

## RZW Series

### Features

- 105°C, 4,000 ~ 10,000 hours assured
- Low ESR, suitable for switching power supplies
- Smaller size with large permissible ripple current
- RoHs Compliance

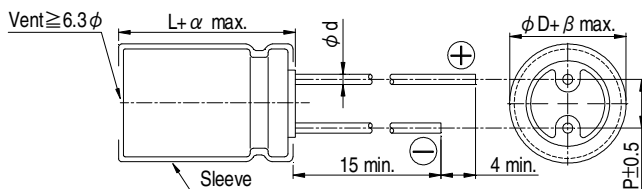


Sleeve & Marking Color: Black & Golden

### Specifications

| Items                                      | Performance   |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
|--|---|---|--|--|------------------------------|---|-----------------------------------|------------------------------|------------------------|--------------------|-----------------------------------|------|-----------------|------------------------|------|----------|------|------|------|-----|-----------|------|------|------|-----|-------------|-----|------|------|-----|----------------|-----|------|------|-----|
| Category Temperature Range                 | -55°C ~ +105°C  |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Capacitance Tolerance                      | ±20% (at 120Hz, 20°C)   |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Leakage Current (at 20°C)                  | $I = 0.01CV$ or $3 (\mu A)$ whichever is greater (after 2 minutes)<br>Where, C = rated capacitance in $\mu F$ , V = rated DC working voltage in V   |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Tan $\delta$ (at 120 Hz, 20°C)             | <table border="1"> <tr> <td>Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Tan<math>\delta</math> (max)</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> </tr> </table> <p>When the capacitance exceeds 1000<math>\mu F</math>, 0.02 shall be added every 1000<math>\mu F</math> increase.</p>  | Rated Voltage   | 6.3  | 10   | 16                           | 25  | 35                                | 50                           | 63                     | Tan $\delta$ (max) | 0.22                              | 0.19 | 0.16            | 0.14                   | 0.12 | 0.10     | 0.09 |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Rated Voltage                              | 6.3   | 10  | 16   | 25   | 35                           | 50  | 63                                |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Tan $\delta$ (max)                         | 0.22  | 0.19  | 0.16   | 0.14   | 0.12                         | 0.10  | 0.09                              |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Low Temperature Characteristics (at 120Hz) | <p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <tr> <td>Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> </tr> <tr> <td>Impedance Ratio</td> <td><math>Z(-55^\circ C)/Z(+20^\circ C)</math></td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>   | Rated Voltage   | 6.3  | 10   | 16                           | 25  | 35                                | 50                           | 63                     | Impedance Ratio    | $Z(-55^\circ C)/Z(+20^\circ C)$   | 3    | 3               | 3                      | 3    | 3        | 3    |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Rated Voltage                              | 6.3   | 10  | 16   | 25   | 35                           | 50  | 63                                |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Impedance Ratio                            | $Z(-55^\circ C)/Z(+20^\circ C)$   | 3   | 3  | 3  | 3                            | 3   | 3                                 |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Endurance                                  | <table border="1"> <tr> <td rowspan="2">Time</td> <td>6.3 ~ 10V</td> <td>4,000 Hrs for <math>\phi D = 5 \sim 6.3</math> mm;<br/>6,000 Hrs for <math>\phi D = 8 \sim 10</math> mm;<br/>8,000 Hrs for <math>\phi D \geq 12.5</math> mm</td> </tr> <tr> <td>16 ~ 63V</td> <td>5,000 Hrs for <math>\phi D = 5 \sim 6.3</math> mm;<br/>7,000 Hrs for <math>\phi D = 8 \sim 10</math> mm;<br/>10,000 Hrs for <math>\phi D \geq 12.5</math> mm</td> </tr> <tr> <td>Capacitance Change</td> <td colspan="2">Within ±25% of initial value</td> </tr> <tr> <td>Tan<math>\delta</math></td> <td colspan="2">Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td colspan="2">Within specified value</td> </tr> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied with rated ripple current for 4,000 ~ 10,000 hours at 105°C.</p> | Time  | 6.3 ~ 10V  | 4,000 Hrs for $\phi D = 5 \sim 6.3$ mm;<br>6,000 Hrs for $\phi D = 8 \sim 10$ mm;<br>8,000 Hrs for $\phi D \geq 12.5$ mm | 16 ~ 63V                     | 5,000 Hrs for $\phi D = 5 \sim 6.3$ mm;<br>7,000 Hrs for $\phi D = 8 \sim 10$ mm;<br>10,000 Hrs for $\phi D \geq 12.5$ mm | Capacitance Change                | Within ±25% of initial value |                        | Tan $\delta$       | Less than 200% of specified value |      | Leakage Current | Within specified value |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Time                                       | 6.3 ~ 10V   |   | 4,000 Hrs for $\phi D = 5 \sim 6.3$ mm;<br>6,000 Hrs for $\phi D = 8 \sim 10$ mm;<br>8,000 Hrs for $\phi D \geq 12.5$ mm |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
