



# Aluminum Electrolytic Capacitors

**RGA**

## Features

- 105°C, for general purpose, standard series
- RoHS Compliance
- If there is any requirement on ESR, it's suggested to use low ESR series instead of RGA. Please consult our contact window for any inquiry.



Sleeve & Marking Color: Green & Black  
Black & White

## SPECIFICATIONS

| Items                                      | Performance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|---------------------------------|--------------------|------------------------------|--------------------|-----------------------------------|-----------------|------------------------|-----------------|-------------------------------------------|---------------------------------|---------------------------------|------|------|-----------------|-------------|-----------------|----------|----------|------|------|----------------|------|------|------|------|------|------|------|------|----|----|-----------|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|----------|----------|---|---|---|---|---|---|---|---|---|----|----|----|----|-----------|----------|----|----|---|---|---|---|---|---|---|----|----|----|----|
| Category Temperature Range                 | -40°C ~ +105°C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Capacitance Tolerance                      | ±20% (at 120Hz, 20°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Leakage Current (at 20°C)                  | <table border="1"> <thead> <tr> <th>Rated voltage</th> <th>≤ 100V</th> <th colspan="2">&gt; 100V</th> </tr> <tr> <th>Time</th> <th>after 2 minutes</th> <th colspan="2">after 5 minutes</th> </tr> <tr> <th>Leakage Current</th> <th>I = 0.01CV or 3 (μA) whichever is greater</th> <th>CV ≤ 1,000<br/>I = 0.03CV+15(μA)</th> <th>CV &gt; 1,000<br/>I = 0.02CV+25(μA)</th> </tr> </thead> </table> <p>Where, C = rated capacitance in μF V = rated DC working voltage in V</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Rated voltage                   | ≤ 100V                          | > 100V             |                              | Time               | after 2 minutes                   | after 5 minutes |                        | Leakage Current | I = 0.01CV or 3 (μA) whichever is greater | CV ≤ 1,000<br>I = 0.03CV+15(μA) | CV > 1,000<br>I = 0.02CV+25(μA) |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Rated voltage                              | ≤ 100V                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | > 100V                          |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Time                                       | after 2 minutes                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | after 5 minutes                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Leakage Current                            | I = 0.01CV or 3 (μA) whichever is greater                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | CV ≤ 1,000<br>I = 0.03CV+15(μA) | CV > 1,000<br>I = 0.02CV+25(μA) |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Dissipation Factor (Tan δ at 120 Hz, 20°C) | <table border="1"> <thead> <tr> <th>Rated Voltage</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>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td>Tan δ (max)</td> <td>0.23</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> <td>0.12</td> <td>0.14</td> <td>0.17</td> <td>0.20</td> <td>0.25</td> <td>0.25</td> </tr> </tbody> </table> <p>When the capacitance exceeds 1,000 μF, 0.02 shall be added every 1,000 μF increase.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Rated Voltage                   | 6.3                             | 10                 | 16                           | 25                 | 35                                | 50              | 63                     | 100             | 160                                       | 200                             | 250                             | 350  | 400  | 450             | Tan δ (max) | 0.23            | 0.20     | 0.16     | 0.14 | 0.12 | 0.10           | 0.09 | 0.08 | 0.12 | 0.14 | 0.17 | 0.20 | 0.25 | 0.25 |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Rated Voltage                              | 6.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 10                              | 16                              | 25                 | 35                           | 50                 | 63                                | 100             | 160                    | 200             | 250                                       | 350                             | 400                             | 450  |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Tan δ (max)                                | 0.23                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 0.20                            | 0.16                            | 0.14               | 0.12                         | 0.10               | 0.09                              | 0.08            | 0.12                   | 0.14            | 0.17                                      | 0.20                            | 0.25                            | 0.25 |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Low Temperature Characteristics (at 120Hz) | <p>Impedance ratio shall not exceed the values given in the table below.