



# 小形アルミニウム電解コンデンサ

MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

ZA

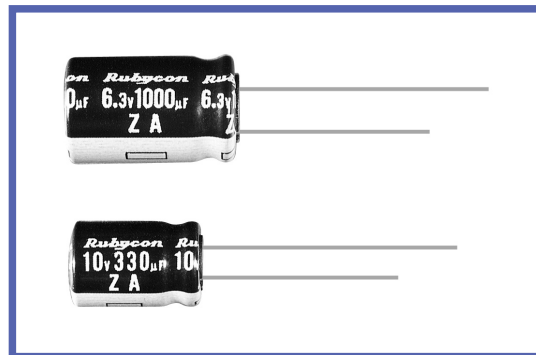
ZA シリーズ  
SERIES

旧シリーズ

105 超低インピーダンス品  
105 Ultra Low impedance.

### 特長 FEATURES

- 高周波インピーダンスを大幅に低減。  
Extremely reduced impedance at high frequency range.
- セットの小形化、高性能化に最適。  
Suitable for miniaturized and high performance equipments.



### 規格表 SPECIFICATIONS

| 項目 Items  | 特 性 Characteristics   |                               |   |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
|---|---|-------------------------------|---|---------------------|----------------------|------------------------------|--|----------------|-----------------------|-------------------------|---|-----------|------|------|--|--------|------|
| カテゴリ温度範囲<br>Category Temperature Range                                  | - 40 ~ + 105  |                               |   |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 定格電圧範囲<br>Rated Voltage Range   | 6.3 ~ 35V.DC  |                               |   |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 静電容量許容差<br>Capacitance Tolerance  | ± 20% ( 20 , 120Hz )  |                               |   |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 漏れ電流<br>Leakage Current(MAX)  | I = 0.01CV又は3µAのいずれか大なる値以下 ( 定格電圧印加2分後 )<br>I = 0.01CV or 3 µA whichever is greater. (After 2 minutes application of rated voltage)<br>I = 漏れ電流 ( µA )                      C = 定格静電容量 ( µF )                      V = 定格電圧 ( V )<br>Leakage Current                                      Rated Capacitance                                      Rated Voltage  |                               |   |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 損失角の正接 ( tan )<br>Dissipation Factor(MAX)                               | <table border="1"> <tr> <td>定格電圧(V)<br/>Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>( 20 , 120Hz )</td> </tr> <tr> <td>tan</td> <td>0.15</td> <td>0.13</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td></td> </tr> </table>  | 定格電圧(V)<br>Rated Voltage      | 6.3   | 10                  | 16                   | 25                           | 35   | ( 20 , 120Hz ) | tan                   | 0.15                    | 0.13  | 0.12      | 0.10 | 0.10 |  |        |      |
| 定格電圧(V)<br>Rated Voltage  | 6.3   | 10                            | 16  | 25                  | 35                   | ( 20 , 120Hz )               |  |                |                       |                         |   |           |      |      |  |        |      |
| tan   | 0.15  | 0.13                          | 0.12  | 0.10                | 0.10                 |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 耐 久 性<br>Endurance  | <p>105 , 右表の時間定格電圧 ( リプル重畳 ) 印加後、下記項目を満足すること。<br/>After life test with rated ripple current at conditions stated in the table below, the capacitors shall meet the following requirements.</p> <table border="1"> <tr> <td>静電容量変化率<br/>Capacitance Change</td> <td>初期値の ± 20% 以内<br/>Within ± 20% of the initial value.</td> <td>ケースサイズ<br/>Case Size</td> <td>時間(hrs)<br/>Life Time</td> </tr> <tr> <td>損失角の正接<br/>Dissipation Factor</td> <td>規格値の200%以下<br/>Not more than 200% of the specified value.</td> <td>L = 7</td> <td>1000</td> </tr> <tr> <td>漏れ電流<br/>Leakage Current</td> <td>規格値以下<br/>Not more than the specified value.</td> <td>6.3 × 11L</td> <td>2000</td> </tr> <tr> <td></td> <td></td> <td>8 , 10</td> <td>3000</td> </tr> </table> | 静電容量変化率<br>Capacitance Change | 初期値の ± 20% 以内<br>Within ± 20% of the initial value. | ケースサイズ<br>Case Size | 時間(hrs)<br>Life Time | 損失角の正接<br>Dissipation Factor | 規格値の200%以下<br>Not more than 200% of the specified value. | L = 7          | 1000                  | 漏れ電流<br>Leakage Current | 規格値以下<br>Not more than the specified value. | 6.3 × 11L | 2000 |      |  | 8 , 10 | 3000 |
| 静電容量変化率<br>Capacitance Change   | 初期値の ± 20% 以内<br>Within ± 20% of the initial value.   | ケースサイズ<br>Case Size           | 時間(hrs)<br>Life Time                                |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 損失角の正接<br>Dissipation Factor  | 規格値の200%以下<br>Not more than 200% of the specified value.  | L = 7                         | 1000  |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 漏れ電流<br>Leakage Current   | 規格値以下<br>Not more than the specified value.   | 6.3 × 11L                     | 2000  |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
|   |   | 8 , 10                        | 3000  |                     |                      |                              |  |                |                       |                         |   |           |      |      |  |        |      |
| 低温特性<br>Low Temperature Stability<br>(インピーダンス比)<br>Impedance Ratio(MAX) | <table border="1"> <tr> <td>定格電圧(V)<br/>Rated Voltage</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>( 120Hz )</td> </tr> <tr> <td>Z ( - 40 ) / Z ( 20 )</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td></td> </tr> </table>  | 定格電圧(V)<br>Rated Voltage      | 6.3   | 10                  | 16                   | 25                           | 35   | ( 120Hz )      | Z ( - 40 ) / Z ( 20 ) | 2                       | 2   | 2         | 2    | 2    |  |        |      |
| 定格電圧(V)<br>Rated Voltage  | 6.3   | 10                            | 16  | 25                  | 35                   | ( 120Hz )                    |  |                |                       |                         |   |           |      |      |  |        |      |
| Z ( - 40 ) / Z ( 20 )   | 2   | 2                             | 2   | 2                   | 2                    |                              |  |                |                       |                         |   |           |      |      |  |        |      |

