

# SURFACE MOUNT ALUMINUM ELECTROLYTIC

**JV** Ultra Low Impedance Series

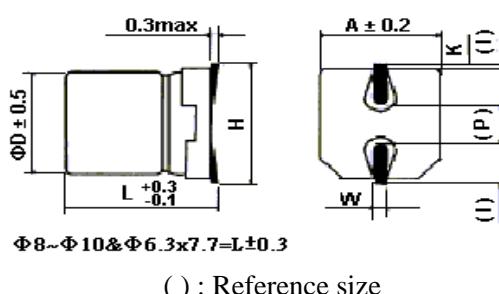
- Features : 105°C 2000 hours , Low profile vertical chip, Ultra low impedance
- Recommended Applications: AV(TV,Video,Audio) ,Monitor/Computer, OA/HA/Communication ,SMPS
- Corresponding product to RoHS



## ■ Specifications

| Item   | Characteristics  |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
|--|--|----|----|----|----|--|--------------------|--|--------------------|---|-----------------|-----------------------------------|----------|--|--|--|--|--|--------------------|---|---|---|---|---|--------------------|---|---|---|---|---|
| Operating Temperature Range                              | -55 ~ +105°C   |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Rated Voltage Range (WV)                                 | 6.3 ~ 35VDC  |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Capacitance Range  | 10~ 1800 $\mu$ F   |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Capacitance Tolerance                                    | $\pm 20\%$ at 120Hz , 20°C   |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Leakage Current (MAX) (20°C)                             | $I \leq 0.01CV$ or $3 \mu A$ whichever is greater(After rated voltage applied for 2 minutes)<br>$I$ = Leakage Current ( $\mu A$ ) C= Nominal Capacitance ( $\mu F$ ) V= Rated Voltage (V)  |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Dissipation Factor (MAX) ( $\tan \delta$ ) (120Hz ,20°C) | Shown in the table of standard rating  |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Low Temperature Stability Impedance Ratio (MAX)          | <table border="1"> <tr> <td>WV</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> </tr> <tr> <td>Z(120HZ)</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>Z(-25°C) / Z(20°C)</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40°C) / Z(20°C)</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>   |    |    |    |    |  | WV                 | 6.3                                    | 10                 | 16  | 25              | 35                                | Z(120HZ) |  |  |  |  |  | Z(-25°C) / Z(20°C) | 2 | 2 | 2 | 2 | 2 | Z(-40°C) / Z(20°C) | 3 | 3 | 3 | 3 | 3 |
| WV   | 6.3  | 10 | 16 | 25 | 35 |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Z(120HZ)   |  |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Z(-25°C) / Z(20°C)                                       | 2  | 2  | 2  | 2  | 2  |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Z(-40°C) / Z(20°C)                                       | 3  | 3  | 3  | 3  | 3  |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Endurance  | <p>After applying rated voltage with rated ripple current for 2000 hours at 105 °C,<br/>the capacitor shall meet the following requirement.</p> <table border="1"> <tr> <td>Capacitance Change</td> <td>Within <math>\pm 30\%</math> of the initial value</td> </tr> <tr> <td>Dissipation Factor</td> <td>Not more than 200% of the specified value</td> </tr> <tr> <td>Leakage Current</td> <td>Not more than the specified value</td> </tr> </table> |    |    |    |    |  | Capacitance Change | Within $\pm 30\%$ of the initial value | Dissipation Factor | Not more than 200% of the specified value | Leakage Current | Not more than the specified value |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Capacitance Change                                       | Within $\pm 30\%$ of the initial value   |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Dissipation Factor                                       | Not more than 200% of the specified value  |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Leakage Current  | Not more than the specified value  |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |
| Shelf Life   | After placed at 105°C without voltage applied for 1000 hours,<br>the capacitor shall meet the same requirement as Endurance.   |    |    |    |    |  |                    |  |                    |   |                 |                                   |          |  |  |  |  |  |                    |   |   |   |   |   |                    |   |   |   |   |   |