</p> <table border="1"> <thead> <tr> <th colspan="2">Rated Voltage</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>350</th> <th>400</th> <th>450</th> </tr> </thead> <tbody> <tr> <td rowspan="4">Impedance Ratio</td> <td>Z(-25°C)</td> <td>φ D &lt; 16</td> <td>4</td> <td>3</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>6</td> <td>8</td> <td>12</td> <td>14</td> <td>16</td> </tr> <tr> <td>/Z(+20°C)</td> <td>φ D ≥ 16</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>4</td> <td>8</td> <td>10</td> <td>16</td> <td>18</td> <td>20</td> </tr> <tr> <td>Z(-40°C)</td> <td>φ D &lt; 16</td> <td>8</td> <td>6</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>4</td> <td>8</td> <td>10</td> <td>16</td> <td>18</td> <td>20</td> </tr> <tr> <td>/Z(+20°C)</td> <td>φ D ≥ 16</td> <td>12</td> <td>10</td> <td>8</td> <td>8</td> <td>8</td> <td>8</td> <td>6</td> <td>6</td> <td>8</td> <td>10</td> <td>16</td> <td>18</td> <td>20</td> </tr> </tbody> </table> | Rated Voltage                   |                                 | 6.3                | 10                           | 16                 | 25                                | 35              | 50                     | 63              | 100                                       | 160                             | 200                             | 250  | 350  | 400             | 450         | Impedance Ratio | Z(-25°C) | φ D < 16 | 4    | 3    | 3              | 2    | 2    | 2    | 2    | 3    | 6    | 8    | 12   | 14 | 16 | /Z(+20°C) | φ D ≥ 16 | 6 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 8 | 10 | 16 | 18 | 20 | Z(-40°C) | φ D < 16 | 8 | 6 | 6 | 4 | 4 | 3 | 3 | 4 | 8 | 10 | 16 | 18 | 20 | /Z(+20°C) | φ D ≥ 16 | 12 | 10 | 8 | 8 | 8 | 8 | 6 | 6 | 8 | 10 | 16 | 18 | 20 |
| Rated Voltage                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 6.3                             | 10                              | 16                 | 25                           | 35                 | 50                                | 63              | 100                    | 160             | 200                                       | 250                             | 350                             | 400  | 450  |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Impedance Ratio                            | Z(-25°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | φ D < 16                        | 4                               | 3                  | 3                            | 2                  | 2                                 | 2               | 2                      | 3               | 6                                         | 8                               | 12                              | 14   | 16   |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
|                                            | /Z(+20°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | φ D ≥ 16                        | 6                               | 4                  | 4                            | 3                  | 3                                 | 3               | 3                      | 4               | 8                                         | 10                              | 16                              | 18   | 20   |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
|                                            | Z(-40°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | φ D < 16                        | 8                               | 6                  | 6                            | 4                  | 4                                 | 3               | 3                      | 4               | 8                                         | 10                              | 16                              | 18   | 20   |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
|                                            | /Z(+20°C)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | φ D ≥ 16                        | 12                              | 10                 | 8                            | 8                  | 8                                 | 8               | 6                      | 6               | 8                                         | 10                              | 16                              | 18   | 20   |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Endurance                                  | <table border="1"> <thead> <tr> <th>Test Time</th> <th>2,000 Hrs</th> </tr> </thead> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </tbody> </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 2,000 hours at 105°C.