Ⅲ. SPECIFICATIONS FOR EACH SERIES

Vertical Surface Mounting Capacitors

It's SVQP series that is vastly improved heat proof by Conductive polymer. Please use SVQP series in surface mounting devices of the switching power supply. It guarantees the rated ripple current at 105°C, and it's not necessary to apply temperature derating provided in other series.

Conductive polymer type

SVP Series

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

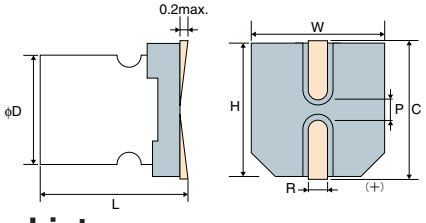
■Specifications

Items	Characteristics		
1. Category temperature range	-55°C to +105°C		
2. Tolerance on rated capacitance (120Hz)	M : ±20%		
3. Tangent of loss angle(tanδ) (120Hz)	Less that or equal to the value of Table4		
4. Leakage current (μA/2min)(or less) ※1	Less that or equal to the value of Table4		
5. ESR (100k to 300kHz)	Less that or equal to the value of Table4		
6. Characteristics at high temp. and low temp. Impedance ratio at 100kHz, +20°C	-55°C	Z / Z20°C	0.75 to 1.25
	+105°C	Z / Z20°C	0.75 to 1.25
7. Endurance 105°C, 2,000h Rated voltage applied (25WV→20V)	ΔC/C	Within ±20%	
	tanδ	1.5 or less times of an initial standard	
	ESR	1.5 or less times of an initial standard	
	Leakage current	Below an initial standard	
8. Damp heat (Steady state) (60°C, 90 to 95%RH, 1,000h no voltage)	ΔC/C	Within ±20%	
	tanδ	1.5 or less times of an initial standard	
	ESR	1.5 or less times of an initial standard	
	Leakage current	Below the initial standard of an after voltage processing	
9. Solder heat resistance (VPS) ※2 (230°C X 75s)	ΔC/C	Within ±10%	
	tanδ	1.3 or less times of an initial standard	
	ESR	1.3 or less times of an initial standard	
	Leakage current	Below the initial standard of an after voltage processing	

※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 44 for soldering recommendation.

■Dimensions



(unit : mm)

Size Code	φD±0.5	Lmax.	W±0.2	H±0.2	C±0.2	R	P±0.2
A5	4.0	5.5	4.3	4.3	5.0	0.5 to 0.8	1.0
B6	5.0	6.0	5.3	5.3	6.0	0.5 to 0.8	1.4
C6	6.3	6.0	6.6	6.6	7.3	0.5 to 0.8	2.1
E7	8.0	7.0	8.3	8.3	9.0	0.5 to 0.8	3.2
F8	10.0	8.0	10.3	10.3	11.0	0.5 to 0.8	4.6
E12	8.0	12.0	8.3	8.3	9.0	0.8 to 1.1	3.2
F12	10.0	12.7	10.3	10.3	11.0	0.8 to 1.1	4.6

■Size List

WV : Rated voltage (SV) : Surge (room temperature)

μF \ WV (SV)	2.5 (3.3)	4 (5.2)	6.3 (8.2)	10 (11.5)	16 (18.4)	20 (23)	25 (25)
3.3					A5		
4.7				A5			
6.8				A5			C6
10				A5		B6	E7
15				A5	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				E7			
150		C6, E7		E7, F8	F8	F12	
180					F8, E12		
220			E7, F8				
270				F8			
330		E7	F8	F8, E12	F12		
470			F8, E12				
560		E12		F12			
680	E12	F8					
820			F12				
1200		F12					
1500	F12						

※For the minimum packing quantity, see page 43.

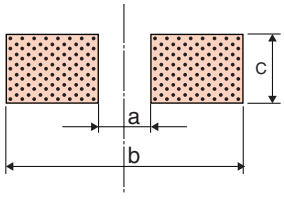
Ⅲ. SPECIFICATIONS FOR EACH SERIES

■Table4 SVP Series Characteristics List

Size Code	Part Number ※1	Rated Voltage (V)	Rated Capacitance (μF)	ESR (100kHz to 300kHz) (mΩ) (max.)	Rated ripple current (mArms)※2	Tangent of loss angle (max.)	Leakage current (μA) (max.)※3
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	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
	4SVP150MX	4	150	40	1810	0.12	120
E7	25SVP10M	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	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
	4SVP680M	4	680	25	3700	0.12	544
E12	25SVP33M	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	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 100kHz, +105°C
※3 After 2 minutes

■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