|  | 16 ~ 63V  | 5,000 Hrs for $\phi D = 5 \sim 6.3$ mm;<br>7,000 Hrs for $\phi D = 8 \sim 10$ mm;<br>10,000 Hrs for $\phi D \geq 12.5$ mm |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Capacitance Change                         | Within ±25% of initial value  |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Tan $\delta$                               | Less than 200% of specified value   |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Leakage Current                            | Within specified value  |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Shelf Life Test                            | <table border="1"> <tr> <td>Test Time</td> <td>1,000 Hrs</td> </tr> <tr> <td>Capacitance Change</td> <td>Within ±25% of initial value</td> </tr> <tr> <td>Tan<math>\delta</math></td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </table> <p>* The above specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°C without voltage applied.</p>   | Test Time   | 1,000 Hrs  | Capacitance Change   | Within ±25% of initial value | Tan $\delta$  | Less than 200% of specified value | Leakage Current              | Within specified value |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Test Time                                  | 1,000 Hrs   |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Capacitance Change                         | Within ±25% of initial value  |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Tan $\delta$                               | Less than 200% of specified value   |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Leakage Current                            | Within specified value  |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| Ripple Current and Frequency Multipliers   | <table border="1"> <tr> <td rowspan="2">Cap.(<math>\mu F</math>)</td> <td colspan="4">Freq.(Hz)</td> </tr> <tr> <td>120</td> <td>1k</td> <td>10k</td> <td>100k up</td> </tr> <tr> <td>under ~ 33</td> <td>0.42</td> <td>0.70</td> <td>0.90</td> <td>1.0</td> </tr> <tr> <td>39 ~ 270</td> <td>0.50</td> <td>0.73</td> <td>0.92</td> <td>1.0</td> </tr> <tr> <td>330 ~ 680</td> <td>0.55</td> <td>0.77</td> <td>0.94</td> <td>1.0</td> </tr> <tr> <td>820 ~ 1,800</td> <td>0.6</td> <td>0.80</td> <td>0.96</td> <td>1.0</td> </tr> <tr> <td>2,200 ~ 18,000</td> <td>0.7</td> <td>0.85</td> <td>0.98</td> <td>1.0</td> </tr> </table>   | Cap.( $\mu F$ )   | Freq.(Hz)  |  |                              |   | 120                               | 1k                           | 10k                    | 100k up            | under ~ 33                        | 0.42 | 0.70            | 0.90                   | 1.0  | 39 ~ 270 | 0.50 | 0.73 | 0.92 | 1.0 | 330 ~ 680 | 0.55 | 0.77 | 0.94 | 1.0 | 820 ~ 1,800 | 0.6 | 0.80 | 0.96 | 1.0 | 2,200 ~ 18,000 | 0.7 | 0.85 | 0.98 | 1.0 |
| Cap.( $\mu F$ )                            | Freq.(Hz)   |   |  |  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
|  | 120   | 1k  | 10k  | 100k up  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| under ~ 33                                 | 0.42  | 0.70  | 0.90   | 1.0  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| 39 ~ 270                                   | 0.50  | 0.73  | 0.92   | 1.0  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| 330 ~ 680                                  | 0.55  | 0.77  | 0.94   | 1.0  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| 820 ~ 1,800                                | 0.6   | 0.80  | 0.96   | 1.0  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |
| 2,200 ~ 18,000                             | 0.7   | 0.85  | 0.98   | 1.0  |                              |   |                                   |                              |                        |                    |                                   |      |                 |                        |      |          |      |      |      |     |           |      |      |      |     |             |     |      |      |     |                |     |      |      |     |