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Test Time                       | 2,000 Hrs                       | Capacitance Change | Within ±20% of initial value | Dissipation Factor | Less than 200% of specified value | Leakage Current | Within specified value |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Test Time                                  | 2,000 Hrs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Capacitance Change                         | Within ±20% of initial value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Dissipation Factor                         | Less than 200% of specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Leakage Current                            | Within specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Shelf Life Test                            | <table border="1"> <thead> <tr> <th>Test Time</th> <th>1,000 Hrs</th> </tr> </thead> <tbody> <tr> <td>Capacitance Change</td> <td>Within ±20% of initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Less than 200% of specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Within specified value</td> </tr> </tbody> </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. The rated voltage shall be applied to the capacitors before the measurements for 160 ~ 450V (Refer to JIS C 5101-4 4.1).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Test Time                       | 1,000 Hrs                       | Capacitance Change | Within ±20% of initial value | Dissipation Factor | Less than 200% of specified value | Leakage Current | Within specified value |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Test Time                                  | 1,000 Hrs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Capacitance Change                         | Within ±20% of initial value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Dissipation Factor                         | Less than 200% of specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Leakage Current                            | Within specified value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                 |                                 |                    |                              |                    |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Ripple Current & Frequency Multipliers     | <table border="1"> <thead> <tr> <th rowspan="2">Cap.(μF)</th> <th>Freq.(Hz)</th> <th>60(50)</th> <th>120</th> <th>500</th> <th>1k</th> <th>10k up</th> </tr> </thead> <tbody> <tr> <td>Under 100</td> <td></td> <td>0.70</td> <td>1.00</td> <td>1.30</td> <td>1.40</td> <td>1.50</td> </tr> <tr> <td>100 &lt; C ≤ 1,000</td> <td></td> <td>0.75</td> <td>1.00</td> <td>1.20</td> <td>1.30</td> <td>1.35</td> </tr> <tr> <td>1,000 up above</td> <td></td> <td>0.80</td> <td>1.00</td> <td>1.10</td> <td>1.12</td> <td>1.15</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Cap.(μF)                        | Freq.(Hz)                       | 60(50)             | 120                          | 500                | 1k                                | 10k up          | Under 100              |                 | 0.70                                      | 1.00                            | 1.30                            | 1.40 | 1.50 | 100 < C ≤ 1,000 |             | 0.75            | 1.00     | 1.20     | 1.30 | 1.35 | 1,000 up above |      | 0.80 | 1.00 | 1.10 | 1.12 | 1.15 |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| Cap.(μF)                                   | Freq.(Hz)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 | 60(50)                          | 120                | 500                          | 1k                 | 10k up                            |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
|                                            | Under 100                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                 | 0.70                            | 1.00               | 1.30                         | 1.40               | 1.50                              |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| 100 < C ≤ 1,000                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.75                            | 1.00                            | 1.20               | 1.30                         | 1.35               |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |
| 1,000 up above                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 0.80                            | 1.00                            | 1.10               | 1.12                         | 1.15               |                                   |                 |                        |                 |                                           |                                 |                                 |      |      |                 |             |                 |          |          |      |      |                |      |      |      |      |      |      |      |      |    |    |           |          |   |   |   |   |   |   |   |   |   |    |    |    |    |          |          |   |   |   |   |   |   |   |   |   |    |    |    |    |           |          |    |    |   |   |   |   |   |   |   |    |    |    |    |

