

## SX 7mm height Series

- Features : 105°C 1000 hours , 7.0/9.0mm height
- Recommended Applications : For Portable Micro Computer , Disk Driver , Small Calculator and Audio equipment...etc
- Corresponding product to RoHS

**SX**

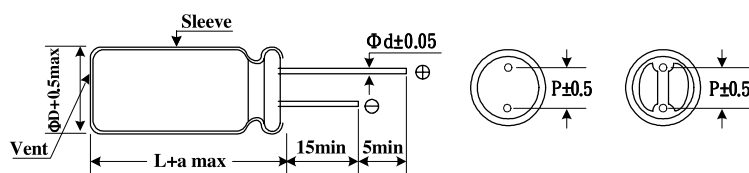
▲ High Temperature SS



### Specifications

| Item                                               | Characteristics                                                                                                            |      |                                           |      |      |      |      |      |      |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------|------|-------------------------------------------|------|------|------|------|------|------|
| Operating Temperature Range                        | -40 ~ +105℃                                                                                                                |      |                                           |      |      |      |      |      |      |
| Rated Voltage Range                                | 4 ~ 63VDC                                                                                                                  |      |                                           |      |      |      |      |      |      |
| Rated Capacitance Range                            | 0.1 ~ 470μF                                                                                                                |      |                                           |      |      |      |      |      |      |
| Capacitance Tolerance                              | ± 20 % at 120Hz , 20℃                                                                                                      |      |                                           |      |      |      |      |      |      |
| Leakage Current (MAX) (20℃)                        | I=0.01CV or 3(μA) , whichever is greater. (After rated voltage applied for 2 minutes )                                     |      |                                           |      |      |      |      |      |      |
| Dissipation Factor (MAX)<br>(tan δ ) (120Hz ,20℃)  | WV                                                                                                                         | 4    | 6.3                                       | 10   | 16   | 25   | 35   | 50   | 63   |
|                                                    | tan δ                                                                                                                      | 0.35 | 0.24                                      | 0.20 | 0.17 | 0.15 | 0.12 | 0.10 | 0.08 |
| Low Temperature Stability<br>Impedance Ratio (MAX) | <div><div></div>WV<br/>Z(120Hz)</div>                                                                                      | 4    | 6.3                                       | 10   | 16   | 25   | 35   | 50   | 63   |
|                                                    | Z-25℃ / Z+20℃                                                                                                              | 6    | 4                                         | 3    | 2    | 2    | 2    | 2    | 2    |
|                                                    | Z-40℃ / Z+20℃                                                                                                              | 12   | 8                                         | 6    | 4    | 4    | 3    | 3    | 3    |
| Endurance                                          | After applying rated voltage for 1000 hours at 105℃<br>the capacitors shall meet the following requirements.               |      |                                           |      |      |      |      |      |      |
|                                                    | Capacitance Change                                                                                                         |      | Within ± 20 % of initial value            |      |      |      |      |      |      |
|                                                    | Dissipation Factor                                                                                                         |      | Not more than 200% of the specified value |      |      |      |      |      |      |
|                                                    | Leakage Current                                                                                                            |      | initial specified value or less           |      |      |      |      |      |      |
| Shelf Life                                         | After placed at 105℃without voltage applied for 500 hours,<br>the capacitors shall meet the same requirement as Endurance. |      |                                           |      |      |      |      |      |      |

### Diagram of Dimensions



|     |      |      |      |     |
|-----|------|------|------|-----|
| φ D | 4.0  | 5.0  | 6.3  | 8.0 |
| P   | 1.5  | 2.0  | 2.5  | 3.5 |
| φ d | 0.45 | 0.45 | 0.45 | 0.5 |
| a   | 1.0  | 1.0  | 1.0  | 1.0 |

### Multiplier for Ripple Current

Frequency coefficient

| Frequency (Hz) | 50   | 120  | 300  | 1K   | 10K  |
|----------------|------|------|------|------|------|
| 0.1~47µF       | 0.75 | 1.00 | 1.20 | 1.30 | 1.50 |
| 100~330µF      | 0.75 | 1.00 | 1.10 | 1.15 | 1.20 |

Temperature coefficient

| Ambient Temperature (°C) | ≤ 50 | 70   | 85   | 105  |
|--------------------------|------|------|------|------|
| Coefficient              | 1.90 | 1.75 | 1.40 | 1.00 |

