

- For surface mount 105°C, 1000 hours guaranteed.
- Carrier taping supplied

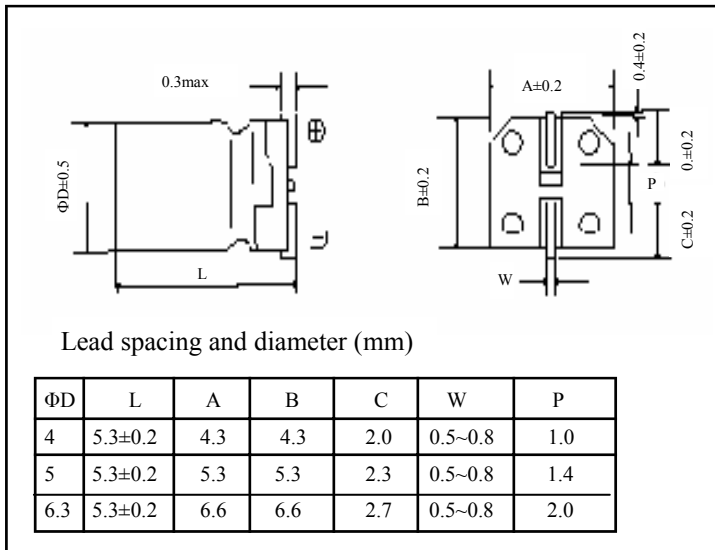


## ■ SPECIFICATIONS

| Item                                | Characteristics  |                                  |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
|-------------------------------------|--|----------------------------------|------------|-----------------|---------------------------------|--------------------|----------------------------------|--------------------|---|---------------|------|------|------|------|------|-------|---------------|---|---|---|---|---|
| Operating Temperature Range         | -55~+105   |                                  |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| Leakage Current (μA)                | Less than 0.01CV or 3, whichever is larger (at 25°C, after 2 minutes) C: Nominal Capacitance (μF), V:Rated Voltage (V)   |                                  |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| Capacitance Tolerance (25 °C,120Hz) | ± 20%  |                                  |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| Dissipation Factor (25°C,120Hz)     | <table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>tanδ</td> <td>0.30</td> <td>0.26</td> <td>0.22</td> <td>0.16</td> <td>0.13</td> <td>0.12</td> </tr> </tbody> </table>  | Rated voltage (V)                | 6.3        | 10              | 16                              | 25                 | 35                               | 50                 | tanδ  | 0.30          | 0.26 | 0.22 | 0.16 | 0.13 | 0.12 |       |               |   |   |   |   |   |
|                                     | Rated voltage (V)  | 6.3                              | 10         | 16              | 25                              | 35                 | 50                               |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| tanδ                                | 0.30   | 0.26                             | 0.22       | 0.16            | 0.13                            | 0.12               |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| Temperature Stability (120Hz)       | <table border="1"> <thead> <tr> <th>Rated voltage (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>Impedance</td> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>ratio</td> <td>Z-40°C/Z+20°C</td> <td>8</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | Rated voltage (V)                | 6.3        | 10              | 16                              | 25                 | 35                               | 50                 | Impedance                                   | Z-25°C/Z+20°C | 4    | 3    | 2    | 2    | 2    | ratio | Z-40°C/Z+20°C | 8 | 5 | 4 | 3 | 3 |
|                                     | Rated voltage (V)  | 6.3                              | 10         | 16              | 25                              | 35                 | 50                               |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
|                                     | Impedance  | Z-25°C/Z+20°C                    | 4          | 3               | 2                               | 2                  | 2                                |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| ratio                               | Z-40°C/Z+20°C  | 8                                | 5          | 4               | 3                               | 3                  |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| Load Life (+105°C)                  | <table border="1"> <thead> <tr> <th>Time</th> <th>1000 hours</th> </tr> </thead> <tbody> <tr> <td>Leakage current</td> <td>Initial specified value or less</td> </tr> <tr> <td>Capacitance change</td> <td>Within ±20% of the initial value</td> </tr> <tr> <td>Dissipation factor</td> <td>200% or less of the initial specified value</td> </tr> </tbody> </table>                             | Time                             | 1000 hours | Leakage current | Initial specified value or less | Capacitance change | Within ±20% of the initial value | Dissipation factor | 200% or less of the initial specified value |               |      |      |      |      |      |       |               |   |   |   |   |   |
|                                     | Time   | 1000 hours                       |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
|                                     | Leakage current  | Initial specified value or less  |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
|                                     | Capacitance change   | Within ±20% of the initial value |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| Dissipation factor                  | 200% or less of the initial specified value  |                                  |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |
| Shelf Life (+105°C)                 | Test time 500 hours. Others have same as load life Pretreatment performed.   |                                  |            |                 |                                 |                    |                                  |                    |   |               |      |      |      |      |      |       |               |   |   |   |   |   |