## DIAGRAM OF DIMENSIONS



## LEAD SPACING AND DIAMETER

Unit: mm

| $\phi D$ | 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  | 10 | 12.5 |
| $\phi d$ | 0.5 |     | 0.6 |     |      | 0.8 |     | 1.0 |    |      |
| $\alpha$ | 1.0 |     |     | 1.5 |      |     | 2.0 |     |    |      |
| $\beta$  | 0.5 |     |     |     |      |     |     |     |    |      |

Dimension:  $\phi D \times L(\text{mm})$

Ripple Current: mA/rms at 120 Hz, 105°C

## DIMENSION & PERMISSIBLE RIPPLE CURRENT

| $\mu\text{F}$ | V. DC Contents | 6.3V (0J)         |                |                     |                | 10V (1A)           |                |                     |                | 16V (1C)           |                |                     |                | 25V (1E)           |                |                     |       |
|---------------|----------------|-------------------|----------------|---------------------|----------------|--------------------|----------------|---------------------|----------------|--------------------|----------------|---------------------|----------------|--------------------|----------------|---------------------|-------|
|               |                | $\phi D \times L$ | mA             | * $\phi D \times L$ | mA             | $\phi D \times L$  | mA             | * $\phi D \times L$ | mA             | $\phi D \times L$  | mA             | * $\phi D \times L$ | mA             | $\phi D \times L$  | mA             | * $\phi D \times L$ | mA    |
| 4.7           | 4R7            |                   |                |                     |                |                    |                |                     |                |                    |                |                     |                | 5x11               | 26             |                     |       |
| 10            | 100            |                   |                |                     |                |                    |                |                     |                | 5x11               | 35             |                     |                | 5x11               | 43             |                     |       |
| 22            | 220            |                   |                |                     |                | 5x11               | 49             |                     |                | 5x11               | 58             |                     |                | 5x11               | 62             |                     |       |
| 33            | 330            | 5x11              | 54             |                     |                | 5x11               | 60             |                     |                | 5x11               | 71             |                     |                | 5x11               | 76             |                     |       |
| 47            | 470            | 5x11              | 65             |                     |                | 5x11               | 76             |                     |                | 5x11               | 85             |                     |                | 5x11               | 97             |                     |       |
| 100           | 101            | 5x11              | 95             |                     |                | 5x11               | 105            |                     |                | 6.3x11             | 133            | 5x11                | 110            | 6.3x11             | 142            |                     |       |
| 220           | 221            | 6.3x11            | 160            | 5x11                | 140            | 6.3x11             | 175            |                     |                | 8x11.5             | 215            | 6.3x11              | 190            | 8x11.5             | 236            |                     |       |
| 330           | 331            | 8x11.5            | 195            | 6.3x11              | 190            | 8x11.5             | 245            | 6.3x11              | 200            | 8x11.5             | 270            |                     |                | 10x12.5            | 335            | 8x11.5              | 310   |
| 470           | 471            | 8x11.5            | 270            | 6.3x11              | 230            | 8x11.5             | 290            |                     |                | 10x12.5            | 370            | 8x11.5              | 310            | 10x16              | 440            | 10x12.5             | 380   |
| 1,000         | 102            | 10x12.5           | 460            | 8x11.5              | 380            | 10x16              | 550            | 10x12.5             | 460            | 10x20              | 640            | 10x16               | 560            | 10x20<br>12.5x20   | 680<br>770     | 12.5x16             | 590   |
| 2,200         | 222            | 10x16<br>10x20    | 690<br>710     | 12.5x16             | 700            | 10x20<br>12.5x20   | 760<br>860     | 12.5x16             | 690            | 12.5x20<br>12.5x25 | 920<br>1,000   | 16x16               | 830            | 12.5x25<br>16x25   | 1,110<br>1,170 | 16x20               | 970   |
| 3,300         | 332            | 12.5x20           | 960            | 10x20               | 840            | 12.5x20            | 1,100          | 16x16               | 940            | 12.5x25<br>16x25   | 1,170<br>1,300 | 16x16<br>16x20      | 950<br>1,050   | 16x25<br>16x31.5   | 1,440<br>1,460 | 18x20               | 1,220 |
| 4,700         | 472            | 12.5x20<br>16x25  | 1,090<br>1,330 | 16x16               | 1,010          | 12.5x25<br>16x25   | 1,260<br>1,400 | 16x16<br>16x20      | 1,060<br>1,120 | 16x25<br>16x31.5   | 1,480<br>1,600 | 16x20<br>18x20      | 1,185<br>1,260 | 16x31.5<br>18x35.5 | 1,710<br>1,780 | 18x25               | 1,470 |
| 6,800         | 682            | 12.5x25<br>16x25  | 1,460<br>1,640 | 16x20               | 1,190          | 16x25<br>16x31.5   | 1,690<br>1,880 | 16x20<br>18x20      | 1,270<br>1,330 | 16x31.5<br>18x35.5 | 1,930<br>2,170 | 18x25               | 1,650          | 18x40              | 2,280          | 18x35.5             | 2,160 |
| 10,000        | 103            | 16x25<br>16x31.5  | 1,990<br>2,200 | 16x20<br>18x20      | 1,340<br>1,440 | 16x31.5<br>16x35.5 | 2,220<br>2,400 | 18x25               | 1,800          | 18x35.5            | 2,640          | 18x31.5             | 2,330          | 22x40              | 2,720          |                     |       |
| 15,000        | 153            | 18x35.5           | 2,780          | 16x35.5             | 2,500          | 18x35.5            | 2,780          | 16x35.5             | 2,500          | 18x40              | 2,950          |                     |                |                    |                |                     |       |
| 22,000        | 223            | 18x40             | 3,100          | 18x35.5             | 2,930          | 18x40              | 3,100          |                     |                | 22x40              | 3,460          |                     |                |                    |                |                     |       |