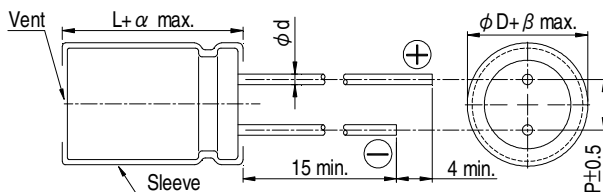
### Diagram of Dimensions



Lead Spacing and Diameter Unit: mm

| $\phi D$ | 5                             | 6.3 | 8   | 10  | 12.5 | 16  | 18  |
|----------|-------------------------------|-----|-----|-----|------|-----|-----|
| P        | 2.0                           | 2.5 | 3.5 | 5.0 | 5.0  | 7.5 | 7.5 |
| $\phi d$ | 0.5                           |     | 0.6 |     |      | 0.8 |     |
| $\alpha$ | $L < 20: 1.5, L \geq 20: 2.0$ |     |     |     |      |     |     |
| $\beta$  | 0.5                           |     |     |     |      |     |     |

The case size of 12.5x16, 16x16, 16x20, 18x16, 18x20 and 18x25 are suitable for below diagram:





Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 100k Hz, 105°C

Dimension and Permissible Ripple Current

| Rated Volt.<br>$V_{DC}$<br>Contents<br>Cap. ( $\mu F$ ) | 6.3V (0J)                 |  |                         |   | 10V (1A)                  |  |                         |   | 16V (1C)                  |  |                         |   | 25V (1E)                  |  |                         |   |
|---|---------------------------|--|-------------------------|---|---------------------------|--|-------------------------|---|---------------------------|--|-------------------------|---|---------------------------|--|-------------------------|---|
|   | $\phi D \times L$         | Impedance<br>( $\Omega$ , max./100kHz) |                         | Ripple<br>Current<br>(mA/rms, 105°C)<br>100k Hz | $\phi D \times L$         | Impedance<br>( $\Omega$ , max./100kHz) |                         | Ripple<br>Current<br>(mA/rms, 105°C)<br>100k Hz | $\phi D \times L$         | Impedance<br>( $\Omega$ , max./100kHz) |                         | Ripple<br>Current<br>(mA/rms, 105°C)<br>100k Hz | $\phi D \times L$         | Impedance<br>( $\Omega$ , max./100kHz) |                         | Ripple<br>Current<br>(mA/rms, 105°C)<br>100k Hz |
|   |                           | 20°C                                   | -10°C                   |   |                           | 20°C                                   | -10°C                   |   |                           | 20°C                                   | -10°C                   |   |                           | 20°C                                   | -10°C                   |   |
| 47  |                           |  |                         |   |                           |  |                         |   |                           |  |                         |   | 5x11                      | 0.58                                   | 1.16                    | 210   |
| 56  |                           |  |                         |   |                           |  |                         |   | 5x11                      | 0.58                                   | 1.16                    | 210   |                           |  |                         |   |
| 100   |                           |  |                         |   | 5x11                      | 0.58                                   | 1.16                    | 210   |                           |  |                         |   | 6.3x11                    | 0.22                                   | 0.44                    | 340   |
| 120   |                           |  |                         |   |                           |  |                         |   | 6.3x11                    | 0.22                                   | 0.44                    | 340   |                           |  |                         |   |
| 150   | 5x11                      | 0.58                                   | 1.16                    | 210   |                           |  |                         |   |                           |  |                         |   |                           |  |                         |   |
| 220   |                           |  |                         |   | 6.3x11                    | 0.22                                   | 0.44                    | 340   | 8x11.5                    | 0.11                                   | 0.22                    | 640   | 8x11.5                    | 0.11                                   | 0.22                    | 640   |
| 330   | 6.3x11                    | 0.22                                   | 0.44                    | 340   |                           |  |                         |   | 8x11.5                    | 0.11                                   | 0.22                    | 640   | 8x15<br>10x12.5           | 0.083<br>0.080                         | 0.166<br>0.160          | 840<br>865                                      |