## ■ DIMENSIONS

mm



## ■ MULTIPLIER FOR RIPPLE CURRENT

### Frequency coefficient

| Rated Voltage (v) | Freq (Hz) |     |      |          |
|-------------------|-----------|-----|------|----------|
|                   | 50        | 120 | 1K   | 10K~100K |
| 6.3~16            | 0.80      | 1   | 1.15 | 1.25     |
| 25~35             | 0.80      | 1   | 1.25 | 1.40     |
| 50                | 0.80      | 1   | 1.35 | 1.50     |

### Temperature coefficient

| Temperature (°C) | +70 | +85  | +105 |
|------------------|-----|------|------|
| Factor           | 2.1 | 1.75 | 1    |

## ■ STANDARD RATINGS

| Wv (V)   |      | 6.3       |      |     |        | 10        |      |     |        | 16        |      |     |        |
|----------|------|-----------|------|-----|--------|-----------|------|-----|--------|-----------|------|-----|--------|
| Cap (μF) | Item | Size (mm) | tanδ | ESR | Ripple | Size (mm) | tanδ | ESR | Ripple | Size (mm) | tanδ | ESR | Ripple |
|          |      | Φ DxL     |      | Ω   | mArms  | ΦDxL      |      | Ω   | mArms  | ΦDxL      |      | Ω   | mArms  |
| 0.1      |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -   | -      |
| 0.22     |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -   | -      |
| 0.33     |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -   | -      |
| 0.47     |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -   | -      |
| 1        |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -   | -      |
| 2.2      |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -   | -      |
| 3.3      |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -   | -      |
| 4.7      |      | -         | -    | -   | -      | -         | -    | -   | -      | 4x5.3     | 0.22 | 8.0 | 16     |
| 10       |      | -         | -    | -   | -      | 4x5.3     | 0.26 | 8.0 | 15     | 5x5.3     | 0.22 | 4.0 | 28     |
| 22       |      | 4x5.3     | 0.30 | 8.0 | 21     | 5x5.3     | 0.26 | 4.0 | 25     | 6.3x5.3   | 0.22 | 4.0 | 40     |
| 33       |      | 5x5.3     | 0.30 | 4.0 | 30     | 5x5.3     | 0.26 | 4.0 | 31     | 6.3x5.3   | 0.22 | 2.2 | 47     |
| 47       |      | 6.3x5.3   | 0.30 | 4.0 | 36     | 6.3x5.3   | 0.26 | 2.2 | 43     | -         | -    | -   | -      |
| 100      |      | 6.3x5.3   | 0.30 | 2.2 | 61     | -         | -    | -   | -      | -         | -    | -   | -      |

| Wv (V)   |      | 25        |      |     |        | 35        |      |     |        | 50        |      |      |        |
|----------|------|-----------|------|-----|--------|-----------|------|-----|--------|-----------|------|------|--------|
| Cap (μF) | Item | Size (mm) | tanδ | ESR | Ripple | Size (mm) | tanδ | ESR | Ripple | Size (mm) | tanδ | ESR  | Ripple |
|          |      | ΦDxL      |      | Ω   | mArms  | ΦDxL      |      | Ω   | mArms  | ΦDxL      |      | Ω    | mArms  |
| 0.1      |      | -         | -    | -   | -      | -         | -    | -   | -      | 4x5.3     | 0.12 | 12.0 | 2      |
| 0.22     |      | -         | -    | -   | -      | -         | -    | -   | -      | 4x5.3     | 0.12 | 12.0 | 3      |
| 0.33     |      | -         | -    | -   | -      | -         | -    | -   | -      | 4x5.3     | 0.12 | 12.0 | 4      |
| 0.47     |      | -         | -    | -   | -      | -         | -    | -   | -      | 4x5.3     | 0.12 | 12.0 | 5      |
| 1        |      | -         | -    | -   | -      | -         | -    | -   | -      | 4x5.3     | 0.12 | 12.0 | 7      |
| 2.2      |      | -         | -    | -   | -      | -         | -    | -   | -      | 4x5.3     | 0.12 | 12.0 | 10     |
| 3.3      |      | -         | -    | -   | -      | -         | -    | -   | -      | 5x5.3     | 0.12 | 12.0 | 12     |
| 4.7      |      | 4x5.3     | 0.16 | 8.0 | 12     | 4x5.3     | 0.13 | 8.0 | 14     | 6.3x5.3   | 0.12 | 12.0 | 17     |
| 10       |      | 5x5.3     | 0.16 | 4.0 | 21     | 5x5.3     | 0.13 | 4.0 | 23     | -         | -    | -    | 23     |
| 22       |      | 6.3x5.3   | 0.16 | 2.2 | 36     | 6.3x5.3   | 0.13 | 2.2 | 50     | -         | -    | -    | -      |
| 33       |      | 6.3x5.3   | 0.16 | 2.2 | 44     | -         | -    | -   | -      | -         | -    | -    | -      |
| 47       |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -    | -      |
| 100      |      | -         | -    | -   | -      | -         | -    | -   | -      | -         | -    | -    | -      |

ESR: 20°C, 100KHz

Ripple Current: 105°C, 120Hz