

## AA series SMD type & Long Life to 10000 Hours



### Features

- ◆ SMD type
- ◆ Voltage Range: 25 to 80Vdc, Capacitance Range: 10 to 330  $\mu$ F
- ◆ Endurance : 105°C 10,000 hours
- ◆ RoHS Compliant
- ◆ AEC-Q200 Compliant

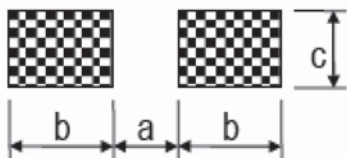
### Specifications

| Items   | Performance Characteristics  |              |                                       |     |    |    |    |    |    |    |    |     |
|---|--|--------------|---------------------------------------|-----|----|----|----|----|----|----|----|-----|
| Operating Temperature Range                         | -55°C~+105°C   |              |                                       |     |    |    |    |    |    |    |    |     |
| Rated Voltage Range                                 | 25~80V DC  |              |                                       |     |    |    |    |    |    |    |    |     |
| Surge Voltage (V)                                   | <table border="1"> <tr> <td>25</td><td>35</td><td>50</td><td>63</td><td>80</td> </tr> <tr> <td>32</td><td>44</td><td>63</td><td>79</td><td>100</td> </tr> </table> |              | 25                                    | 35  | 50 | 63 | 80 | 32 | 44 | 63 | 79 | 100 |
| 25  | 35   | 50           | 63                                    | 80  |    |    |    |    |    |    |    |     |
| 32  | 44   | 63           | 79                                    | 100 |    |    |    |    |    |    |    |     |
| Capacitance Range                                   | 10 to 330 $\mu$ F  |              |                                       |     |    |    |    |    |    |    |    |     |
| Capacitance Tolerance                               | $\pm$ 20% ( 120Hz , +20°C )  |              |                                       |     |    |    |    |    |    |    |    |     |
| Leakage Current ( +20°C , max )                     | 0.01CV or 3 $\mu$ A, whichever is greater<br>( Rated voltage applied, after 2 minutes at 20°C )  |              |                                       |     |    |    |    |    |    |    |    |     |
| Dissipation Factor (tan $\delta$ , at 120Hz , 20°C) | Not to exceed the values shown in Standard Ratings   |              |                                       |     |    |    |    |    |    |    |    |     |
| ESR ( at 100kHz , 20°C )                            | Not to exceed the values shown in Standard Ratings   |              |                                       |     |    |    |    |    |    |    |    |     |
| Endurance   | 105°C rated voltage applied (with the rated ripple current)  | Test         | 10,000 hours                          |     |    |    |    |    |    |    |    |     |
|   |  | $\Delta$ C/C | Within $\pm$ 30% of the initial value |     |    |    |    |    |    |    |    |     |
|   |  | tan $\delta$ | Less than 200% of the specified value |     |    |    |    |    |    |    |    |     |
|   |  | ESR          | Less than 200% of the specified value |     |    |    |    |    |    |    |    |     |
|   |  | LC           | Less than the specified value         |     |    |    |    |    |    |    |    |     |

### Multiplier for Ripple Current vs. Frequency

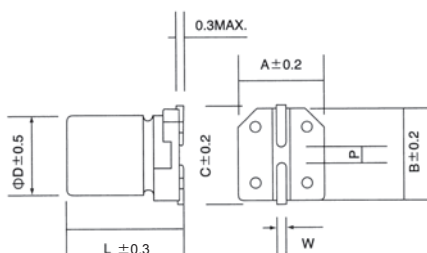
| Frequency   | 120Hz $\leq$ freq.<1kHz | 1KHz $\leq$ freq.<10kHz | 10kHz $\leq$ freq.<100kHz | 100kHz $\leq$ freq.<300kHz |
|-------------|-------------------------|-------------------------|---------------------------|----------------------------|
| Coefficient | 0.1                     | 0.3                     | 0.6                       | 1.0                        |