### リップル電流補正係数 MULTIPLIER FOR RIPPLE CURRENT

周波数係数 Frequency coefficient

| 周波数 ( Hz )<br>Frequency |               | 120  | 1k   | 10k  | 100k |
|-------------------------|---------------|------|------|------|------|
| 係数<br>Coefficient       | 4.7 ~ 10 µF   | 0.24 | 0.53 | 0.80 | 1.00 |
|                         | 22 ~ 47 µF    | 0.30 | 0.60 | 0.88 | 1.00 |
|                         | 100 ~ 330 µF  | 0.38 | 0.75 | 0.95 | 1.00 |
|                         | 470 ~ 1000µ F | 0.52 | 0.85 | 0.98 | 1.00 |

### 呼称方法 PART NUMBER

| ZA                    |                 | D × L                       |                                  |               |                         |                     |
|-----------------------|-----------------|-----------------------------|----------------------------------|---------------|-------------------------|---------------------|
| 定格電圧<br>Rated Voltage | シリーズ名<br>Series | 定格静電容量<br>Rated Capacitance | 静電容量許容差<br>Capacitance Tolerance | 副記号<br>Option | リード加工記号<br>Lead Forming | ケースサイズ<br>Case Size |



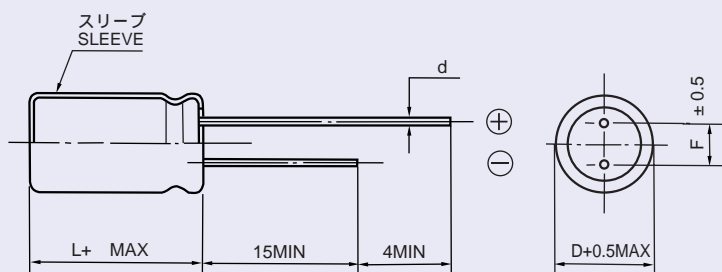
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## 寸法図 DIMENSIONS

(mm)



|   |       |       |         |          |          |           |         |
|---|-------|-------|---------|----------|----------|-----------|---------|
| D | 4 × 7 | 5 × 7 | 6.3 × 7 | 6.3 × 11 | 8 × 11.5 | 10 × 12.5 | 10 × 16 |
| d | 0.45  |       |         | 0.5      | 0.6      |           |         |
| F | 1.5   | 2.0   | 2.5     | 2.5      | 3.5      | 5.0       |         |
|   | 1.0   |       |         | 1.5      |          |           |         |

