

SME Series

- Endurance : 85°C 2000 hours
- Solvent-proof type except 350 to 450V_{dc}
(see PRECAUTIONS AND GUIDELINES)

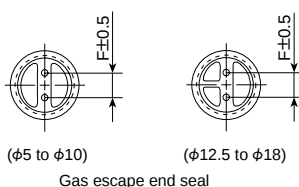
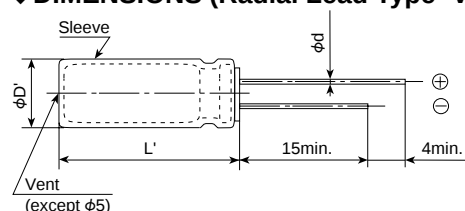
SMG ← **SME**
downsized



◆ SPECIFICATIONS

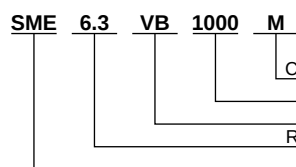
Items	Characteristics													
Category														
Temperature Range	-40 to +85°C (6.3 to 400V _{dc}) -25 to +85°C (450V _{dc})													
Rated Voltage Range	6.3 to 450V _{dc}													
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)													
Leakage Current	6.3 to 100V _{dc}						160 to 450V _{dc}							
	I=0.03CV or 4μA, whichever is greater. (at 20°C after 1 minute)						CV		Time		After 1minute		After 5minutes	
	I=0.01CV or 3μA, whichever is greater. (at 20°C after 2 minutes)						CV≤1000		I=0.1CV+40		I=0.03CV+15			
							CV>1000		I=0.04CV+100		I=0.02CV+25			
													(at 20°C)	
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)													
Dissipation Factor (tanδ)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	350 to 400V	450V		
	tanδ (Max.)	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.20	0.24	0.24		
	When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase. (at 20°C, 120Hz)													
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	350 to 400V	450V		
	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	3	6	16		
	Z(-40°C)/Z(+20°C)	8	6	4	3	3	3	3	3	4	6	—	(at 120Hz)	
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.													
	Rated voltage	6.3 to 100V _{dc}						160 to 400V _{dc}			450V _{dc}			
	Capacitance change	≤±20% of the initial value						≤±20% of the initial value			≤±20% of the initial value			
	D.F. (tanδ)	≤150% of the initial specified value						≤200% of the initial specified value			≤150% of the initial specified value			
	Leakage current	≤The initial specified value						≤The initial specified value			≤The initial specified value			
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1000 hours at 85°C without voltage applied.													
	Rated voltage	6.3 to 100V _{dc}						160 to 400V _{dc}			450V _{dc}			
	Capacitance change	≤±20% of the initial value						≤±20% of the initial value			≤±20% of the initial value			
	D.F. (tanδ)	≤150% of the initial specified value						≤200% of the initial specified value			≤200% of the initial specified value			
	Leakage current	≤The initial specified value						≤500% of the initial specified value			≤500% of the initial specified value			

◆ DIMENSIONS (Radial Lead Type=VB) [mm]



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max						

◆ PART NUMBERING SYSTEM



Capacitance	Code
0.1µF	R1
0.47µF	R47
1.0µF	1
4.7µF	4R7
10µF	10
100µF	100

◆ RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Capacitance (µF)	50	120	300	1k	10k	100k
0.1 to 4.7	0.65	1.00	1.35	1.75	2.30	2.50
10 to 47	0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000	0.80	1.00	1.15	1.30	1.40	1.50
2,200 to	0.85	1.00	1.03	1.05	1.08	1.08

