

# Surface mount type

# SVPF Series



RoHS directive/Halogen-free compliant  
 High voltage (50V)  
 Large capacitance (1,000 μF)  
 Endurance: 105°C 5,000h

## 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 (°C)	—	-55 to +105				
Capacitance tolerance (%)	120Hz/20°C	M : ±20				
Dissipation Factor (DF)	120Hz/20°C	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°C	Please see the attached characteristics list				
Characteristics of impedance ratio at high temp. and low temp.	Based the value at 100kHz, +20°C	-55°C	Z/Z <sub>20°C</sub>	0.75 to 1.25		
		+105°C	Z/Z <sub>20°C</sub>	0.75 to 1.25		
		ΔC/C	Within ±20% of the initial value			
Endurance	105°C, 5,000h, Rated voltage applied	DF	Within 1.5 times of the initial limit			
		ESR	Within 1.5 times of the initial limit			
		LC	Within the initial limit			
		ΔC/C	Within ±20% of the initial value			
Damp heat (Steady state)	60°C, 90 to 95%RH, 1,000h, No-applied voltage	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)			
		ΔC/C	Within ±10% of the initial value			
Resistance to soldering heat*2	VPS (230°C X 75s)	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)			
		ΔC/C	Within ±10% of the initial value			

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

Voltage processing: Apply voltage for 120 minutes at 105°C.

\*2 Please refer to page 25 for reflow soldering conditions.

## Marking and dimensions

(unit : mm)

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
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
E12	8.0	11.9	8.3	8.3	9.0	0.8~1.1	3.2
F12	10.0	12.6	10.3	10.3	11.0	0.8~1.1	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 ( $\mu$ F)	ESR( $m\Omega$ ) (max) 100kHz to 300kHz/20°C	Rated ripple current 100kHz (mA <sub>rms</sub> ) at 105°C	DF (% max)	Leakage current ( $\mu$ A) (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 $\leq$ f < 1kHz	1kHz $\leq$ f < 10kHz	10kHz $\leq$ f < 100kHz	100kHz $\leq$ f $\leq$ 500kHz
Coefficient	0.05	0.3	0.7	1