### Recommended land pattern:(unit:mm)



| $\phi$ DxL | a   | b   | c   |
|------------|-----|-----|-----|
| 5x5.8      | 1.4 | 3.0 | 1.6 |
| 6.3x5.8    | 2.1 | 3.5 | 1.6 |
| 6.3x7.7    | 2.1 | 3.5 | 1.6 |
| 8x10.5     | 2.8 | 4.2 | 1.9 |
| 10x10.5    | 4.3 | 4.4 | 1.9 |

### Diagram of Dimensions:(unit:mm)



| $\phi$ DxL | W    | H    | C    | R          | P   |
|------------|------|------|------|------------|-----|
| 5x5.8      | 5.3  | 5.3  | 5.9  | 0.5 to 0.8 | 1.4 |
| 6.3x5.8    | 6.5  | 6.5  | 7.2  | 0.5 to 0.8 | 2.2 |
| 6.3x7.7    | 6.5  | 6.5  | 7.2  | 0.5 to 0.8 | 2.2 |
| 8x10.5     | 8.3  | 8.3  | 9.0  | 0.7 to 1.1 | 3.1 |
| 10x10.5    | 10.3 | 10.3 | 11.0 | 0.7 to 1.1 | 4.5 |

## Standard Ratings

| W.V.<br>(V) | Cap(μF) | Size<br>φ DxL(mm) | L.C.<br>(μA,2min) | tg δ<br>(120Hz,20°C) | ESR<br>(mΩ),100KHz) | Maximum Permissible Ripple<br>Current(mA,r.m.s) |
|-------------|---------|-------------------|-------------------|----------------------|---------------------|---|
| 25          | 33      | 5x5.8             | 8.3               | 0.14                 | 80                  | 900   |
|             | 56      | 6.3x5.8           | 14                | 0.14                 | 50                  | 1300  |
|             | 100     | 6.3x7.7           | 25                | 0.14                 | 30                  | 2000  |
|             | 220     | 8x10.5            | 55                | 0.14                 | 27                  | 2300  |
|             | 330     | 10x10.5           | 82.5              | 0.14                 | 20                  | 2500  |
| 35          | 22      | 5x5.8             | 7.7               | 0.12                 | 100                 | 900   |
|             | 27      | 6.3x5.8           | 9.5               | 0.12                 | 60                  | 1300  |
|             | 47      | 6.3x5.8           | 16.5              | 0.12                 | 60                  | 1300  |
|             | 68      | 6.3x7.7           | 23.8              | 0.12                 | 35                  | 2000  |
|             | 150     | 8x10.5            | 52.5              | 0.12                 | 27                  | 2300  |
|             | 270     | 10x10.5           | 94.5              | 0.12                 | 20                  | 2500  |
| 50          | 10      | 5x5.8             | 5                 | 0.10                 | 120                 | 750   |
|             | 22      | 6.3x5.8           | 11                | 0.10                 | 80                  | 1100  |
|             | 33      | 6.3x7.7           | 16.5              | 0.10                 | 40                  | 1600  |
|             | 68      | 8x10.5            | 34                | 0.10                 | 30                  | 1800  |
|             | 100     | 10x10.5           | 50                | 0.10                 | 28                  | 2000  |
| 63          | 10      | 6.3x5.8           | 6.3               | 0.08                 | 120                 | 1000  |
|             | 22      | 6.3x7.7           | 13.9              | 0.08                 | 80                  | 1500  |
|             | 33      | 8x10.5            | 20.8              | 0.08                 | 40                  | 1700  |
|             | 56      | 10x10.5           | 35.3              | 0.08                 | 30                  | 1800  |
| 80          | 22      | 8x10.5            | 17.6              | 0.08                 | 45                  | 1550  |
|             | 33      | 10x10.5           | 26.4              | 0.08                 | 36                  | 1700  |

Ripple Current(mA,rms)at 105°C, 100KHz