## 標準品一覧表 STANDARD SIZE

| 定格電圧 Rated voltage 6.3V(0J)               |                           |   |  |
|---|---------------------------|---|--|
| 定格静電容量<br>Rated capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>D × L(mm) | 定格リプル電流<br>Rated ripple current<br>(mA r.m.s./105 , 100kHz) | インピーダンス<br>Impedance<br>( MAX/20 , 100kHz) |
| 33  | 4 × 7                     | 230   | 0.48                                       |
| 47  | 5 × 7                     | 350   | 0.26                                       |
| 100                                       | 6.3 × 7                   | 480   | 0.15                                       |
| 220                                       | 6.3 × 11                  | 670   | 0.077                                      |
| 330                                       | 8 × 11.5                  | 1000  | 0.043                                      |
| 470                                       | 8 × 11.5                  | 1000  | 0.043                                      |
| 1000                                      | 10 × 16                   | 1740  | 0.024                                      |

| 定格電圧 Rated voltage 10V(1A)                |                           |   |  |
|---|---------------------------|---|--|
| 定格静電容量<br>Rated capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>D × L(mm) | 定格リプル電流<br>Rated ripple current<br>(mA r.m.s./105 , 100kHz) | インピーダンス<br>Impedance<br>( MAX/20 , 100kHz) |
| 22  | 4 × 7                     | 230   | 0.49                                       |
| 33  | 5 × 7                     | 350   | 0.26                                       |
| 47  | 5 × 7                     | 350   | 0.26                                       |
| 100                                       | 6.3 × 7                   | 480   | 0.15                                       |
| 220                                       | 8 × 11.5                  | 1000  | 0.044                                      |
| 330                                       | 8 × 11.5                  | 1000  | 0.043                                      |
| 470                                       | 10 × 12.5                 | 1300  | 0.030                                      |



# 小形アルミニウム電解コンデンサ

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| 定格電圧 Rated voltage 16V(1C)                |                                  |   |  |
|---|----------------------------------|---|--|
| 定格静電容量<br>Rated capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>D $\times$ L(mm) | 定格リプル電流<br>Rated ripple current<br>(mA r.m.s./105 , 100kHz) | インピーダンス<br>Impedance<br>( MAX/20 , 100kHz) |
| 22  | 5 $\times$ 7                     | 350   | 0.27                                       |
| 33  | 5 $\times$ 7                     | 350   | 0.26                                       |
| 47  | 6.3 $\times$ 7                   | 480   | 0.15                                       |
| 100                                       | 6.3 $\times$ 11                  | 670   | 0.078                                      |
| 220                                       | 8 $\times$ 11.5                  | 1000  | 0.044                                      |
| 330                                       | 10 $\times$ 12.5                 | 1300  | 0.030                                      |
| 470                                       | 10 $\times$ 16                   | 1740  | 0.025                                      |

| 定格電圧 Rated voltage 25V(1E)                |                                  |   |  |
|---|----------------------------------|---|--|
| 定格静電容量<br>Rated capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>D $\times$ L(mm) | 定格リプル電流<br>Rated ripple current<br>(mA r.m.s./105 , 100kHz) | インピーダンス<br>Impedance<br>( MAX/20 , 100kHz) |
| 10  | 4 $\times$ 7                     | 230   | 0.52                                       |
| 22  | 5 $\times$ 7                     | 350   | 0.27                                       |
| 33  | 6.3 $\times$ 7                   | 480   | 0.16                                       |
| 47  | 6.3 $\times$ 7                   | 480   | 0.15                                       |
| 100                                       | 6.3 $\times$ 11                  | 670   | 0.078                                      |
| 220                                       | 10 $\times$ 12.5                 | 1300  | 0.031                                      |
| 330                                       | 10 $\times$ 16                   | 1740  | 0.026                                      |