| 470   |                           |  |                         |   | 8x11.5                    | 0.11                                   | 0.22                    | 640   | 8x15<br>10x12.5           | 0.083<br>0.080                         | 0.166<br>0.160          | 840<br>865                                      | 8x20<br>10x16             | 0.064<br>0.060                         | 0.128<br>0.120          | 1,050<br>1,210                                  |
| 680   | 8x11.5                    | 0.11                                   | 0.22                    | 640   | 8x15<br>10x12.5           | 0.083<br>0.080                         | 0.166<br>0.160          | 840<br>865                                      | 8x20<br>10x16             | 0.064<br>0.060                         | 0.128<br>0.120          | 1,050<br>1,210                                  | 10x20<br>12.5x16          | 0.046<br>0.049                         | 0.092<br>0.098          | 1,400<br>1,450                                  |
| 820   | 10x12.5                   | 0.080                                  | 0.16                    | 865   |                           |  |                         |   |                           |  |                         |   | 10x25                     | 0.042                                  | 0.084                   | 1,650   |
| 1,000   | 8x15                      | 0.087                                  | 0.174                   | 840   | 8x20<br>10x16             | 0.064<br>0.060                         | 0.128<br>0.120          | 1,050<br>1,210                                  | 10x20<br>12.5x16          | 0.046<br>0.049                         | 0.092<br>0.098          | 1,400<br>1,450                                  | 10x30<br>12.5x20<br>16x16 | 0.031<br>0.035<br>0.042                | 0.062<br>0.070<br>0.084 | 1,910<br>1,900<br>1,940                         |
| 1,200   | 8x20<br>10x16             | 0.069<br>0.060                         | 0.128<br>0.120          | 1,050<br>1,210                                  | 10x20                     | 0.046                                  | 0.092                   | 1,400   | 10x25                     | 0.042                                  | 0.084                   | 1,650   | 18x16                     | 0.043                                  | 0.086                   | 2,210   |
| 1,500   | 10x20                     | 0.046                                  | 0.092                   | 1,400   | 10x25<br>12.5x16          | 0.042<br>0.049                         | 0.084<br>0.090          | 1,650<br>1,450                                  | 10x30<br>12.5x20<br>16x16 | 0.031<br>0.035<br>0.042                | 0.062<br>0.070<br>0.084 | 1,910<br>1,900<br>1,940                         | 12.5x25                   | 0.027                                  | 0.054                   | 2,230   |
| 1,800   | 12.5x16                   | 0.045                                  | 0.090                   | 1,450   |                           |  |                         |   |                           |  |                         |   | 12.5x30<br>16x20          | 0.024<br>0.027                         | 0.048<br>0.054          | 2,650<br>2,530                                  |
| 2,200   | 10x25                     | 0.042                                  | 0.084                   | 1,650   | 10x30<br>12.5x20<br>16x16 | 0.031<br>0.035<br>0.042                | 0.062<br>0.070<br>0.084 | 1,910<br>1,900<br>1,940                         | 12.5x25<br>18x16          | 0.027<br>0.043                         | 0.054<br>0.086          | 2,230<br>2,210                                  | 12.5x35<br>18x20          | 0.020<br>0.026                         | 0.040<br>0.052          | 2,880<br>2,860                                  |
| 2,700   | 10x30<br>16x16            | 0.031<br>0.042                         | 0.062<br>0.084          | 1,910<br>1,940                                  | 18x16                     | 0.043                                  | 0.086                   | 2,210   | 12.5x30<br>16x20          | 0.024<br>0.027                         | 0.048<br>0.054          | 2,650<br>2,530                                  | 12.5x40<br>16x25          | 0.017<br>0.021                         | 0.034<br>0.042          | 3,350<br>2,930                                  |