## ■ Diagram of Dimensions(mm)



( ) : Reference size

| $\phi D$ | L    | A    | H        | I   | W        | P       | K                   |
|----------|------|------|----------|-----|----------|---------|---------------------|
| 4.0      | 5.4  | 4.3  | 5.5 Max  | 1.8 | 0.65±0.1 | 1.0±0.2 | 0.35 +0.15<br>-0.20 |
| 5.0      | 5.4  | 5.3  | 6.5 Max  | 2.2 | 0.65±0.1 | 1.5±0.2 | 0.35 +0.15<br>-0.20 |
| 6.3      | 5.4  | 6.6  | 7.8 Max  | 2.6 | 0.65±0.1 | 1.8±0.2 | 0.35 +0.15<br>-0.20 |
| 6.3      | 7.7  | 6.6  | 7.8 Max  | 2.6 | 0.65±0.1 | 1.8±0.2 | 0.35 +0.15<br>-0.20 |
| 8.0      | 10.2 | 8.3  | 10.0 Max | 3.4 | 0.90±0.2 | 3.1±0.2 | 0.70±0.2            |
| 10.0     | 10.2 | 10.3 | 12.0 Max | 3.5 | 0.90±0.2 | 4.6±0.2 | 0.70±0.2            |

## ■ Multiplier for Ripple Current

Frequency coefficient

| Frequency (Hz) | 120  | 1K   | 10K  | 100K |
|----------------|------|------|------|------|
| Coefficient    | 0.70 | 0.80 | 0.90 | 1.00 |

# SURFACE MOUNT ALUMINUM ELECTROLYTIC

**JV**

**Ultra Low Impedance  
Series**

■ Case Size / tan δ / Max Ripple Current / Impedance

| Capacitance<br>( $\mu$ F) | Rated (Surge) Voltage |       |     |      |            |       |     |      |            |       |     |      |
|---------------------------|-----------------------|-------|-----|------|------------|-------|-----|------|------------|-------|-----|------|
|                           | 6.3(8)                |       |     |      | 10(13)     |       |     |      | 16(20)     |       |     |      |
|                           | $\phi$ DxL            | tan δ | RC  | Z    | $\phi$ DxL | tan δ | RC  | Z    | $\phi$ DxL | tan δ | RC  | Z    |
| 22                        |                       |       |     |      |            |       |     |      | 4x5.4      | 0.16  | 90  | 1.93 |
| 33                        |                       |       |     |      | 4x5.4      | 0.19  | 90  | 1.93 | 4x5.4      | 0.16  | 90  | 1.93 |
| 47                        | 4x5.4                 | 0.26  | 90  | 1.93 | 4x5.4      | 0.19  | 90  | 1.93 | 4x5.4      | 0.16  | 90  | 1.93 |
|                           |                       |       |     |      | 5x5.4      | 0.19  | 160 | 1.00 | 5x5.4      | 0.16  | 160 | 1.00 |
| 68                        | 4x5.4                 | 0.26  | 90  | 1.93 | 4x5.4      | 0.19  | 90  | 1.93 |            |       |     |      |
|                           |                       |       |     |      | 5x5.4      | 0.19  | 160 | 1.00 |            |       |     |      |
| 100                       | 5x5.4                 | 0.26  | 160 | 1.00 | 5x5.4      | 0.19  | 160 | 1.00 | 6.3x5.4    | 0.16  | 240 | 0.52 |
|                           |                       |       |     |      | 6.3x5.4    | 0.19  | 240 | 0.52 |            |       |     |      |
| 150                       | 5x5.4                 | 0.26  | 160 | 1.00 | 5x5.4      | 0.19  | 160 | 1.00 | 6.3x5.4    | 0.16  | 240 | 0.52 |
|                           | 6.3x5.4               | 0.26  | 240 | 0.52 | 6.3x5.4    | 0.19  | 240 | 0.52 | 6.3x7.7    | 0.16  | 280 | 0.34 |
| 220                       | 6.3x5.4               | 0.26  | 240 | 0.52 | 6.3x5.4    | 0.19  | 240 | 0.52 | 6.3x7.7    | 0.16  | 280 | 0.34 |
|                           |                       |       |     |      | 6.3x7.7    | 0.19  | 280 | 0.34 |            |       |     |      |
| 330                       | 6.3x5.4               | 0.26  | 240 | 0.52 | 6.3x7.7    | 0.19  | 280 | 0.34 | 6.3x7.7    | 0.16  | 280 | 0.34 |
|                           | 6.3x7.7               | 0.26  | 280 | 0.34 |            |       |     |      | 8x10.2     | 0.16  | 600 | 0.16 |
| 470                       | 6.3x7.7               | 0.26  | 280 | 0.34 | 6.3x7.7    | 0.19  | 280 | 0.34 | 8x10.2     | 0.16  | 600 | 0.16 |
|                           |                       |       |     |      | 8x10.2     | 0.19  | 600 | 0.16 |            |       |     |      |
| 680                       | 8x10.2                | 0.26  | 600 | 0.16 | 8x10.2     | 0.19  | 600 | 0.16 | 8x10.2     | 0.16  | 600 | 0.16 |
|                           |                       |       |     |      | 10x10.2    | 0.19  | 850 | 0.08 |            |       |     |      |
| 1000                      | 8x10.2                | 0.26  | 600 | 0.16 | 8x10.2     | 0.19  | 600 | 0.16 | 10x10.2    | 0.16  | 850 | 0.08 |
|                           |                       |       |     |      | 10x10.2    | 0.19  | 850 | 0.08 |            |       |     |      |
| 1200                      | 8x10.2                | 0.26  | 600 | 0.16 | 10x10.2    | 0.19  | 850 | 0.08 |            |       |     |      |
|                           | 10x10.2               | 0.26  | 850 | 0.08 |            |       |     |      |            |       |     |      |
| 1500                      | 10x10.2               | 0.26  | 850 | 0.08 |            |       |     |      |            |       |     |      |
| 1800                      | 10x10.2               | 0.26  | 850 | 0.08 |            |       |     |      |            |       |     |      |

