

## IV. SPECIFICATIONS FOR EACH SERIES

Conductive polymer type

**SVP** Series Standard SMD type

Standard SMD type product

Use for surface mounted type switching power supplies.

This product can support lead free-reflow. (※2).



Marking : Polarity(⊖), Rated voltage, Lot.No.  
(Purple) SVP(Upper E7), Rated capacitance.

## ■ Specifications

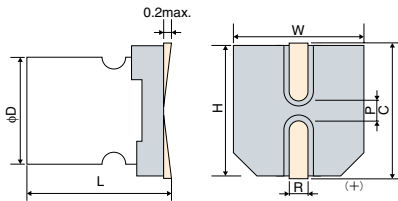
| Items                                                          | Conditions                                             | Characteristics                           |                                                      |              |
|----------------------------------------------------------------|--------------------------------------------------------|-------------------------------------------|------------------------------------------------------|--------------|
| 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 Table7 |                                                      |              |
| Leakage current ※1                                             | After 2 minutes                                        | Less than or equal to the value of Table7 |                                                      |              |
| ESR                                                            | —                                                      | Less than or equal to the value of Table7 |                                                      |              |
| 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 |
|                                                                |                                                        | ΔC/C                                      | Within ±20%                                          |              |
|                                                                |                                                        | tanδ                                      | 1.5 times or less than an initial standard           |              |
| Endurance                                                      | 105°C, 2,000h, Rated voltage applied (25V→20V applied) | ESR                                       | 1.5 times or less than an initial standard           |              |
|                                                                |                                                        | Leakage current                           | Below an initial standard                            |              |
|                                                                |                                                        | ΔC/C                                      | Within ±20%                                          |              |
|                                                                |                                                        | tanδ                                      | 1.5 times or less than an initial standard           |              |
| Damp heat (Steady state)                                       | 60°C, 90 to 95%RH, 1,000h, No-applied voltage          | ESR                                       | 1.5 times or less than an initial standard           |              |
|                                                                |                                                        | Leakage current                           | Below an initial standard (after voltage processing) |              |
|                                                                |                                                        | ΔC/C                                      | Within ±10%                                          |              |
|                                                                |                                                        | tanδ                                      | 1.3 times or less than an initial standard           |              |
| Resistance to soldering heat ※2                                | (VPS) (230°C X 75s)                                    | ESR                                       | 1.3 times or less than an initial standard           |              |
|                                                                |                                                        | Leakage current                           | Below an initial standard (after voltage processing) |              |
|                                                                |                                                        | ΔC/C                                      | Within ±10%                                          |              |

※1 In case of some problems for measured values, measure after applying rated voltage for 2.5 to 20V products or 20V for 25V products for 120 minutes at 105°C.

※2 Refer to Page 56 for reflow soldering conditions.

(unit : mm)

## ■ Dimensions



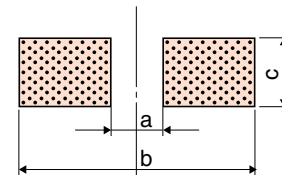
| Size Code | φD±0.5 | L <sup>+0.1</sup> <sub>-0.4</sub> | W±0.2 | H±0.2 | C±0.2 | R          | P±0.2 |
|-----------|--------|-----------------------------------|-------|-------|-------|------------|-------|
| A5        | 4.0    | 5.4                               | 4.3   | 4.3   | 5.0   | 0.6 to 0.8 | 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   |
| E12       | 8.0    | 11.9                              | 8.3   | 8.3   | 9.0   | 0.8 to 1.1 | 3.2   |
| F12       | 10.0   | 12.6                              | 10.3  | 10.3  | 11.0  | 0.8 to 1.1 | 4.6   |

