

特点 Features

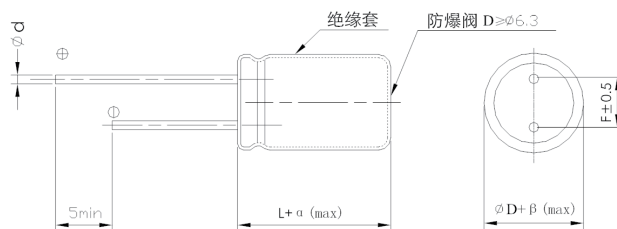
- 低阻抗, 9 mm高度, 105°C 2000-4000小时。
Low impedance, with 9mm height, 105°C 2000-4000hours.
- 符合RoHS标准。
Adapted to the RoHS directive.



主要技术性能 Specifications

| 项目 Items | 特性 Performance Characteristics | | | | | | | | | | | | | | | | | | | | | | | | |
|--|---|-----------|-------|------|------|-----------|-------|--------|-------|-----------------|------|------|------|------|------|---|---|-----------------|---|---|---|---|---|---|---|
| 使用温度范围 Operating Temperature Range | -55~+105°C | | | | | | | | | | | | | | | | | | | | | | | | |
| 额定电压范围 Rated Voltage Range | 6.3~100 V | | | | | | | | | | | | | | | | | | | | | | | | |
| 标称容量范围 Nominal Capacitance Range | 4.7~1000μF | | | | | | | | | | | | | | | | | | | | | | | | |
| 标称容量允许偏差 Capacitance Tolerance | ± 20% (120Hz, +20°C) | | | | | | | | | | | | | | | | | | | | | | | | |
| 漏电流 Leakage Current | $I \leq 0.01CV$ or $3(\mu A)$ 2分钟(at 20°C, after 2 minutes) 取较大者 (whichever is greater) | | | | | | | | | | | | | | | | | | | | | | | | |
| 损耗角正切值 (tgδ) Dissipation Factor (+20°C, 120Hz) | <table border="1"> <thead> <tr> <th>U_R (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50-100</th> </tr> </thead> <tbody> <tr> <td>tgδ</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </tbody> </table> | U_R (V) | 6.3 | 10 | 16 | 25 | 35 | 50-100 | tgδ | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | | | | | | | | | | |
| U_R (V) | 6.3 | 10 | 16 | 25 | 35 | 50-100 | | | | | | | | | | | | | | | | | | | |
| tgδ | 0.22 | 0.19 | 0.16 | 0.14 | 0.12 | 0.10 | | | | | | | | | | | | | | | | | | | |
| 温度特性 Temperature Characteristics (Impedance ratio at 120Hz) | <table border="1"> <thead> <tr> <th>U_R (V)</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Z-25°C / Z+20°C</td> <td>4</td> <td>3</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>8</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table> | U_R (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 100 | Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | Z-40°C / Z+20°C | 8 | 6 | 4 | 3 | 3 | 3 | 3 |
| U_R (V) | 6.3 | 10 | 16 | 25 | 35 | 50 | 100 | | | | | | | | | | | | | | | | | | |
| Z-25°C / Z+20°C | 4 | 3 | 2 | 2 | 2 | 2 | 2 | | | | | | | | | | | | | | | | | | |
| Z-40°C / Z+20°C | 8 | 6 | 4 | 3 | 3 | 3 | 3 | | | | | | | | | | | | | | | | | | |
| 耐久性 Load Life | <table border="1"> <thead> <tr> <th>D</th> <th>5-6.3</th> <th>8</th> <th>10</th> </tr> </thead> <tbody> <tr> <td>Load life</td> <td>2000h</td> <td>3000h</td> <td>4000h</td> </tr> </tbody> </table> <p>+105°C加额定电压, 恢复16小时后: After applying rated voltage at 105°C and then resumed for 16 hours: 容量变化率 Capacitance change: ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current: ≤初始规定值 ≤the initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值数 ≤2times of the initial specified value</p> | D | 5-6.3 | 8 | 10 | Load life | 2000h | 3000h | 4000h | | | | | | | | | | | | | | | | |
| D | 5-6.3 | 8 | 10 | | | | | | | | | | | | | | | | | | | | | | |
| Load life | 2000h | 3000h | 4000h | | | | | | | | | | | | | | | | | | | | | | |
| 高温贮存 Shelf Life | <p>+105°C, 1000小时贮存后, 恢复16小时后: After storage for 1000 hours at +105°C then resumed for 16 hours: 容量变化率 Capacitance change: ±25%初始测量值以内 ±25% of the initial measured value 漏电流 Leakage current: ≤2倍初始规定值 ≤2times of the initial specified value 损耗角正切值 Dissipation factor: ≤2倍初始规定值数 ≤2times of the initial specified value</p> | | | | | | | | | | | | | | | | | | | | | | | | |

