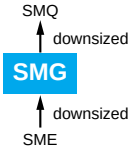
SMG Series

- Downsized from current standard SME series
- Endurance : 85℃ 2000 hours
- Solvent-proof type except 315 to 450Vdc
  (see PRECAUTIONS AND GUIDELINES)



◆SPECIFICATIONS

Items	Characteristics												
Category Temperature Range	−40 to +85℃(6.3 to 400Vdc) −25 to +85℃(450Vdc)												
Rated Voltage Range	6.3 to 450Vdc												
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)												
Leakage Current		6.3 to 100Vdc								160 to 450Vdc			
	≦ϕ18	I=0.03CV or 4μA, whichever is greater. (at 20℃ after 1 minute)								CV \ Time: CV≦1000	After 1minute: I=0.1CV+40	After 5minutes: I=0.03CV+15	
										CV>1000	I=0.04CV+100	I=0.02CV+25	(at 20℃)
	≧ϕ20	I=0.03CV (at 20℃ after 3 minutes)											
	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)												
Dissipation Factor (tanδ)	Rated voltage (Vdc)		6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	315 to 400V	450V
	tanδ (Max.)	≦ϕ18	0.34	0.24	0.20	0.16	0.14	0.12	0.09	0.08	0.20	0.24	0.24
		≧ϕ20	0.28	0.24	0.20	0.16	0.14	0.12	0.09	0.08	0.15	0.15	0.20
	When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase. (at 20℃, 120Hz)												
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)		6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	315 to 400V	450V
	Z(−25℃)/Z(+20℃)	≦ϕ18	5	4	3	2	2	2	2	2	3	6	6
		≧ϕ20	5	4	3	2	2	2	2	2	4	6	6
	Z(−40℃)/Z(+20℃)	≦ϕ18	12	10	8	5	4	3	3	3	4	6	— (at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after the rated voltage is applied for 2000 hours at 85℃.												
	Capacitance change	≦±20% of the initial value											
	D.F. (tanδ)	≦200% of the initial specified value											
	Leakage current	≦The initial specified value											
Shelf Life	The following specifications shall be satisfied when the capacitors are restored to 20℃ after exposing them for 1000 hours at 85℃ without voltage applied.												
	Rated voltage	6.3 to 100Vdc	160 to 450Vdc										
	Capacitance change	≦±20% of the initial value	≦±20% of the initial value										
	D.F. (tanδ)	≦200% of the initial specified value	≦200% of the initial specified value										
	Leakage current	≦The initial specified value	≦500% of the initial specified value										

◆PART NUMBERING SYSTEM

SMG 6.3 VB 1000 M ___

- Case code (≧ϕ20)
- Cap tolerance (±20%)
- Nominal cap code
- Radial lead type
- Rated voltage in volts
- Series name

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

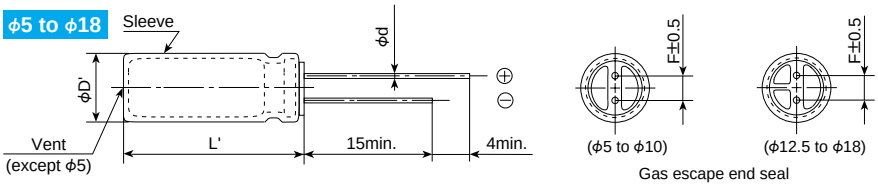
◆CASE CODE [mm]

Case code	Case size ϕD×L	Case code	Case size ϕD×L	Case code	Case size ϕD×L
20S	20×20	—	—	—	—
20A	20×25	—	—	—	—
20B	20×30	22B	22×30	—	—
20C	20×35	22C	22×35	—	—
20D	20×40	22D	22×40	25D	25.4×40

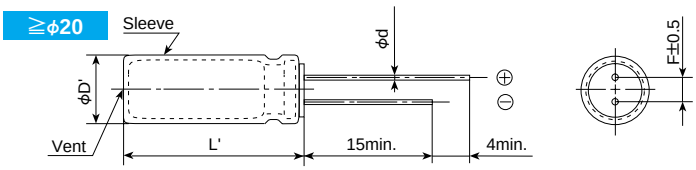
SMG Series

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

φ5 to φ18



≧φ20



φD	5	6.3	8	10	12.5	16	18	20	22	25.4
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φD'	φD+0.5max.							φD+0.5max.		
L'	L+1.5max.							L+2.0max.		