| $\mu\text{F}$ | V. DC Contents | 35V (1V)           |                |                     |            | 50V (1H)          |              |                     |            | 63V (1J)          |       |                     |     | 100V (2A)         |       |                     |     |
|---------------|----------------|--------------------|----------------|---------------------|------------|-------------------|--------------|---------------------|------------|-------------------|-------|---------------------|-----|-------------------|-------|---------------------|-----|
|               |                | $\phi D \times L$  | mA             | * $\phi D \times L$ | mA         | $\phi D \times L$ | mA           | * $\phi D \times L$ | mA         | $\phi D \times L$ | mA    | * $\phi D \times L$ | mA  | $\phi D \times L$ | mA    | * $\phi D \times L$ | mA  |
| 0.1           | 0R1            |                    |                |                     |            | 5x11              | 3.2          |                     |            | 5x11              | 3.5   |                     |     | 5x11              | 4     |                     |     |
| 0.22          | R22            |                    |                |                     |            | 5x11              | 4.9          |                     |            | 5x11              | 5.1   |                     |     | 5x11              | 6     |                     |     |
| 0.33          | R33            |                    |                |                     |            | 5x11              | 6            |                     |            | 5x11              | 7.5   |                     |     | 5x11              | 8     |                     |     |
| 0.47          | R47            |                    |                |                     |            | 5x11              | 7.1          |                     |            | 5x11              | 9     |                     |     | 5x11              | 9     |                     |     |
| 1             | 010            |                    |                |                     |            | 5x11              | 13           |                     |            | 5x11              | 15    |                     |     | 5x11              | 15    |                     |     |
| 2.2           | 2R2            |                    |                |                     |            | 5x11              | 20           |                     |            | 5x11              | 30    |                     |     | 5x11              | 30    |                     |     |
| 3.3           | 3R3            |                    |                |                     |            | 5x11              | 30           |                     |            | 5x11              | 31    |                     |     | 5x11              | 31    |                     |     |
| 4.7           | 4R7            | 5x11               | 30             |                     |            | 5x11              | 33           |                     |            | 5x11              | 36    |                     |     | 6.3x11            | 40    |                     |     |
| 10            | 100            | 5x11               | 46             |                     |            | 5x11              | 50           |                     |            | 5x11              | 54    |                     |     | 8x11.5            | 66    | 6.3x11              | 54  |
| 22            | 220            | 5x11               | 71             |                     |            | 5x11              | 78           |                     |            | 6.3x11            | 86    |                     |     | 8x11.5            | 99    | 6.3x11              | 93  |
| 33            | 330            | 6.3x11             | 90             | 5x11                | 75         | 6.3x11            | 96           | 5x11                | 90         | 8x11.5            | 114   | 6.3x11              | 100 | 10x12.5           | 148   | 8x11.5              | 130 |
| 47            | 470            | 6.3x11             | 110            | 5x11                | 90         | 6.3x11            | 120          |                     |            | 8x11.5            | 141   | 6.3x11              | 130 | 10x16             | 180   | 10x12.5             | 165 |
| 100           | 101            | 8x11.5             | 180            | 6.3x11              | 150        | 8x11.5            | 188          |                     |            | 10x12.5           | 235   |                     |     | 12.5x20           | 320   | 10x20               | 265 |
| 220           | 221            | 10x12.5            | 300            | 8x11.5              | 270        | 10x16             | 300          | 10x12.5             | 240        | 10x20             | 450   | 10x16               | 335 | 16x25             | 570   | 12.5x25             | 440 |
| 330           | 331            | 10x16              | 400            | 10x12.5             | 350        | 10x20             | 460          | 10x16               | 410        | 12.5x20           | 540   | 10x20               | 510 | 16x31.5           | 700   | 16x25               | 540 |
| 470           | 471            | 10x20              | 520            | 10x16               | 460        | 10x20<br>12.5x25  | 530<br>610   | 12.5x16<br>16x16    | 425<br>535 | 12.5x25           | 720   | 12.5x20             | 640 | 18x35.5           | 880   | 16x31.5             | 715 |
| 1,000         | 102            | 12.5x20<br>12.5x25 | 810<br>920     | 12.5x16<br>16x16    | 600<br>720 | 12.5x25<br>16x25  | 950<br>1,080 | 16x20               | 830        | 16x31.5           | 1,210 | 16x25               | 930 | 22x40             | 1,760 | 18x40               | 985 |
| 2,200         | 222            | 16x25<br>16x31.5   | 1,260<br>1,340 | 18x20               | 1,110      | 18x35.5           | 1,600        | 16x35.5             | 1,470      | 18x40             | 2,340 |                     |     |                   |       |                     |     |
| 3,300         | 332            | 16x31.5<br>16x35.5 | 1,420<br>1,610 | 18x25               | 1,570      | 22x40             | 2,290        | 18x35.5             | 1,770      | 22x40             | 2,510 |                     |     |                   |       |                     |     |
| 4,700         | 472            | 18x40              | 1,920          | 18x35.5             | 1,900      | 25x40             | 2,610        | 22x40               | 2,340      | 25x40             | 3,000 |                     |     |                   |       |                     |     |

