

The SVPS series is designed to have a longer life span than the SVP series. Recommended for products such as flat-screen TVs where extended life performance would be beneficial. Lead free-reflow is supported.*2

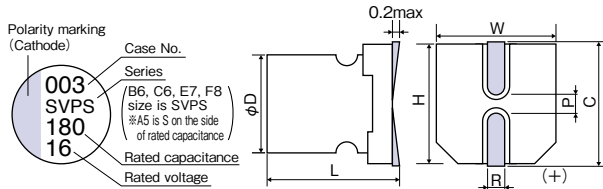


Specifications

| Items | | Condition | | Specifications | | | | | |
|--|--|--|---------------------|---|-----|----|----|----|----|
| Rated voltage (V) | (V) | - | | 4.0 | 6.3 | 10 | 16 | 20 | 25 |
| Surge voltage (V) | (V) | Room temperature | | 5.2 | 8.2 | 12 | 18 | 23 | 25 |
| Category temperature range (°C) | (°C) | - | | -55 to +105 | | | | | |
| Capacitance tolerance (%) | (%) | 120Hz/20°C | | M : ±20 | | | | | |
| Dissipation Factor (DF) | (DF) | 120Hz/20°C | | Please see the attached characteristics list | | | | | |
| Leakage current*1 | (I _l) | Rated voltage applied, after 2 minutes | | Please see the attached characteristics list | | | | | |
| Equivalent series resistance (ESR) | (ESR) | 100kHz to 300kHz/20°C | | Please see the attached characteristics list | | | | | |
| Characteristics of impedance ratio at high temp. and low temp. | Based the value at 100kHz, +20°C | -55°C | Z/Z _{20°C} | 0.75 to 1.25 | | | | | |
| | | +105°C | Z/Z _{20°C} | 0.75 to 1.25 | | | | | |
| Endurance | 105°C, 5,000h, Rated voltage applied (25V → 20V applied) | ΔC/C | | Within ±20% of the initial value | | | | | |
| | | DF | | Within 1.5 times of the initial limit | | | | | |
| | | ESR | | Within 1.5 times of the initial limit | | | | | |
| | | LC | | Within the initial limit | | | | | |
| Damp heat(Steady state) | 60°C, 90 to 95% RH, 1,000h, No-applied voltage | ΔC/C | | Within ±20% of the initial value | | | | | |
| | | DF | | Within 1.5 times of the initial limit | | | | | |
| | | ESR | | Within 1.5 times of the initial limit | | | | | |
| | | LC | | Within the initial limit (after voltage processing) | | | | | |
| Resistance to soldering heat*2 | VPS (230°C X 75s) | ΔC/C | | Within ±10% of the initial value | | | | | |
| | | DF | | Within 1.3 times of the initial limit | | | | | |
| | | ESR | | Within 1.3 times of the initial limit | | | | | |
| | | LC | | Within the initial limit (after voltage processing) | | | | | |

*1 When measured values are questionable, measure after voltage processing mentioned below.
Voltage processing: Apply voltage for 120 minutes at 105°C. The voltage to be applied is the rated voltage for 4.0-20V products, and 20V for 25V products.
*2 Please refer to page 14 for reflow soldering conditions.

Marking and dimensions



(unit : mm)

| Size code | φD ±0.5 | L ^{+0.1} / _{-0.4} | W ±0.2 | H ±0.2 | C ±0.2 | R | P ±0.2 |
|-----------|---------|-------------------------------------|--------|--------|--------|------------|--------|
| A5 | 4.0 | 5.4 | 4.3 | 4.3 | 5.0 | 0.6 to 0.8 | 1.0 |
| B6 | 5.0 | 5.9 | 5.3 | 5.3 | 6.0 | 0.6 to 0.8 | 1.4 |
| C6 | 6.3 | 5.9 | 6.6 | 6.6 | 7.3 | 0.6 to 0.8 | 2.1 |
| E7 | 8.0 | 6.9 | 8.3 | 8.3 | 9.0 | 0.6 to 0.8 | 3.2 |
| F8 | 10.0 | 7.9 | 10.3 | 10.3 | 11.0 | 0.6 to 0.8 | 4.6 |