| 定格電圧 Rated voltage 35V(1V)                |                                  |   |  |
|---|----------------------------------|---|--|
| 定格静電容量<br>Rated capacitance<br>( $\mu$ F) | 外形寸法<br>Size<br>D $\times$ L(mm) | 定格リプル電流<br>Rated ripple current<br>(mA r.m.s./105 , 100kHz) | インピーダンス<br>Impedance<br>( MAX/20 , 100kHz) |
| 4.7                                       | 4 $\times$ 7                     | 230   | 0.64                                       |
| 10  | 5 $\times$ 7                     | 350   | 0.33                                       |
| 22  | 6.3 $\times$ 7                   | 480   | 0.17                                       |
| 33  | 6.3 $\times$ 7                   | 480   | 0.16                                       |
| 47  | 6.3 $\times$ 11                  | 670   | 0.089                                      |
| 100                                       | 8 $\times$ 11.5                  | 1000  | 0.048                                      |
| 220                                       | 10 $\times$ 16                   | 1740  | 0.026                                      |



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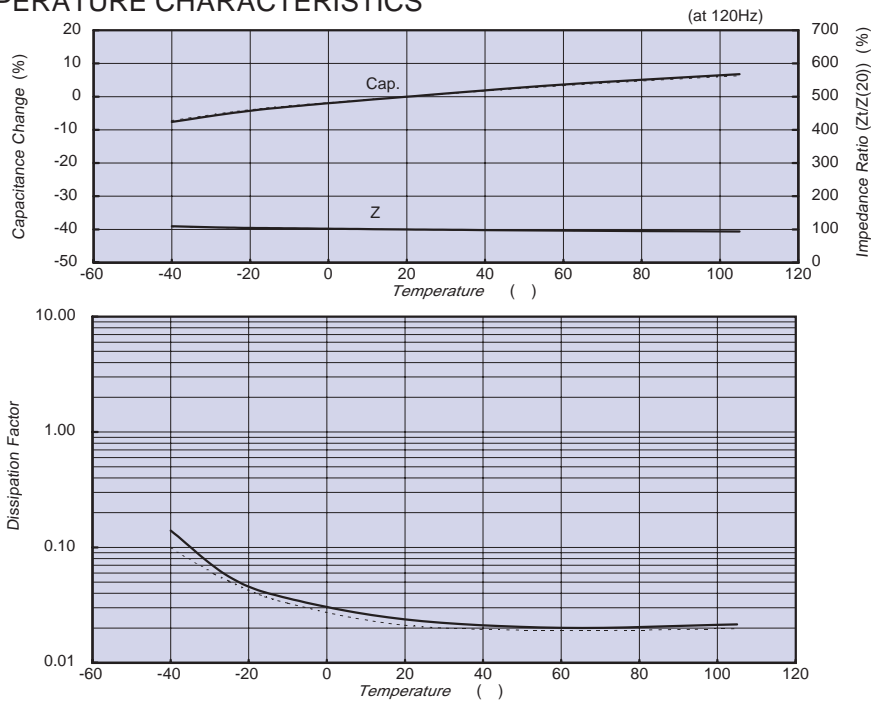
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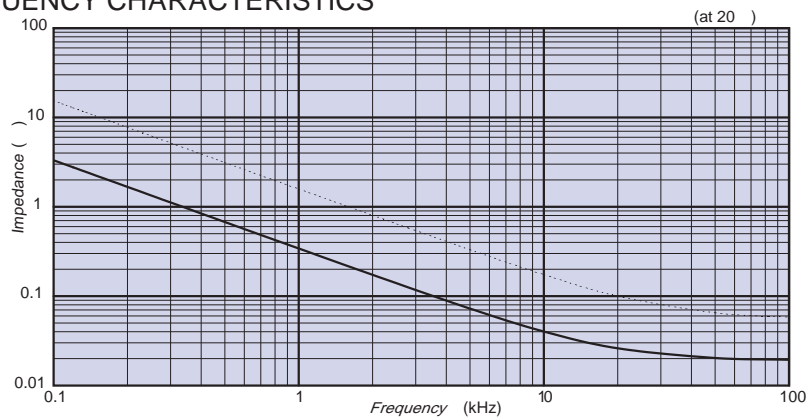
## 特性データ CHARACTERISTIC DATA

————— 16 ZA 470 M 10 × 16  
 - - - - - 25 ZA 100 M 6.3 × 11

### ・ 温度特性 TEMPERATURE CHARACTERISTICS



### ・ 周波数特性 FREQUENCY CHARACTERISTICS



### ・ 耐久性 ENDURANCE

