

SVPS Series

Long Life

The SVPS series has longer lifespan than the SVP series. They are a good choice to extend the life of flat panel television sets and others.

Lead free-reflow is supported.(※2).



Specifications

| Items | Conditions | Characteristics | | |
|--|--|---|--|--------------|
| Category temperature range | — | -55°C to +105°C | | |
| Tolerance on rated capacitance | 120Hz | M : ±20% | | |
| Tangent of loss angle | 120Hz | Less than or equal to the value of Table1 | | |
| Leakage current ※1 | After 2 minutes | Less than or equal to the value of Table1 | | |
| ESR | — | Less than or equal to the value of Table1 | | |
| 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% | |
| | | tanδ | 1.5 times or less than an initial standard | |
| | | ESR | 1.5 times or less than an initial standard | |
| | | Leakage current | Below an initial standard | |
| Damp heat (Steady state) | 60°C, 90 to 95% RH, 1,000h, No-applied voltage | ΔC/C | Within ±20% | |
| | | tanδ | 1.5 times or less than an initial standard | |
| | | ESR | 1.5 times or less than an initial standard | |
| | | Leakage current | Below an initial standard (after voltage processing) | |
| Resistance to soldering heat ※2 | (VPS) (230°C X 75s) | ΔC/C | Within ±10% | |
| | | tanδ | 1.3 times or less than an initial standard | |
| | | ESR | 1.3 times or less than an initial standard | |
| | | Leakage current | Below an initial standard (after voltage processing) | |

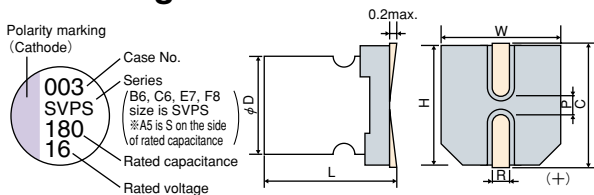
※1 When measured values are questionable, measure after voltage processing mentioned below.

Voltage processing: Apply voltage for 120 minutes at 105°C. The voltage to be applied is the rated voltage for 4-20V products, and 20V for 25V products.

※2 Refer to P14-15 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 (SV) : Surge (room temperature)

| μF | RV (SV) | 4 (5.2) | 6.3 (8.2) | 10 (11.5) | 16 (18.4) | 20 (23) | 25 (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 | | | | | |

※For the minimum packing quantity, please refer to page 55.

■Table1 SVPS Series Characteristics List

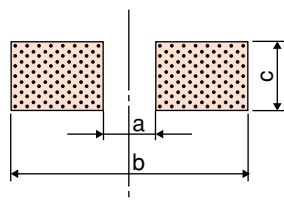
| Size Code | Part Number ※1 | Rated Voltage (V) | Rated Capacitance (μF) | ESR 100kHz to 300kHz (mΩ) (max.) | Allowable ripple current 100kHz(mArms)※3 | Tangent of loss angle (max.) | Leakage current (μA) (max.)※2 |
|-----------|-------------------|-------------------|------------------------|----------------------------------|--|------------------------------|-------------------------------|
| A5 | 10SVPS10M | 10 | 10 | 220 | 700 | 0.10 | 50 |
| | 10SVPS15M | 10 | 15 | 200 | 740 | 0.10 | 75 |
| | 6SVPS22M | 6.3 | 22 | 200 | 740 | 0.12 | 69.3 |
| | 4SVPS33M | 4 | 33 | 200 | 740 | 0.15 | 66 |
| B6 | 16SVPS22M | 16 | 22 | 90 | 1060 | 0.10 | 176 |
| | 10SVPS33M | 10 | 33 | 70 | 1100 | 0.12 | 165 |
| | 6SVPS47M | 6.3 | 47 | 30 | 1970 | 0.12 | 300 |
| | 4SVPS68M | 4 | 68 | 30 | 1970 | 0.12 | 300 |
| C6 | 20SVPS22M | 20 | 22 | 60 | 1450 | 0.10 | 88 |
| | 16SVPS39M | 16 | 39 | 24 | 2460 | 0.12 | 300 |
| | 10SVPS68M | 10 | 68 | 30 | 2200 | 0.12 | 300 |
| | 6SVPS120M | 6.3 | 120 | 22 | 2570 | 0.12 | 300 |
| | 4SVPS150M | 4 | 150 | 22 | 2570 | 0.12 | 300 |
| E7 | 25SVPS10M | 25 | 10 | 60 | 1500 | 0.10 | 125 |
| | 20SVPS47M | 20 | 47 | 45 | 1890 | 0.12 | 188 |
| | 16SVPS82M | 16 | 82 | 30 | 2760 | 0.12 | 262 |
| | 10SVPS150MX | 10 | 150 | 30 | 2760 | 0.12 | 500 |
| | 6SVPS220M | 6.3 | 220 | 22 | 3220 | 0.12 | 500 |
| | 4SVPS270M | 4 | 270 | 22 | 3220 | 0.12 | 500 |
| F8 | 16SVPS100M | 16 | 100 | 35 | 2670 | 0.12 | 320 |
| | 16SVPS180M | 16 | 180 | 29 | 3430 | 0.12 | 576 |
| | 10SVPS150M | 10 | 150 | 30 | 3020 | 0.12 | 300 |
| | 10SVPS330M | 10 | 330 | 24 | 3770 | 0.12 | 660 |
| | 6SVPS470M | 6.3 | 470 | 20 | 4130 | 0.12 | 592 |
| | 4SVPS680M | 4 | 680 | 20 | 4130 | 0.12 | 544 |

※1 Capacitance tolerance : M ±20%

※2 After 2 minutes

※3 The surface temperature of aluminum case top must not exceed 105°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 ≤ f < 1kHz | 1kHz ≤ f < 10kHz | 10kHz ≤ f < 100kHz | 100kHz ≤ f ≤ 500kHz |
|-------------|------------------|------------------|--------------------|---------------------|
| Coefficient | 0.05 | 0.3 | 0.7 | 1 |