外形图及尺寸表 Case Size Table



单位 Unit: mm

| ØD | 5 | 6.3 | 8 | 10 |
|--------|-----|-----|-----|-----|
| F | 2.0 | 2.5 | 3.5 | 5.0 |
| d | 0.5 | | | 0.6 |
| α(max) | 1.5 | | | |
| β(max) | 0.5 | | | |

频率修正系数 Frequency Coefficient

| Freq.(Hz) | 120 | 1K | 10K | 100K |
|-----------|-----|------|------|------|
| CAP(μF) | | | | |
| ~180 | 0.4 | 0.75 | 0.90 | 1 |
| 220~560 | 0.5 | 0.85 | 0.94 | 1 |
| 560~1000 | 0.6 | 0.87 | 0.95 | 1 |

尺寸 Dimensions

| CAP(μF) | | WV | 6.3V(0J) | | | 10V(1A) | | | 16V(1C) | | |
|---------|-----|----|----------|------|--------|---------|------|--------|---------|------|--------|
| | | | Size | ESR | Ripple | Size | ESR | Ripple | Size | ESR | Ripple |
| 68 | 680 | | | | | | | 5×9 | 0.65 | 0.65 | |
| 100 | 101 | | 5×9 | 0.65 | 150 | 5×9 | 0.65 | 220 | 5×9 | 0.60 | |
| 150 | 151 | | 5×9 | 0.60 | 220 | 6.3×9 | 0.50 | 280 | 6.3×9 | 0.50 | |
| 220 | 221 | | 6.3×9 | 0.40 | 350 | 6.3×9 | 0.40 | 380 | 6.3×9 | 0.45 | |
| 330 | 331 | | 6.3×9 | 0.35 | 380 | 6.3×9 | 0.35 | 405 | | | |
| 470 | 471 | | 6.3×9 | 0.25 | 405 | 8×9 | 0.30 | 550 | 8×9 | 0.40 | |
| | | | 8×9 | 0.19 | 500 | | | | 10×9 | 0.35 | |
| 560 | 561 | | 8×9 | 0.18 | 550 | 8×9 | 0.30 | 550 | 10×9 | 0.30 | |
| 680 | 681 | | 8×9 | 0.15 | 760 | 10×9 | 0.25 | 820 | | | |
| | | | 10×9 | 0.13 | 820 | | | | | | |
| 820 | 821 | | 10×9 | 0.12 | 850 | 10×9 | 0.20 | 970 | | | |
| 1000 | 102 | | 10×9 | 0.11 | 970 | | | | | | |

| CAP(μF) | | WV | 25V(1E) | | | 35V(1V) | | | 50V(1H) | | |
|---------|-----|----|---------|------|--------|---------|------|--------|---------|------|--------|
| | | | Size | ESR | Ripple | Size | ESR | Ripple | Size | ESR | Ripple |
| 15 | 150 | | | | | | | 5×9 | 0.55 | 100 | |
| 22 | 220 | | | | | | | 5×9 | 0.55 | 120 | |
| 33 | 330 | | 5×9 | 0.65 | 120 | 5×9 | 0.55 | 120 | 6.3×9 | 0.40 | |
| 47 | 470 | | 5×9 | 0.60 | 150 | 5×9 | 0.55 | 150 | 6.3×9 | 0.35 | |
| 68 | 680 | | 5×9 | 0.50 | 150 | 6.3×9 | 0.50 | 350 | 8×9 | 0.30 | |
| 100 | 101 | | | | | 8×9 | 0.45 | 550 | 8×9 | 0.25 | |
| 150 | 151 | | 6.3×9 | 0.35 | 380 | 8×9 | 0.40 | 550 | 10×9 | 0.20 | |
| 220 | 221 | | 8×9 | 0.25 | 550 | 10×9 | 0.35 | 820 | | | |
| 330 | 331 | | 8×9 | 0.20 | 610 | | | | | | |
| 470 | 471 | | 10×9 | 0.15 | 970 | | | | | | |

| CAP(μF) | | WV | 63V(1J) | | | 100V(2A) | | |
|---------|-----|----|---------|------|--------|----------|------|--------|
| | | | Size | ESR | Ripple | Size | ESR | Ripple |
| 4.7 | 4R7 | | | | | 5×9 | 2.5 | 80 |
| 6.8 | 6R8 | | | | | 5×9 | 2.5 | 90 |
| 10 | 100 | | 5×9 | 1.7 | 100 | 6.3×9 | 1.7 | 105 |
| 15 | 150 | | 5×9 | 1.7 | 120 | 6.3×9 | 1.7 | 120 |
| 22 | 220 | | 5×9 | 1.2 | 150 | 8×9 | 1.2 | 300 |
| 33 | 330 | | 6.3×9 | 0.55 | 220 | 8×9 | 1.0 | 322 |
| 47 | 470 | | 6.3×9 | 0.55 | 300 | 10×9 | 0.55 | 455 |
| 68 | 680 | | 8×9 | 0.25 | 500 | | | |
| 100 | 101 | | 10×9 | 0.20 | 760 | | | |

Size φD×L(mm)
 Maximum Allowable Ripple Current (mA rms) at 105°C 100KHz
 Maximum ESR (Ω) at 20°C 100KHz

Product symbol system for Aluminum Electrolytic Capacitors



① Series

Series is represented by a two-letter code. For example "SGR".