| 3,300   | 12.5x20                   | 0.035                                  | 0.070                   | 1,900   | 12.5x25                   | 0.027                                  | 0.054                   | 2,230   | 12.5x35                   | 0.020                                  | 0.040                   | 2,880   | 16x31.5<br>18x25          | 0.017<br>0.019                         | 0.034<br>0.038          | 3,450<br>3,140                                  |
| 3,900   | 12.5x25<br>18x16          | 0.027<br>0.043                         | 0.054<br>0.086          | 2,230<br>2,210                                  | 12.5x30<br>16x20          | 0.024<br>0.027                         | 0.048<br>0.054          | 2,650<br>2,530                                  | 12.5x40<br>16x25<br>18x20 | 0.017<br>0.021<br>0.026                | 0.034<br>0.042<br>0.052 | 3,350<br>2,930<br>2,860                         | 16x35.5<br>18x31.5        | 0.015<br>0.015                         | 0.030<br>0.030          | 3,610<br>4,170                                  |
| 4,700   | 12.5x30                   | 0.024                                  | 0.048                   | 2,650   | 12.5x35                   | 0.020                                  | 0.040                   | 2,880   | 16x31.5<br>18x25          | 0.017<br>0.019                         | 0.034<br>0.038          | 3,450<br>3,140                                  | 16x40<br>18x35.5          | 0.013<br>0.014                         | 0.026<br>0.028          | 4,080<br>4,220                                  |
| 5,600   | 12.5x35<br>16x20          | 0.020<br>0.027                         | 0.040<br>0.054          | 2,880<br>2,530                                  | 12.5x40<br>16x25<br>18x20 | 0.017<br>0.021<br>0.026                | 0.034<br>0.042<br>0.052 | 3,350<br>2,930<br>2,860                         | 16x35.5<br>18x31.5        | 0.015<br>0.015                         | 0.030<br>0.03           | 3,610<br>4,170                                  | 18x40                     | 0.012                                  | 0.024                   | 4,280   |
| 6,800   | 12.5x40<br>16x25<br>18x20 | 0.017<br>0.021<br>0.026                | 0.034<br>0.042<br>0.052 | 3,350<br>2,930<br>2,860                         | 16x31.5<br>18x25          | 0.017<br>0.019                         | 0.034<br>0.038          | 3,450<br>3,140                                  | 16x40                     | 0.013                                  | 0.026                   | 4,080   |                           |  |                         |   |
| 8,200   | 16x31.5                   | 0.017                                  | 0.034                   | 3,450   | 16x35.5<br>18x31.5        | 0.015<br>0.015                         | 0.030<br>0.030          | 3,610<br>4,170                                  | 18x35.5                   | 0.014                                  | 0.02                    | 4,220   |                           |  |                         |   |
| 10,000  | 16x35.5<br>18x25          | 0.015<br>0.019                         | 0.030<br>0.038          | 3,610<br>3,140                                  | 16x40<br>18x35.5          | 0.013<br>0.014                         | 0.026<br>0.028          | 4,080<br>4,220                                  | 18x40                     | 0.012                                  | 0.024                   | 4,280   |                           |  |                         |   |
| 12,000  | 16x40<br>18x31.5          | 0.013<br>0.015                         | 0.026<br>0.030          | 4,080<br>4,170                                  | 18x40                     | 0.012                                  | 0.024                   | 4,280   |                           |  |                         |   |                           |  |                         |   |
| 15,000  | 18x35.5                   | 0.014                                  | 0.028                   | 4,220   |                           |  |                         |   |                           |  |                         |   |                           |  |                         |   |
| 18,000  | 18x40                     | 0.012                                  | 0.024                   | 4,280   |                           |  |                         |   |                           |  |                         |   |                           |  |                         |   |