◆STANDARD RATINGS

μF V_{dc}	6.3		10		16		25		35		50		63		100	
0.1											5×11	1.3			5×11	2.6
0.22											5×11	2.9			5×11	5.8
0.33											5×11	4.4			5×11	8.8
0.47											5×11	7			5×11	12
1.0	Case size $\phi\text{D}\times\text{L}$ (mm) Rated ripple current (mA rms) at 85°C, 120Hz										5×11	13			5×11	22
2.2											5×11	29			5×11	33
3.3											5×11	35			5×11	40
4.7											5×11	42	5×11	45	5×11	48
10										5×11	65	5×11	70	6.3×11	80	
22										5×11	95	6.3×11	115	8×11.5	135	
33									5×11	105	6.3×11	125	6.3×11	140	10×12.5	195
47					5×11	110	5×11	115	6.3×11	145	6.3×11	150	8×11.5	190	10×16	255
100	5×11	130	5×11	145	6.3×11	180	6.3×11	190	8×11.5	240	8×11.5	255	10×12.5	320	12.5×20	450
220	6.3×11	230	6.3×11	250	8×11.5	300	8×11.5	320	10×12.5	420	10×16	490	10×20	565	16×25	810
330	6.3×11	280	8×11.5	350	8×11.5	370	10×12.5	470	10×16	570	10×20	650	12.5×20	765	16×25	990
470	8×11.5	380	8×11.5	415	10×12.5	520	10×16	620	10×20	740	12.5×20	860	12.5×25	990	16×31.5	1,250
1,000	10×12.5	650	10×16	790	10×20	910	12.5×20	1,090	12.5×25	1,300	16×25	1,530	16×31.5	1,700		
2,200	12.5×20	1,150	12.5×20	1,240	12.5×25	1,420	16×25	1,660	16×31.5	1,890	18×35.5	2,160				
3,300	12.5×20	1,380	12.5×25	1,590	16×25	1,840	16×31.5	2,070	18×35.5	2,340						
4,700	16×25	1,880	16×25	1,980	16×31.5	2,260	18×35.5	2,520	18×40	2,690						
6,800	16×25	2,120	16×31.5	2,390	18×35.5	2,690	18×40	2,830								
10,000	16×31.5	2,500	18×35.5	2,840	18×40	2,920										
15,000	18×35.5	2,990														

Non solvent-proof												
μF \ V_{dc}	160		200		250		350		400		450	
0.47	6.3×11	12	6.3×11	12	6.3×11	12	8×11.5	15				
1.0	6.3×11	17	6.3×11	17	6.3×11	17	8×11.5	22	8×11.5	22	10×12.5	25
2.2	6.3×11	26	6.3×11	26	8×11.5	30	10×12.5	39	10×12.5	39	10×16	42
3.3	8×11.5	36	8×11.5	36	10×12.5	43	10×16	53	10×16	53	10×20	56
4.7	8×11.5	44	10×12.5	51	10×12.5	51	10×16	63	10×20	69	12.5×20	75
10	10×16	83	10×16	83	10×20	90	12.5×20	115	12.5×20	115	12.5×25	120
22	10×20	130	10×20	130	12.5×25	160	12.5×25	180	16×25	200	16×31.5	210
33	12.5×20	180	12.5×25	190	12.5×25	190	16×25	245	16×31.5	265	18×35.5	275
47	12.5×25	230	12.5×25	230	16×25	260	16×31.5	315	16×35.5	325		
100	16×25	380	16×31.5	400	18×35.5	440	18×40	500				
220	18×35.5	640	18×40	660								

◆MAXIMUM ESR

(Ω) at 20°C, 120Hz

μF \ V_{dc}	6.3	10	16	25	35	50	63	100	160 to 250	350 to 450
0.1						1,660		1,330		
0.22						754		603		
0.33						503		402		
0.47						353		282	706	847
1.0						166		133	332	398
2.2						75.4		60.3	151	181
3.3						50.3		40.3	101	121
4.7						35.3	31.8	28.2	70.6	84.7
10						16.6	14.9	13.3	33.2	39.8
22						7.54	6.79	6.03	15.1	18.1
33					6.03	5.03	4.52	4.02	10.1	12.1
47			5.65	4.94	4.23	3.53	3.18	2.82	7.06	8.47
100	3.70	3.15	2.65	2.32	1.99	1.66	1.49	1.33	3.32	3.98
220	1.66	1.43	1.21	1.06	0.905	0.754	0.679	0.603	1.51	
330	1.11	0.955	0.804	0.704	0.603	0.503	0.452	0.402		
470	0.776	0.671	0.565	0.494	0.423	0.353	0.318	0.282		
1,000	0.370	0.315	0.265	0.232	0.199	0.166	0.149			
2,200	0.181	0.158	0.136	0.121	0.106	0.0905				
3,300	0.131	0.116	0.101	0.0905	0.0804					
4,700	0.0988	0.0882	0.0776	0.0706	0.0635					
6,800	0.0781	0.0707	0.0634	0.0585						
10,000	0.0630	0.0581	0.0531							
15,000	0.0531									