## ■ Size List RV : Rated voltage (SV) : Surge (room temperature)

| μF   | RV (SV) | 2.5 (3.3) | 4 (5.2) | 6.3 (8.2) | 10 (11.5) | 16 (18.4) | 20 (23.0) | 25 (25.0) |
|------|---------|-----------|---------|-----------|-----------|-----------|-----------|-----------|
| 3.3  |         |           |         |           |           | A5        |           |           |
| 4.7  |         |           |         |           | A5        |           |           |           |
| 6.8  |         |           |         |           | A5        |           | B6        | C6        |
| 10   |         |           |         |           | A5        |           | B6        | E7        |
| 15   |         |           |         |           |           | B6        |           |           |
| 22   |         |           |         | A5        |           | B6        | C6        | F8        |
| 27   |         |           |         |           |           |           | C6        |           |
| 33   |         |           | A5      |           | B6        |           | E7        | E12       |
| 39   |         |           | B6      |           |           | C6        |           |           |
| 47   |         |           |         | B6        | C6        |           | E7        |           |
| 56   |         |           |         |           | C6        | E7        | F8        | F12       |
| 68   |         |           | B6      |           |           |           | F8        |           |
| 82   |         |           |         | C6        |           | E7        |           |           |
| 100  |         |           |         | C6        |           | F8        | E12       |           |
| 120  |         |           |         | C6        |           |           |           |           |
| 150  |         |           | C6, E7  |           | E7        | F8        | F12       |           |
| 180  |         |           |         |           | E7, F8    | F8, E12   |           |           |
| 220  |         | C6        |         | E7, F8    |           |           |           |           |
| 270  |         |           |         |           | F8        |           |           |           |
| 330  |         |           | E7      | F8        | F8, E12   | F12       |           |           |
| 470  |         |           |         | F8, E12   |           |           |           |           |
| 560  |         |           | E12     |           |           |           |           |           |
| 680  | E12     |           | F8      |           |           |           |           |           |
| 820  |         |           |         | F12       |           |           |           |           |
| 1200 |         |           | F12     |           |           |           |           |           |
| 1500 | F12     |           |         |           |           |           |           |           |

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

## ■ 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 |
| E12       | 2.8 | 11.1 | 1.9 |
| F12       | 4.3 | 13.1 | 1.9 |

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Table7 SVP Series Characteristics List