Dimension:  $\phi D \times L$ (mm)  
Ripple Current: mA/rms at 100k Hz, 105°C

### Dimension and Permissible Ripple Current

| Rated Volt.<br>$V_{DC}$<br>Contents<br>Cap. ( $\mu F$ ) | 35V (1V)                  |  |                         |                                      | 50V (1H)                  |  |                         |                                      | 63V (1J)                  |  |                         |                                      |
|---|---------------------------|--|-------------------------|--------------------------------------|---------------------------|--|-------------------------|--------------------------------------|---------------------------|--|-------------------------|--------------------------------------|
|   | $\phi D \times L$         | Impedance<br>( $\Omega$ , max./100kHz) |                         | Ripple<br>Current<br>(mA/rms, 105°C) | $\phi D \times L$         | Impedance<br>( $\Omega$ , max./100kHz) |                         | Ripple<br>Current<br>(mA/rms, 105°C) | $\phi D \times L$         | Impedance<br>( $\Omega$ , max./100kHz) |                         | Ripple<br>Current<br>(mA/rms, 105°C) |
|   |                           | 20°C                                   | -10°C                   | 100k Hz                              |                           | 20°C                                   | -10°C                   | 100k Hz                              |                           | 20°C                                   | -10°C                   | 100k Hz                              |
| 3.3   |                           |  |                         |                                      | 5x11                      | 2.9                                    | 5.8                     | 53                                   |                           |  |                         |                                      |
| 4.7   |                           |  |                         |                                      | 5x11                      | 2.5                                    | 5.0                     | 95                                   |                           |  |                         |                                      |
| 10  |                           |  |                         |                                      | 5x11                      | 2.0                                    | 4.0                     | 130                                  |                           |  |                         |                                      |
| 15  |                           |  |                         |                                      |                           |  |                         |                                      | 5x11                      | 1.2                                    | 2.4                     | 165                                  |
| 22  |                           |  |                         |                                      | 5x11                      | 0.91                                   | 1.82                    | 180                                  |                           |  |                         |                                      |
| 33  | 5x11                      | 0.58                                   | 1.16                    | 210                                  |                           |  |                         |                                      | 6.3x11                    | 0.49                                   | 0.98                    | 265                                  |
| 56  | 6.3x11                    | 0.22                                   | 0.44                    | 340                                  | 6.3x11                    | 0.39                                   | 0.78                    | 295                                  | 8x11.5                    | 0.31                                   | 0.62                    | 500                                  |
| 82  |                           |  |                         |                                      |                           |  |                         |                                      | 8x15<br>10x12.5           | 0.22<br>0.15                           | 0.44<br>0.30            | 665<br>690                           |
| 100   |                           |  |                         |                                      | 8x11.5                    | 0.22                                   | 0.44                    | 555                                  |                           |  |                         |                                      |
| 120   |                           |  |                         |                                      | 8x15                      | 0.190                                  | 0.38                    | 730                                  | 8x20<br>10x16             | 0.17<br>0.11                           | 0.34<br>0.22            | 820<br>950                           |
| 150   | 8x11.5                    | 0.11                                   | 0.22                    | 640                                  | 10x12.5                   | 0.160                                  | 0.32                    | 760                                  |                           |  |                         |                                      |
| 180   |                           |  |                         |                                      | 8x20                      | 0.17                                   | 0.34                    | 880                                  | 10x20<br>12.5x16          | 0.078<br>0.101                         | 0.156<br>0.202          | 1,150<br>1,150                       |
| 220   | 8x15<br>10x12.5           | 0.083<br>0.080                         | 0.166<br>0.160          | 840<br>865                           | 10x16                     | 0.110                                  | 0.22                    | 1,050                                | 10x25                     | 0.064                                  | 0.128                   | 1,350                                |
| 270   | 8x20                      | 0.064                                  | 0.128                   | 1,050                                | 10x20<br>12.5x16          | 0.078<br>0.079                         | 0.156<br>0.158          | 1,220<br>1,260                       | 12.5x20                   | 0.057                                  | 0.114                   | 1,500                                |