Size list

RV : Rated voltage

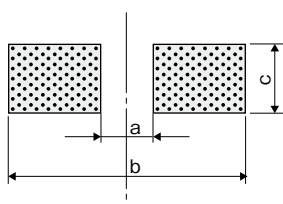
| μF | RV | 4.0 | 6.3 | 10 | 16 | 20 | 25 |
|-----|----|-----|-----|--------|----|----|----|
| 10 | | | | A5 | | | E7 |
| 15 | | | | A5 | | | |
| 22 | | | A5 | | B6 | C6 | |
| 33 | A5 | | | B6 | | | |
| 39 | | | | | C6 | | |
| 47 | | | B6 | | | E7 | |
| 68 | B6 | | | C6 | | | |
| 82 | | | | | E7 | | |
| 100 | | | | | F8 | | |
| 120 | | | C6 | | | | |
| 150 | C6 | | | E7, F8 | | | |
| 180 | | | | | F8 | | |
| 220 | | | E7 | | | | |
| 270 | E7 | | | | | | |
| 330 | | | | F8 | | | |
| 470 | | | F8 | | | | |
| 680 | F8 | | | | | | |

SVPS series characteristics list

| Size code | Part number | Rated voltage (V) | Rated capacitance (μ F) | ESR(m Ω) (max) 100kHz to 300kHz / 20 $^{\circ}$ C | Allowable ripple current 100kHz(mArms)*1 | DF (% max) | Leakage current (μ A)(max) After 2 minutes |
|-----------|-------------|-------------------|------------------------------|---|--|------------|---|
| A5 | 10SVPS10M | 10 | 10 | 220 | 700 | 10 | 50 |
| | 10SVPS15M | 10 | 15 | 200 | 740 | 10 | 75 |
| | 6SVPS22M | 6.3 | 22 | 200 | 740 | 12 | 69.3 |
| | 4SVPS33M | 4.0 | 33 | 200 | 740 | 15 | 66 |
| B6 | 16SVPS22M | 16 | 22 | 90 | 1060 | 10 | 176 |
| | 10SVPS33M | 10 | 33 | 70 | 1100 | 12 | 165 |
| | 6SVPS47M | 6.3 | 47 | 30 | 1970 | 12 | 300 |
| | 4SVPS68M | 4.0 | 68 | 30 | 1970 | 12 | 300 |
| C6 | 20SVPS22M | 20 | 22 | 60 | 1450 | 10 | 88 |
| | 16SVPS39M | 16 | 39 | 24 | 2460 | 12 | 300 |
| | 10SVPS68M | 10 | 68 | 30 | 2200 | 12 | 300 |
| | 6SVPS120M | 6.3 | 120 | 22 | 2570 | 12 | 300 |
| | 4SVPS150M | 4.0 | 150 | 22 | 2570 | 12 | 300 |
| E7 | 25SVPS10M | 25 | 10 | 60 | 1500 | 10 | 125 |
| | 20SVPS47M | 20 | 47 | 45 | 1890 | 12 | 188 |
| | 16SVPS82M | 16 | 82 | 30 | 2760 | 12 | 262 |
| | 10SVPS150MX | 10 | 150 | 30 | 2760 | 12 | 500 |
| | 6SVPS220M | 6.3 | 220 | 22 | 3220 | 12 | 500 |
| | 4SVPS270M | 4.0 | 270 | 22 | 3220 | 12 | 500 |
| F8 | 16SVPS100M | 16 | 100 | 35 | 2670 | 12 | 320 |
| | 16SVPS180M | 16 | 180 | 29 | 3430 | 12 | 576 |
| | 10SVPS150M | 10 | 150 | 30 | 3020 | 12 | 300 |
| | 10SVPS330M | 10 | 330 | 24 | 3770 | 12 | 660 |
| | 6SVPS470M | 6.3 | 470 | 20 | 4130 | 12 | 592 |
| | 4SVPS680M | 4.0 | 680 | 20 | 4130 | 12 | 544 |

*1 The surface temperature of aluminum case top must not exceed 105 $^{\circ}$ C. A rise in temperature due to self-heating by ripple current should be factored in.

Recommended land pattern dimension of PWB



(unit : mm)

| Size code | a | b | c |
|-----------|-----|------|-----|
| A5 | 1.0 | 6.2 | 1.6 |
| B6 | 1.4 | 7.4 | 1.6 |
| C6 | 2.1 | 9.1 | 1.6 |
| E7 | 2.8 | 11.1 | 1.9 |
| F8 | 4.3 | 13.1 | 1.9 |

Frequency coefficient for ripple current

| Frequency | 120Hz \leq f < 1kHz | 1kHz \leq f < 10kHz | 10kHz \leq f < 100kHz | 100kHz \leq f \leq 500kHz |
|-------------|-----------------------|-----------------------|-------------------------|-------------------------------|
| Coefficient | 0.05 | 0.3 | 0.7 | 1 |