

# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

## I14072 (BW)

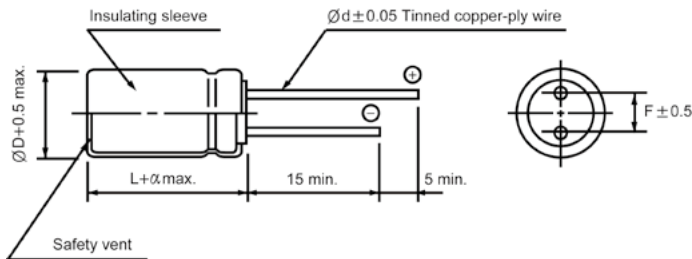
High Temperature Range, For +135°C Use Series

- Highly dependable reliability withstanding load life of 1000 to 3000 hours at 135°C
- Suited for automobile electronics where heavy duty services are indispensable
- Complied to the RoHS directive

| Items   | Performance characteristics  |                                    |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
|---|--|------------------------------------|------|------|------|------|------|------|-----|-----|--------------|------|------|------|------|------|------|------|
| Operating temperature range   | -55 ~ +135°C   |                                    |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
| Leakage current max.  | $I = 0.03CV$ or $4\mu A$ whichever is greater (after 1 minute)   |                                    |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
| Capacitance tolerance   | $\pm 20\%$ at 120Hz, 20°C  |                                    |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
| Dissipation factor max.<br>(at 120Hz, 20°C)                                   | Capacitance > 1000 $\mu F$ : $\tan\delta$ increases by 0.02 for each 1000 $\mu F$ from below value.  |                                    |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
|   | <table border="1"> <tr> <td>WV</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>80</td> <td>100</td> </tr> <tr> <td>Tan<math>\delta</math></td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> </tr> </table> | WV                                 | 10   | 16   | 25   | 35   | 50   | 63   | 80  | 100 | Tan $\delta$ | 0.20 | 0.16 | 0.14 | 0.12 | 0.10 | 0.10 | 0.08 |
| WV  | 10   | 16                                 | 25   | 35   | 50   | 63   | 80   | 100  |     |     |              |      |      |      |      |      |      |      |
| Tan $\delta$  | 0.20   | 0.16                               | 0.14 | 0.12 | 0.10 | 0.10 | 0.08 | 0.08 |     |     |              |      |      |      |      |      |      |      |
| Low temperature characteristics<br>(Impedance ratio at 120Hz)                 | WV   | 10                                 | 16   | 25   | 35   | 50   | 63   | 80   | 100 |     |              |      |      |      |      |      |      |      |
|   | Z-25°C /Z+20°C   | 3                                  | 2    | 2    | 2    | 2    | 2    | 2    | 2   |     |              |      |      |      |      |      |      |      |
|   | Z-40°C /Z+20°C   | 4                                  | 4    | 4    | 4    | 4    | 4    | 4    | 4   |     |              |      |      |      |      |      |      |      |
| Load life<br>(after application of the rated voltage for 3000 hours at 135°C) | Leakage current  | Less than specified value          |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
|   | Capacitance change   | Within $\pm 30\%$ of initial value |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
|   | Tan $\delta$   | Less than 300% of specified value  |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
|   | $\Phi 8$ :1000 hours; $\Phi 10$ :2000 hours; $\geq \Phi 12.5$ :3000 hours.   |                                    |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |
| Shelf life (at 135°C)   | After 1000 hours no load test, leakage current, capacitance and $\tan\delta$ are same as load life value.  |                                    |      |      |      |      |      |      |     |     |              |      |      |      |      |      |      |      |

### ● DRAWING

Unit : mm



|          |     |     |      |     |
|----------|-----|-----|------|-----|
| $\Phi D$ | 8   | 10  | 12.5 | 16  |
| F        | 3.5 | 5.0 | 5.0  | 7.5 |
| $\Phi d$ | 0.5 | 0.6 | 0.8  |     |
| $\alpha$ | 1.5 | 2.0 |      |     |

### ● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

| V        | Frequency      |       |       |      |              |
|----------|----------------|-------|-------|------|--------------|
|          | CV             | 120Hz | 300Hz | 1kHz | 10kHz $\leq$ |
| 10 ~ 100 | 1000 > CV      | 0.50  | 0.64  | 0.83 | 1.00         |
|          | 1000 $\leq$ CV | 0.67  | 0.79  | 0.91 | 1.00         |

# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

## I14072 (BW) Series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

| WV<br>μF | 10      |       |      | 16      |        |      | 25      |        |      | 35      |         |       |
|----------|---------|-------|------|---------|--------|------|---------|--------|------|---------|---------|-------|
|          | 100     |       |      |         | 8×11.5 | 0.32 | 340     | 8×11.5 | 0.13 | 500     | 10×12.5 | 0.150 |
| 220      | 8×11.5  | 0.26  | 340  | 10×12.5 | 0.15   | 620  | 10×12.5 | 0.10   | 680  | 10×16   | 0.094   | 790   |
| 330      | 10×12.5 | 0.15  | 620  | 10×12.5 | 0.10   | 680  | 10×16   | 0.075  | 945  | 10×20   | 0.075   | 950   |
| 470      | 10×12.5 | 0.10  | 680  | 10×16   | 0.075  | 945  | 10×20   | 0.057  | 1100 | 12.5×20 | 0.058   | 1330  |
| 1000     | 10×20   | 0.057 | 1100 | 12.5×20 | 0.042  | 1490 | 12.5×25 | 0.033  | 1750 | 16×25   | 0.031   | 2010  |
| 2200     | 12.5×25 | 0.033 | 1750 | 16×25   | 0.024  | 2300 | 16×31.5 | 0.020  | 2710 |         |         |       |
| 3300     | 16×25   | 0.024 | 2300 | 16×31.5 | 0.020  | 2710 |         |        |      |         |         |       |
| 4700     | 16×31.5 | 0.020 | 2710 |         |        |      |         |        |      |         |         |       |

| WV<br>μF | 50      |        |      | 63        |        |       | 80        |      |      | 100     |       |      |
|----------|---------|--------|------|-----------|--------|-------|-----------|------|------|---------|-------|------|
|          | 4.7     | 8×11.5 | 1.15 | 85        |        |       |           |      |      |         |       |      |
| 10       | 8×11.5  | 0.75   | 180  |           |        |       |           |      |      | 8×11.5  | 1.50  | 150  |
| 22       | 8×11.5  | 0.50   | 250  | 8×11.5    | 2.00   | 130   | 8×11.5    | 1.50 | 150  | 10×12.5 | 0.80  | 480  |
| 33       | 8×11.5  | 0.45   | 300  | 8×11.5    | 1.50   | 150   | 10×12.5   | 0.80 | 480  | 10×12.5 | 0.80  | 480  |
| 47       | 8×11.5  | 0.35   | 440  | 10×12.5   | 0.59   | 530   | 10×12.5   | 0.80 | 480  | 10×16   | 0.55  | 630  |
| 100      | 10×12.5 | 0.18   | 555  | 10×16     | 0.41   | 690   | 10×20     | 0.39 | 790  | 12.5×20 | 0.25  | 990  |
| 220      | 10×20   | 0.098  | 930  | 12.5×20   | 0.16   | 1050  | 12.5×25   | 0.18 | 1240 | 16×25   | 0.11  | 1500 |
| 330      | 12.5×20 | 0.070  | 1330 | 12.5×25   | 0.12   | 1290  | 12.5×31.5 | 0.16 | 1390 | 16×31.5 | 0.079 | 1790 |
| 470      | 12.5×25 | 0.055  | 1650 | 12.5×31.5 | 0.097  | 1460  | 16×25     | 0.11 | 1500 |         |       |      |
| 1000     | 16×31.5 | 0.031  | 2430 | ▲16×31.5  | ▲0.055 | ▲1900 |           |      |      |         |       |      |

Ripple current (mA rms) at 135°C , 100kHz  
 Impedance (Ω) max. at 20°C , 100kHz  
 Case size ΦD×L(mm)