | 25 |
| 4.7 | 4R7 | | | | | | | 5×9 | 20 | 5×9 | 25 | 5×9 | 30 |
| 10 | 100 | | | | | 5×9 | 30 | 5×9 | 35 | 5×9 | 40 | 5×9 | 46 |
| 22 | 220 | 5×9 | 25 | 5×9 | 40 | 5×9 | 50 | 5×9 | 55 | 5×9 | 60 | 5×9 | 65 |
| 33 | 330 | 5×9 | 40 | 5×9 | 55 | 5×9 | 60 | 5×9 | 70 | 5×9 | 75 | 6.3×9 | 85 |
| 47 | 470 | 5×9 | 55 | 5×9 | 65 | 5×9 | 70 | 5×9 | 80 | 6.3×9 | 95 | 6.3×9 | 100 |
| 100 | 101 | 5×9 | 90 | 5×9 | 95 | 6.3×9 | 115 | 6.3×9 | 130 | 8×9 | 155 | 10×9 | 170 |
| 220 | 221 | 6.3×9 | 145 | 6.3×9 | 155 | 8×9 | 205 | 10×9 | 220 | 10×9 | 235 | 10×12.5 | 290 |
| 330 | 331 | 6.3×9 | 180 | 8×9 | 210 | 10×9 | 240 | 10×9 | 270 | 10×12.5 | 340 | 12.5×12.5 | 370 |
| 470 | 471 | 8×9 | 235 | 8×9 | 275 | 10×9 | 290 | 10×12.5 | 370 | 12.5×12.5 | 420 | 16×15 | 540 |
| 1000 | 102 | 10×9 | 370 | 10×12.5 | 450 | 12.5×12.5 | 520 | 12.5×15 | 590 | 16×15 | 720 | 18×20 | 830 |
| 2200 | 222 | 12.5×15 | 635 | 12.5×15 | 690 | 16×15 | 830 | 18×15 | 970 | 18×20 | 1110 | 20×25 | 1250 |
| 3300 | 332 | 16×15 | 860 | 16×15 | 940 | 18×15 | 1050 | 18×20 | 1220 | 20×25 | 1430 | | |
| 4700 | 472 | 16×15 | 1010 | 18×15 | 1120 | 18×20 | 1260 | 18×25 | 1470 | | | | |
| 6800 | 682 | 18×15 | 1200 | 18×20 | 1330 | 18×25 | 1560 | | | | | | |
| 10000 | 103 | 18×20 | 1450 | 18×25 | 1700 | | | | | | | Case size φD×L (mm) | Rated ripple |

| V | | 63 | | 100 | | 160 | | 200 | | 250 | | 400 | |
|----------|------|-----------|-----|---------|-----|--------|-----|--------|-----|--------|-----|------------------------|-----------------|
| Cap.(μF) | Code | 1J | | 2A | | 2C | | 2D | | 2E | | 2G | |
| 0.1 | 0R1 | | | 5×9 | 1.2 | | | | | | | | |
| 0.22 | R22 | | | 5×9 | 3 | | | | | | | | |
| 0.33 | R33 | | | 5×9 | 4.5 | | | | | | | | |
| 0.47 | R47 | | | 5×9 | 6.5 | | | | | | | | |
| 1 | 010 | | | 5×9 | 12 | | | | | | | | |
| 2.2 | 2R2 | | | 5×9 | 17 | | | | | | | | |
| 3.3 | 3R3 | | | 5×9 | 25 | | | | | | | | |
| 4.7 | 4R7 | | | 6.3×9 | 32 | | | | | | | | |
| 10 | 100 | 5×9 | 42 | 6.3×9 | 50 | | | | | | | 16×15 | 100 |
| 22 | 220 | 6.3×9 | 71 | 8×9 | 93 | | | | | 16×15 | 200 | ●18×15 | 200 |
| 33 | 330 | 8×9 | 100 | 10×9 | 130 | | | 16×15 | 250 | ●18×15 | 250 | 18×20 | 250 |
| 47 | 470 | 8×9 | 120 | 10×12.5 | 165 | 16×15 | 300 | ●18×15 | 300 | △18×20 | 300 | ★18×25 | 300 |
| 68 | 680 | | | | | ●18×15 | 350 | △18×20 | 350 | 18×20 | 350 | 20×25 | 350 |
| 100 | 101 | 10×9 | 215 | 12.5×15 | 265 | △18×20 | 420 | ★18×25 | 420 | 18×25 | 420 | | |
| 150 | 151 | | | | | ★18×25 | 510 | 18×25 | 510 | | | | |
| 220 | 221 | 12.5×12.5 | 335 | 16×15 | 440 | 20×25 | 550 | | | | | | |
| 330 | 331 | 12.5×15 | 510 | 18×15 | 540 | | | | | | | | |
| 470 | 471 | 16×15 | 640 | | | | | | | | | Case size φD×L (mm) | Rated ripple |

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

Size φ16×20 is available for capacitors marked "●"
 Size φ20×15 is available for capacitors marked "△"
 Size φ20×20 is available for capacitors marked "★"

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

●Frequency coefficient of rated ripple current

| V | Frequency | | 50Hz | 120Hz | 300Hz | 1 kHz | 10kHz or more |
|------------|---------------|--|------|-------|-------|-------|---------------|
| | Cap.(μF) | | | | | | |
| 6.3 to 100 | 0.1 to 47 | | 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 10000 | | 0.85 | 1.00 | 1.10 | 1.13 | 1.15 |
| 160 to 400 | 10 to 220 | | 0.80 | 1.00 | 1.25 | 1.40 | 1.60 |



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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