Remark: The Case size 12.5x16, 16x16, 16x20, 18x20 and 18x25 are used flat type rubber bung. Case size in mark of "\*" is downsize.



# Aluminum Electrolytic Capacitors

RGA

Dimension:  $\phi D \times L$ (mm)

Ripple Current: mA/rms at 120 Hz, 105°C

## DIMENSION & PERMISSIBLE RIPPLE CURRENT

| $\mu F$ | V. DC<br>Contents | 160V (2C)          |            |                     |            | 200V (2D)          |            |                     |            | 250V (2E)          |            |                     |     | 350V (2V)         |     |                     |     |
|---------|-------------------|--------------------|------------|---------------------|------------|--------------------|------------|---------------------|------------|--------------------|------------|---------------------|-----|-------------------|-----|---------------------|-----|
|         |                   | $\phi D \times L$  | mA         | * $\phi D \times L$ | mA         | $\phi D \times L$  | mA         | * $\phi D \times L$ | mA         | $\phi D \times L$  | mA         | * $\phi D \times L$ | mA  | $\phi D \times L$ | mA  | * $\phi D \times L$ | mA  |
| 0.47    | R47               | 6.3x11             | 13         | 5x11                | 11         | 6.3x11             | 14         | 5x11                | 12         | 8x11.5             | 18         | 5x11                | 11  | 8x11.5            | 18  | 6.3x11              | 16  |
| 1       | 010               | 6.3x11             | 20         | 5x11                | 17         | 6.3x11             | 21         | 5x11                | 18         | 8x11.5             | 27         | 5x11                | 16  | 8x11.5            | 27  | 6.3x11              | 23  |
| 2.2     | 2R2               | 6.3x11             | 29         | 5x11                | 25         | 8x11.5             | 37         | 6.3x11              | 30         | 8x11.5             | 41         | 6.3x11              | 35  | 10x16             | 53  | 8x11.5              | 41  |
| 3.3     | 3R3               | 8x11.5             | 42         | 6.3x11              | 36         | 8x11.5             | 45         | 6.3x11              | 39         | 8x11.5             | 50         | 6.3x11              | 40  | 10x12.5           | 59  | 8x11.5              | 50  |
| 4.7     | 4R7               | 8x11.5             | 50         | 6.3x11              | 43         | 8x11.5             | 54         | 6.3x11              | 43         | 10x16              | 93         | 8x11.5              | 60  | 10x16             | 93  | 10x12.5             | 65  |
| 10      | 100               | 10x12.5            | 87         | 8x11.5              | 73         | 10x20              | 115        | 10x12.5             | 94         | 10x16              | 115        | 10x12.5             | 92  | 10x20             | 125 | 10x16               | 115 |
| 22      | 220               | 10x20              | 158        | 10x16               | 135        | 10x20              | 170        | 10x16               | 142        | 10x20<br>12.5x20   | 200<br>220 | 12.5x16             | 200 | 12.5x25           | 235 | 12.5x20             | 220 |
| 33      | 330               | 12.5x20            | 225        | 10x20               | 190        | 12.5x20<br>12.5x25 | 240<br>265 | 12.5x16<br>16x16    | 215<br>250 | 12.5x20<br>12.5x25 | 315<br>348 | 16x16               | 250 | 16x31.5           | 365 | 16x25               | 325 |
| 47      | 470               | 12.5x20<br>12.5x25 | 265<br>295 | 12.5x16<br>16x16    | 230<br>275 | 12.5x20<br>12.5x25 | 270<br>315 | 16x16<br>16x20      | 275<br>300 | 12.5x25<br>16x25   | 350<br>365 | 16x20               | 320 | 16x31.5           | 395 | 16x25               | 365 |
| 68      | 680               |                    |            | 16x20               | 330        | 18x20              | 350        | 16x20               | 330        |                    |            | 18x20               | 350 |                   |     |                     |     |
| 100     | 101               | 12.5x25<br>16x25   | 425<br>485 | 16x20<br>18x20      | 395<br>420 | 16x25<br>16x35.5   | 485<br>565 | 18x25               | 420        | 16x35.5            | 610        |                     |     | 18x40             | 530 | 16x31.5             | 450 |
| 150     | 151               |                    |            | 18x25               | 510        |                    |            |                     |            |                    |            |                     |     |                   |     |                     |     |
| 220     | 221               | 18x35.5            | 750        | 16x31.5             | 660        | 18x40              | 885        | 18x35.5             | 835        | 18x40              | 885        | 18x35.5             | 835 |                   |     |                     |     |
| 330     | 331               | 18x40              | 865        | 18x35.5             | 820        |                    |            |                     |            |                    |            |                     |     |                   |     |                     |     |