② Voltage

Voltage in volts(V) is represented by a one-digit and one-letter code.
Example:

| | | | | | | | | | | | |
|------------|-----|----|-----|----|----|----|----|----|----|----|-----|
| Voltage(V) | 2.5 | 4 | 6.3 | 10 | 16 | 25 | 35 | 50 | 63 | 80 | 100 |
| Code | 0E | 0G | 0J | 1A | 1C | 1E | 1V | 1H | 1J | 1K | 2A |

| | | | | | | | | | | |
|------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Voltage(V) | 160 | 200 | 250 | 315 | 350 | 400 | 420 | 450 | 500 | 550 |
| Code | 2C | 2D | 2E | 2F | 2V | 2G | 2M | 2W | 2H | 2L |

③ Capacitance

Capacitance in μF is represented by a three-digit code, the first two digits are significant and the third digit indicates the number of zeros following the significant figure. "R" represents the decimal point for capacitance under $10\mu\text{F}$.

Example:

| | | | | | | | | | | | |
|------------------------------|-----|------|-----|-----|-----|-----|-----|-----|------|------|-------|
| Capacitance(μF) | 0.1 | 0.47 | 1 | 4.7 | 10 | 47 | 100 | 470 | 1000 | 4700 | 10000 |
| Code | 0R1 | R47 | 010 | 4R7 | 100 | 470 | 101 | 471 | 102 | 472 | 103 |

④ Tolerance

Tolerance is represented by a one-letter code.

Example:

| | | | | | | | | | | | |
|--------------|-------|---------|---------|---------|--------|--------|---------|--------|---------|---------|---------|
| Tolerance(%) | -5~+5 | -10~+10 | -15~+15 | -20~+20 | -0~+20 | -5~+20 | -10~+20 | -0~+30 | +10~+30 | -10~+30 | -15~+20 |
| Code | J | K | Y | M | R | H | V | F | G | Q | E |

⑤ Size code

Size code is represented by a one-letter and three-digit code. The first one-letter indicates case diameter in mm. The last three digits indicate case length in mm. When the height of a product exceeds 100mm, if the last digit is 0, it is represented by A, otherwise, it is represented by B.

Example:

| | | | | | | | | | | | | | | | | | | | |
|----------------|---|---|-----|---|----|----|------|----|----|----|----|----|----|----|----|----|----|------|----|
| ΦD | 4 | 5 | 6.3 | 8 | 10 | 12 | 12.5 | 13 | 16 | 18 | 20 | 22 | 25 | 30 | 35 | 40 | 50 | 63.5 | 89 |
| Code | B | C | E | F | G | H | I | J | L | M | O | P | Q | R | S | T | U | W | Y |

| | | | | | | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| L | 5 | 5.4 | 9 | 10 | 11 | 11.5 | 12 | 14 | 16 | 20 | 25 | 50 | 100 | 105 | 110 | 115 | 120 | 200 | 205 |
| Code | 050 | 054 | 090 | 100 | 110 | 115 | 120 | 140 | 160 | 200 | 250 | 500 | 10A | 10B | 11A | 11B | 12A | 20A | 20B |

Note: When a case size is required and not shown in the table, please contact with us for further discussion.

⑥ Terminal Code

Terminal Code is represented by a combination of letters or numbers

SMD Type terminal code (please refer to page 11)

Radial type terminal code (please refer to page 12~15)

Snap-in Type and Screw Type terminal code (please refer to page 16~17)

Note: When a terminal code is required and not shown in the table, please contact with us for further discussion.

⑦ Brand

The Surge trademark is represented by the letter "S".

⑧ Sleeve

The sleeve material is represented by the letter E for PET and V for PVC.

⑨ Other

It is represented by a letter or number for rubber shape or other information.

⑩ Supplement Code

For special control purposes.

For example: SGR 16V 2200 μF 20% 12.5 \times 25 taping F=5.0 Brand: Surge PVC Sleeve

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| S | G | R | 1 | C | 2 | 2 | 2 | M | I | 2 | 5 | 0 | B | 5 | 0 | S | V | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

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