| 330   | 10x16                     | 0.060                                  | 0.120                   | 1,210                                | 10x25                     | 0.072                                  | 0.144                   | 1,440                                |                           |  |                         |                                      |
| 390   |                           |  |                         |                                      |                           |  |                         |                                      | 12.5x25                   | 0.043                                  | 0.086                   | 1,900                                |
| 470   | 10x20<br>12.5x16          | 0.046<br>0.049                         | 0.092<br>0.098          | 1,400<br>1,450                       | 10x30<br>12.5x20<br>16x16 | 0.056<br>0.059<br>0.072                | 0.112<br>0.118<br>0.114 | 1,690<br>1,660<br>1,690              | 12.5x30<br>16x20          | 0.039<br>0.045                         | 0.078<br>0.090          | 2,300<br>2,000                       |
| 560   | 10x25                     | 0.042                                  | 0.084                   | 1,650                                | 12.5x25<br>18x16          | 0.044<br>0.070                         | 0.088<br>0.140          | 1,950<br>1,930                       | 12.5x35                   | 0.034                                  | 0.068                   | 2,500                                |
| 680   | 10x30<br>12.5x20<br>16x16 | 0.031<br>0.035<br>0.042                | 0.062<br>0.070<br>0.084 | 1,910<br>1,900<br>1,940              | 12.5x30                   | 0.039                                  | 0.078                   | 2,310                                | 12.5x40<br>16x25<br>18x20 | 0.029<br>0.035<br>0.042                | 0.058<br>0.070<br>0.084 | 2,800<br>2,600<br>2,500              |
| 820   |                           |  |                         |                                      | 12.5x35<br>16x20          | 0.033<br>0.044                         | 0.066<br>0.088          | 2,510<br>2,210                       | 16x31.5<br>18x25          | 0.029<br>0.034                         | 0.058<br>0.068          | 2,850<br>2,800                       |
| 1,000   | 12.5x25<br>18x16          | 0.027<br>0.043                         | 0.054<br>0.086          | 2,230<br>2,210                       | 12.5x40<br>16x25<br>18x20 | 0.027<br>0.033<br>0.047                | 0.054<br>0.066<br>0.094 | 2,920<br>2,555<br>2,490              | 16x35.5                   | 0.027                                  | 0.054                   | 2,900                                |
| 1,200   | 12.5x30<br>16x20          | 0.024<br>0.027                         | 0.048<br>0.054          | 2,650<br>2,530                       | 16x31.5<br>18x25          | 0.027<br>0.028                         | 0.054<br>0.056          | 3,010<br>2,740                       | 16x40<br>18x31.5          | 0.025<br>0.028                         | 0.050<br>0.056          | 3,400<br>3,300                       |
| 1,500   | 12.5x35                   | 0.020                                  | 0.040                   | 2,880                                | 16x35.5                   | 0.024                                  | 0.048                   | 3,150                                | 18x35.5                   | 0.025                                  | 0.050                   | 3,400                                |
| 1,800   | 12.5x40<br>16x25<br>18x20 | 0.017<br>0.021<br>0.026                | 0.034<br>0.042<br>0.052 | 3,350<br>2,930<br>2,860              | 16x40<br>18x31.5          | 0.021<br>0.024                         | 0.042<br>0.048          | 3,710<br>3,635                       | 18x40                     | 0.024                                  | 0.048                   | 3,500                                |
| 2,200   | 16x31.5<br>18x25          | 0.017<br>0.019                         | 0.034<br>0.038          | 3,450<br>3,140                       | 18x35.5                   | 0.022                                  | 0.044                   | 3,680                                |                           |  |                         |                                      |
| 2,700   | 16x35.5<br>18x31.5        | 0.015<br>0.015                         | 0.030<br>0.030          | 3,610<br>4,170                       | 18x40                     | 0.018                                  | 0.036                   | 3,800                                |                           |  |                         |                                      |
| 3,300   | 16x40<br>18x35.5          | 0.013<br>0.014                         | 0.026<br>0.028          | 4,080<br>4,220                       |                           |  |                         |                                      |                           |  |                         |                                      |
| 3,900   | 18x40                     | 0.012                                  | 0.024                   | 4,280                                |                           |  |                         |                                      |                           |  |                         |                                      |

### Part Numbering System

RZW Series    470 $\mu F$      $\pm 20\%$     16V    Bulk Package    Gas Type    8  $\phi$  x15L    Pb-free and PET sleeve

**RZW**    **471**    **M**    **1C**    **BK**    -    **0815**

Series Name    Capacitance    Capacitance Tolerance    Rated Voltage    Lead Configuration & Package    Rubber Type    Case Size    Lead Wire and Sleeve type

Note: For more details, please refer to "Part Numbering System (Radial Type)" on page 13.

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

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «JONHON», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «FORSTAR».



## JONHON

«JONHON» (основан в 1970 г.)

Разъемы специального, военного и аэрокосмического назначения:

(Применяются в военной, авиационной, аэрокосмической, морской, железнодорожной, горно- и нефтедобывающей отраслях промышленности)

«FORSTAR» (основан в 1998 г.)

ВЧ соединители, коаксиальные кабели, кабельные сборки и микроволновые компоненты:

(Применяются в телекоммуникациях гражданского и специального назначения, в средствах связи, РЛС, а так же военной, авиационной и аэрокосмической отраслях промышленности).



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