| Capacitance<br>( $\mu$ F) | Rated (Surge) Voltage |       |     |      |            |       |     |      |
|---------------------------|-----------------------|-------|-----|------|------------|-------|-----|------|
|                           | 25(32)                |       |     |      | 35(44)     |       |     |      |
|                           | $\phi$ DxL            | tan δ | RC  | Z    | $\phi$ DxL | tan δ | RC  | Z    |
| 10                        | 4x5.4                 | 0.14  | 90  | 1.93 | 4x5.4      | 0.12  | 90  | 1.93 |
| 22                        | 4x5.4                 | 0.14  | 90  | 1.93 | 5x5.4      | 0.12  | 160 | 1.00 |
|                           | 5x5.4                 | 0.14  | 160 | 1.00 |            |       |     |      |
| 33                        | 5x5.4                 | 0.14  | 160 | 1.00 | 5x5.4      | 0.14  | 160 | 1.00 |
|                           |                       |       |     |      | 6.3x5.4    | 0.12  | 240 | 0.52 |
| 47                        | 5x5.4                 | 0.14  | 160 | 1.00 | 6.3x5.4    | 0.12  | 240 | 0.52 |
|                           | 6.3x5.4               | 0.14  | 240 | 0.52 |            |       |     |      |
| 68                        | 6.3x5.4               | 0.14  | 240 | 0.52 | 6.3x5.4    | 0.12  | 240 | 0.52 |
|                           |                       |       |     |      | 6.3x7.7    | 0.12  | 280 | 0.34 |
| 100                       | 6.3x5.4               | 0.14  | 240 | 0.52 | 6.3x7.7    | 0.12  | 280 | 0.34 |
|                           | 6.3x7.7               | 0.14  | 280 | 0.34 |            |       |     |      |
| 150                       | 6.3x7.7               | 0.14  | 280 | 0.34 | 8x10.2     | 0.12  | 600 | 0.16 |
| 220                       | 8x10.2                | 0.14  | 600 | 0.16 | 8x10.2     | 0.12  | 600 | 0.16 |
| 330                       | 8x10.2                | 0.14  | 600 | 0.16 | 10x10.2    | 0.12  | 850 | 0.08 |
| 470                       | 10x10.2               | 0.14  | 850 | 0.08 |            |       |     |      |
| 560                       | 10x10.2               | 0.14  | 850 | 0.08 |            |       |     |      |

☆CASE SIZE :  $\phi$  DxL(mm)、MAX DISSIPATION FACTOR : tan δ / 120Hz,20°C、  
 MAX PERMISSIBLE RIPPLE CURRENT : RC(mArms) / 100KHz,105°C、  
 MAX IMPEDANCE : Z( $\Omega$ ) / 100KHz,20°C