**SX** 7mm height  
Series

■ **Dimensions, Rated Ripple Current**

| Capacitance<br>( $\mu$ F) | Rated (Surge) Voltage |        |         |        |         |        |         |        |         |        |         |        |         |        |         |        |
|---------------------------|-----------------------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|
|                           | 4 (5)                 |        | 6.3 (8) |        | 10 (13) |        | 16 (20) |        | 25 (32) |        | 35 (44) |        | 50 (63) |        | 63 (79) |        |
|                           | Size                  | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple | Size    | Ripple |
| 0.1                       |                       |        |         |        |         |        |         |        |         |        |         |        | 4x7     | 1      | 4x7     | 1      |
| 0.22                      |                       |        |         |        |         |        |         |        |         |        |         |        | 4x7     | 2      | 4x7     | 2      |
| 0.33                      |                       |        |         |        |         |        |         |        |         |        |         |        | 4x7     | 3      | 4x7     | 4      |
| 0.47                      |                       |        |         |        |         |        |         |        |         |        |         |        | 4x7     | 5      | 4x7     | 6      |
| 0.68                      |                       |        |         |        |         |        |         |        |         |        |         |        | 4x7     | 6      |         |        |
| 1.0                       |                       |        |         |        |         |        |         |        |         |        |         |        | 4x7     | 10     | 4x7     | 13     |
| 2.2                       |                       |        |         |        |         |        | 4x7     | 7      |         |        |         |        | 4x7     | 19     | 4x7     | 21     |
| 3.3                       |                       |        |         |        |         |        | 4x7     | 13     |         |        |         |        | 4x7     | 24     | 4x7     | 26     |
| 4.7                       |                       |        |         |        |         |        | 4x7     | 19     | 4x7     | 24     | 4x7     | 24     | 4x7     | 29     | 4x7     | 26     |
|                           |                       |        |         |        |         |        |         |        |         |        | 5x7     | 24     | 5x7     | 31     | 6.3x7   | 33     |
| 10                        |                       |        |         |        |         |        | 4x7     | 29     | 4x7     | 33     | 4x7     | 34     | 4x7     | 37     | 5x7     | 42     |
|                           |                       |        |         |        |         |        |         |        | 5x7     | 35     | 5x7     | 36     | 5x7     | 45     | 6.3x7   | 50     |
|                           |                       |        |         |        |         |        |         |        | 6.3x7   | 35     |         |        | 6.3x7   | 45     |         |        |
| 22                        |                       |        | 4x7     | 37     | 4x7     | 31     | 4x7     | 36     | 4x7     | 43     | 5x7     | 48     | 6.3x7   | 65     |         |        |
|                           |                       |        |         |        | 5x7     | 38     | 5x7     | 44     | 5x7     | 51     | 6.3x7   | 57     |         |        |         |        |
|                           |                       |        |         |        |         |        |         |        | 6.3x7   | 53     |         |        |         |        |         |        |
| 33                        | 4X7                   | 30     | 5x7     | 42     | 4x7     | 39     | 4x7     | 50     | 5x7     | 55     | 6.3x7   | 70     |         |        |         |        |
|                           |                       |        |         |        | 5x7     | 47     | 5x7     | 57     | 6.3x7   | 65     |         |        |         |        |         |        |
| 47                        | 4X7                   | 35     | 4x7     | 46     | 4x7     | 50     | 5x7     | 75     | 5x7     | 67     | 6.3x7   | 81     |         |        |         |        |
|                           |                       |        | 5x7     | 55     | 5x7     | 60     | 6.3x7   | 77     | 6.3x7   | 79     |         |        |         |        |         |        |
|                           |                       |        |         |        | 6.3x7   | 60     |         |        |         |        |         |        |         |        |         |        |
| 68                        |                       |        |         |        |         |        | 5x7     | 84     |         |        |         |        |         |        |         |        |
| 100                       | 5X7                   | 55     | 5x7     | 75     | 5x7     | 85     | 5x7     | 94     | 6.3x7   | 120    |         |        |         |        |         |        |
|                           |                       |        | 6.3x7   | 90     | 6.3x7   | 100    | 6.3x7   | 110    | 8x7     | 120    |         |        |         |        |         |        |
| 150                       |                       |        |         |        |         |        | 6.3x7   | 120    |         |        |         |        |         |        |         |        |
| 220                       | 6.3X7                 | 95     | 6.3x7   | 130    | 6.3x7   | 135    | 8x7     | 140    |         |        |         |        |         |        |         |        |
|                           |                       |        |         |        |         |        | 8x9     | 140    |         |        |         |        |         |        |         |        |
| 330                       |                       |        | 8x7     | 140    |         |        | 8x9     | 155    |         |        |         |        |         |        |         |        |
| 470                       |                       |        |         |        | 8x9     | 165    |         |        |         |        |         |        |         |        |         |        |

☆ Size: D  $\phi$  x L (mm)    ☆ Ripple Current: (mA/rms), 105°C, 120Hz