| $\mu F$ | V. DC<br>Contents | 400V (2G)         |            |                     |            | 450V (2W)         |     |                     |          |
|---------|-------------------|-------------------|------------|---------------------|------------|-------------------|-----|---------------------|----------|
|         |                   | $\phi D \times L$ | mA         | * $\phi D \times L$ | mA         | $\phi D \times L$ | mA  | * $\phi D \times L$ | mA       |
| 0.47    | R47               | 8x11.5            | 18         | 6.3x11              | 15         | 10x12.5           | 22  | 8x11.5              | 18       |
| 1       | 010               | 8x11.5            | 27         | 6.3x11              | 21         | 10x12.5           | 32  | 8x11.5              | 27       |
| 2.2     | 2R2               | 10x12.5           | 48         | 8x11.5              | 39         | 10x12.5           | 48  | 8x11.5              | 39       |
| 3.3     | 3R3               | 10x16             | 65         | 8x11.5              | 47         | 10x16             | 65  | 10x12.5             | 55       |
| 4.7     | 4R7               | 10x20             | 86         | 10x12.5<br>8x11.5   | 70<br>50   | 10x20             | 86  | 10x16<br>8x11.5     | 75<br>50 |
| 10      | 100               | 10x20<br>12.5x20  | 125<br>145 | 12.5x16<br>16x16    | 120<br>150 | 12.5x25           | 160 | 12.5x20             | 145      |
| 22      | 220               | 10x25<br>16x25    | 205<br>265 | 16x20               | 220        | 16x25             | 265 | 12.5x20             | 200      |
| 27      | 270               | 16x25             | 310        |                     |            | 16x31.5           | 340 | 12.5x25             | 235      |
| 33      | 330               | 16x25<br>16x31.5  | 325<br>360 | 18x20               | 270        | 16x31.5           | 360 | 16x25               | 325      |
| 39      | 390               | 16x31.5           | 375        | 16x25               | 340        | 16x35.5           | 400 |                     |          |
| 47      | 470               | 16x25<br>16x35.5  | 370<br>420 | 18x25               | 350        | 18x31.5           | 430 |                     |          |
| 56      | 560               | 18x25             | 460        | 16x25               | 400        | 18x40             | 480 |                     |          |
| 68      | 680               | 16x25             | 440        |                     |            |                   |     |                     |          |
| 82      | 820               | 18x31.5           | 500        | 16x31.5             | 475        | 22x40             | 600 | 18x31.5             | 500      |
| 100     | 101               | 20x40             | 600        | 18x35.5             | 540        | 20x45             | 690 | 18x35.5             | 540      |
| 120     | 121               | 20x40             | 720        |                     |            | 20x50             | 780 |                     |          |
| 150     | 151               | 22x40             | 850        |                     |            | 22x50             | 930 | 20x40               | 850      |
| 180     | 181               | 20x50             | 960        |                     |            |                   |     |                     |          |
| 220     | 221               | 22x50             | 1,130      | 20x45               | 950        |                   |     |                     |          |

Remark: The Case size 12.5x16, 16x16, 16x20, 18x20 and 18x25 are used flat type rubber bung.  
Case size in mark of "\*" is downsize.

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