Surface mount type

SVPF Series

Update

- RoHS compliance
- Large capacitance · High voltage
- 105℃ 5,000h

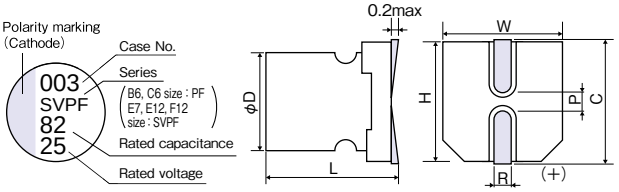
SVPF is the high voltage version of the SVPC series.
Ideal for use in high voltage lines such as the input side of DC/DC converters.
This product can support lead free-reflow.※2

Specifications

Items	Condition		Specifications				
Rated voltage (V)	–		16	20	25	35	50
Surge voltage (V)	Room temperature		18	23	29	40	57
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	△C/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	△C/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)	△C/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℃.
※2 Please refer to page 26 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
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
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

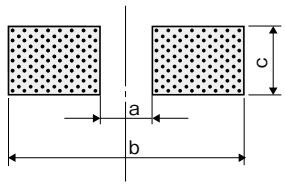
RV : Rated voltage

μF \ RV	16	20	25	35	50
10					C6
18					E7
22				C6	
27			B6		
39				E7	E12
47			C6		
56		B6	C6		
68					F12
82	B6		E7	E12	
100			E7		
120		C6		F12	
180	C6	E7	E12		
270	E7				
330			F12		
390		E12			
560	E12	F12			
1000	F12				

SVPF 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)	DF (% max)	Leakage current (μA)(max) After 2 minutes
B6	25SVPF27MX	25	27	40	2450	12	135
	20SVPF56MX	20	56	30	2800	12	224
	16SVPF82M	16	82	27	3000	12	262
C6	50SVPF10M	50	10	40	2500	12	100
	35SVPF22M	35	22	35	2600	12	154
	25SVPF47M	25	47	30	2800	12	235
	25SVPF56M	25	56	30	2800	12	280
	20SVPF120M	20	120	25	3200	12	480
	16SVPF180M	16	180	22	3300	12	576
E7	50SVPF18M	50	18	35	2700	12	180
	35SVPF39M	35	39	30	2800	12	273
	25SVPF82M	25	82	28	3000	12	410
	25SVPF100M	25	100	24	3200	12	500
	20SVPF180M	20	180	25	3200	12	720
	16SVPF270M	16	270	22	3300	12	864
E12	50SVPF39M	50	39	25	3800	12	390
	35SVPF82M	35	82	20	4000	12	574
	25SVPF180M	25	180	16	4650	12	900
	20SVPF390M	20	390	14	4950	12	1560
	16SVPF560M	16	560	14	4950	12	1792
F12	50SVPF68M	50	68	20	4300	12	680
	35SVPF120M	35	120	18	4400	12	840
	25SVPF330M	25	330	14	5000	12	1650
	20SVPF560M	20	560	12	5400	12	2240
	16SVPF1000M	16	1000	12	5400	12	3200

Recommended land pattern dimension of PWB



(unit : mm)

Size code	a	b	c
B6	1.4	7.4	1.6
C6	2.1	9.1	1.6
E7	2.8	11.1	1.9
E12	2.8	11.1	1.9
F12	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

※ Red letters : New models

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Panasonic:

20SVPF120M 16SVPF270M 25SVPF56M 50SVPF18M 25SVPF27MX 20SVPF56MX 35SVPF39M 20SVPF180M 25SVPF82M 50SVPF10M 20SVPF560M 35SVPF22M 16SVPF560M 16SVPF180M 16SVPF82M 35SVPF120M 25SVPF180M 50SVPF68M 25SVPF47M 35SVPF82M 25SVPF100M 20SVPF390M 50SVPF39M 16SVPF1000M 25SVPF330M