| Size Code | Part Number ※1 | Rated Voltage (V) | Rated Capacitance (μF) | ESR 100kHz to 300kHz (mΩ) (max.) | Rated ripple current (mA rms) | Tangent of loss angle (max.) | Leakage current (μA) (max.) ※2 |
|-----------|----------------|-------------------|------------------------|----------------------------------|-------------------------------|------------------------------|--------------------------------|
| A5        | 16SVP3R3M      | 16                | 3.3                    | 260                              | 660                           | 0.07                         | 26.4                           |
|           | 10SVP4R7M      | 10                | 4.7                    | 240                              | 670                           | 0.08                         | 23.5                           |
|           | 10SVP6R8M      | 10                | 6.8                    | 240                              | 670                           | 0.09                         | 34.0                           |
|           | 10SVP10M       | 10                | 10                     | 220                              | 700                           | 0.10                         | 50.0                           |
|           | 10SVP15M       | 10                | 15                     | 200                              | 740                           | 0.10                         | 75.0                           |
|           | 6SVP22M        | 6.3               | 22                     | 200                              | 740                           | 0.12                         | 69.3                           |
|           | 4SVP33M        | 4                 | 33                     | 200                              | 740                           | 0.15                         | 66.0                           |
| B6        | 20SVP10M       | 20                | 10                     | 120                              | 1020                          | 0.10                         | 100                            |
|           | 16SVP15M       | 16                | 15                     | 120                              | 1020                          | 0.10                         | 120                            |
|           | 16SVP22M       | 16                | 22                     | 90                               | 1060                          | 0.10                         | 176                            |
|           | 10SVP33M       | 10                | 33                     | 70                               | 1100                          | 0.12                         | 165                            |
|           | 6SVP47M        | 6.3               | 47                     | 70                               | 1100                          | 0.12                         | 148                            |
|           | 4SVP39M        | 4                 | 39                     | 70                               | 1100                          | 0.12                         | 78                             |
|           | 4SVP68M        | 4                 | 68                     | 60                               | 1400                          | 0.12                         | 136                            |
| C6        | 25SVP6R8M ※3   | 25                | 6.8                    | 80                               | 1200                          | 0.10                         | 85                             |
|           | 20SVP22M       | 20                | 22                     | 60                               | 1450                          | 0.10                         | 88                             |
|           | 20SVP27M       | 20                | 27                     | 60                               | 1450                          | 0.10                         | 108                            |
|           | 16SVP39M       | 16                | 39                     | 50                               | 1620                          | 0.10                         | 125                            |
|           | 10SVP47M       | 10                | 47                     | 50                               | 1620                          | 0.12                         | 94                             |
|           | 10SVP56M       | 10                | 56                     | 45                               | 1700                          | 0.12                         | 112                            |
|           | 6SVP82M        | 6.3               | 82                     | 45                               | 1700                          | 0.12                         | 103                            |
|           | 6SVP100M       | 6.3               | 100                    | 40                               | 1810                          | 0.12                         | 126                            |
|           | 6SVP120MV      | 6.3               | 120                    | 17                               | 2780                          | 0.12                         | 151                            |
|           | 4SVP150MX      | 4                 | 150                    | 40                               | 1810                          | 0.12                         | 120                            |
|           | 2R5SVP220M     | 2.5               | 220                    | 23                               | 2390                          | 0.12                         | 110                            |
| E7        | 25SVP10M ※3    | 25                | 10                     | 60                               | 1500                          | 0.10                         | 125                            |
|           | 20SVP33M       | 20                | 33                     | 45                               | 1890                          | 0.12                         | 132                            |
|           | 20SVP47M       | 20                | 47                     | 45                               | 1890                          | 0.12                         | 188                            |
|           | 16SVP56M       | 16                | 56                     | 45                               | 1890                          | 0.12                         | 179                            |
|           | 16SVP82M       | 16                | 82                     | 40                               | 2120                          | 0.12                         | 262                            |
|           | 10SVP120M      | 10                | 120                    | 35                               | 2560                          | 0.12                         | 240                            |
|           | 10SVP150MX     | 10                | 150                    | 35                               | 2560                          | 0.12                         | 300                            |
|           | 6SVP220MX      | 6.3               | 220                    | 35                               | 2560                          | 0.12                         | 277                            |
|           | 4SVP150M       | 4                 | 150                    | 35                               | 2560                          | 0.12                         | 120                            |
|           | 4SVP330M       | 4                 | 330                    | 35                               | 2560                          | 0.12                         | 264                            |
| F8        | 25SVP22M ※3    | 25                | 22                     | 50                               | 2000                          | 0.10                         | 275                            |
|           | 20SVP56M       | 20                | 56                     | 40                               | 2400                          | 0.12                         | 224                            |
|           | 20SVP68M       | 20                | 68                     | 40                               | 2400                          | 0.12                         | 272                            |
|           | 16SVP100M      | 16                | 100                    | 35                               | 2670                          | 0.12                         | 320                            |
|           | 16SVP150M      | 16                | 150                    | 30                               | 3020                          | 0.12                         | 480                            |
|           | 16SVP180MX     | 16                | 180                    | 30                               | 3020                          | 0.12                         | 576                            |
|           | 10SVP150M      | 10                | 150                    | 30                               | 3020                          | 0.12                         | 300                            |
|           | 10SVP270M      | 10                | 270                    | 25                               | 3700                          | 0.12                         | 540                            |
|           | 10SVP330MX     | 10                | 330                    | 25                               | 3700                          | 0.12                         | 660                            |
|           | 6SVP220M       | 6.3               | 220                    | 25                               | 3700                          | 0.12                         | 277                            |
|           | 6SVP330M       | 6.3               | 330                    | 25                               | 3700                          | 0.12                         | 416                            |
|           | 6SVP470MX      | 6.3               | 470                    | 25                               | 3700                          | 0.12                         | 592                            |
| E12       | 4SVP680M       | 4                 | 680                    | 25                               | 3700                          | 0.12                         | 544                            |
|           | 25SVP33M ※3    | 25                | 33                     | 30                               | 2980                          | 0.12                         | 413                            |
|           | 20SVP100M      | 20                | 100                    | 24                               | 3320                          | 0.15                         | 400                            |
|           | 16SVP180M      | 16                | 180                    | 20                               | 3640                          | 0.15                         | 576                            |
|           | 10SVP330M      | 10                | 330                    | 17                               | 3950                          | 0.15                         | 660                            |
|           | 6SVP470M       | 6.3               | 470                    | 15                               | 4210                          | 0.15                         | 592                            |
|           | 4SVP560M       | 4                 | 560                    | 13                               | 4520                          | 0.15                         | 448                            |
|           | 2R5SVP680M     | 2.5               | 680                    | 13                               | 4520                          | 0.15                         | 340                            |
| F12       | 25SVP56M ※3    | 25                | 56                     | 28                               | 3800                          | 0.12                         | 700                            |
|           | 20SVP150M      | 20                | 150                    | 20                               | 4320                          | 0.15                         | 600                            |
|           | 16SVP330M      | 16                | 330                    | 16                               | 4720                          | 0.15                         | 792                            |
|           | 10SVP560M      | 10                | 560                    | 13                               | 5230                          | 0.15                         | 840                            |
|           | 6SVP820M       | 6.3               | 820                    | 12                               | 5440                          | 0.15                         | 775                            |
|           | 4SVP1200M      | 4                 | 1200                   | 12                               | 5440                          | 0.18                         | 960                            |
|           | 2R5SVP1500M    | 2.5               | 1500                   | 12                               | 5440                          | 0.18                         | 750                            |

※1 Capacitance tolerance : M ±20%

※2 After 2 minutes

※3 The surge voltage of 25V products is 25V. Please consider SVPD series 25V products (whose surge voltage is 29V) in placing a new order.

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                   |

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

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