Surface mount type

SVPS Series

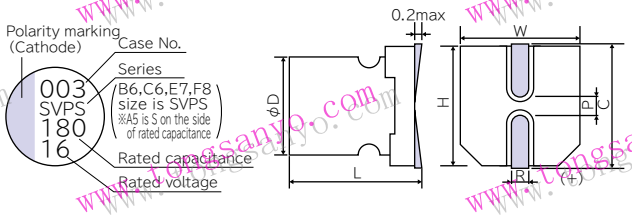
RoHS directive/Halogen-free compliant
Endurance: 105℃ 5,000h (Long life)

Specifications

Items	Condition		Specifications					
Rated voltage (V)	–		4.0	6.3	10	16	20	25
Surge voltage (V)	Room temperature		5.2	8.2	12	18	23	25
Category temperature range (℃)	–		−55 to +105					
Capacitance tolerance (%)	120Hz/20℃		M : ±20					
Dissipation Factor (DF)	120Hz/20℃		Please see the attached characteristics list					
Leakage current※1	Rated voltage applied, after 2 minutes		Please see the attached characteristics list					
Equivalent series resistance (ESR)	100kHz to 300kHz/20℃		Please see the attached characteristics list					
Characteristics of impedance ratio at high temp. and low temp.	Based the value at 100kHz, +20℃	−55℃ Z/Z20℃	0.75 to 1.25					
		+105℃ Z/Z20℃	0.75 to 1.25					
Endurance	105℃, 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℃, 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℃ 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℃. The voltage to be applied is the rated voltage for 4.0-20V products, and 20V for 25V products.
※2 Please refer to page 25 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	0.6~0.8	1.0
B6	5.0	5.9	5.3	5.3	6.0	0.6~0.8	1.4
C6	6.3	5.9	6.6	6.6	7.3	0.6~0.8	2.1
E7	8.0	6.9	8.3	8.3	9.0	0.6~0.8	3.2
F8	10.0	7.9	10.3	10.3	11.0	0.6~0.8	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					

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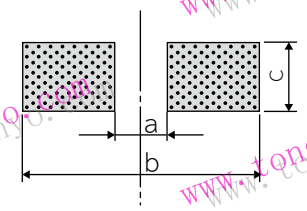
SVPS series characteristics list

Size code	Part number	Rated voltage (V)	Rated capacitance (μF)	ESR(mΩ) (max) 100kHz to 300kHz/20℃	Allowable ripple current 100kHz(mArms)※1	DF (% max)	Leakage current (μA)(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℃. 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