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(φ5 to φ18)

Capacitance (μF) \ Frequency (Hz)	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

(φ20 to φ25.4)

Rated Voltage (Vdc) \ Frequency (Hz)	50	120	300	1k	10k	100k
6.3 to 50	0.95	1.00	1.03	1.05	1.08	1.08
63 to 100	0.92	1.00	1.07	1.13	1.19	1.20
160 to 250	0.81	1.00	1.17	1.32	1.45	1.50
315 to 450	0.77	1.00	1.16	1.30	1.41	1.43

SMG Series

◆STANDARD RATINGS

Case size ϕD×L (mm)
Rated ripple current (mArms) at 85℃, 120Hz

μF \ Vdc	6.3		10		16		25		35		50		63		100	
0.1											5×11	1.3			5×11	2.1
0.22											5×11	2.9			5×11	4.7
0.33											5×11	4.3			5×11	7
0.47											5×11	6.2			5×11	10
1.0											5×11	17			5×11	21
2.2											5×11	28			5×11	30
3.3											5×11	35			5×11	40
4.7											5×11	41			5×11	45
10											5×11	60	5×11	65	6.3×11	75
22											5×11	95	5×11	100	8×11.5	130
33											5×11	125	6.3×11	140	8×11.5	180
47							5×11	115	5×11	130	6.3×11	155	6.3×11	170	10×12.5	230
100					5×11	160	6.3×11	190	6.3×11	210	8×11.5	260	10×12.5	300	10×20	370
220	5×11	200	5×11	240	6.3×11	260	8×11.5	330	8×11.5	385	10×12.5	430	10×16	490	12.5×25	620
330	6.3×11	270	6.3×11	290	8×11.5	370	8×11.5	440	10×12.5	490	10×16	585	10×20	710	12.5×25	760
															20×20	870
470	6.3×11	320	6.3×11	350	8×11.5	440	10×12.5	545	10×16	645	10×20	755	12.5×20	900	16×25	1,000
680															20×30	1,360
820													20×20	1,370	22×30	1,540
1,000	8×11.5	540	10×12.5	650	10×16	785	10×20	955	12.5×20	1,145	12.5×25	1,340	16×25	1,300	18×40	1,380
													20×25	1,600	20×35	1,720
1,200															22×40	1,980
1,500											20×20	1,570	20×30	1,850		
1,800															25.4×40	2,490
2,200	10×20	1,000	10×20	1,070	12.5×20	1,295	12.5×25	1,540	16×25	1,785	16×35.5	2,075	20×35	2,330		
									20×20	1,670	20×25	1,880	22×30	2,190		
2,700											20×30	2,150	20×40	2,640		
3,300	10×20	1,185	12.5×20	1,420	12.5×25	1,655	16×25	1,975	16×35.5	2,275	18×35.5	2,500				
							20×20	1,850	20×25	2,050	20×35	2,420				
											22×30	2,420	22×40	2,810		
3,900											20×40	2,590				
									20×30	2,310	22×35	2,590	25.4×40	3,100		
4,700	12.5×20	1,545	12.5×25	1,780	16×25	2,090	16×31.5	2,420	18×35.5	2,700						
					20×20	1,960	20×25	2,420	20×35	2,510						
									22×30	2,380	22×40	2,960				
5,600							20×30	2,430	20×40	2,690						
									22×35	2,690						
6,800	12.5×25	1,915	16×25	2,220	16×31.5	2,520	18×35.5	2,880								
			20×20	2,080	20×25	2,330	20×35	2,680								
							22×30	2,510	22×40	3,090	25.4×40	3,360				
8,200					20×30	2,500	20×40	2,810								
							22×35	2,810								
10,000	16×25	2,330	16×35.5	2,670	18×35.5	2,920										
	20×25	2,310	20×25	2,410	20×35	2,720										
					22×30	2,660	22×40	3,240	25.4×40	3,480						
12,000			20×30	2,620	20×40	2,900										
					22×35	2,900	22×40	3,240								
15,000	16×35.5	2,845	18×35.5	3,080												
	20×30	2,660	20×35	2,870												
			22×30	2,660	22×40	3,380	25.4×40	3,610								
18,000	20×35	2,890														
	22×30	2,860	22×35	3,050												
22,000	18×40	3,320														
	20×40	3,130														
	22×35	3,130	22×40	3,480	25.4×40	3,720										
27,000	22×40	3,280														
33,000			25.4×40	3,560												
39,000	25.4×40	3,560														

SMG Series

◆STANDARD RATINGS

Case size φD×L (mm)
Rated ripple current (mArms) at 85℃, 120Hz

μF \ Vdc	160		200		250		315		350		400		450	
							Non solvent-proof							
0.47									6.3×11	15			10×12.5	13
1.0									6.3×11	22	6.3×11	22	10×12.5	19
2.2					6.3×11	32			8×11.5	38	8×11.5	38	10×12.5	32
3.3	6.3×11	40	6.3×11	40	8×11.5	46			8×11.5	46	10×12.5	54	10×16	44
4.7	6.3×11	48	8×11.5	55	8×11.5	55			10×12.5	65	10×16	71	10×20	56
10	10×12.5	94	10×12.5	94	10×16	105			10×20	115	10×20	115	12.5×20	91
22	10×20	170	10×20	170	10×20	170			12.5×20	185	12.5×25	205	16×25	165
													20×20	180
33	10×20	205	10×20	205	12.5×20	230			16×25	275	16×25	275	16×31.5	215
											20×20	260	20×25	240
47	12.5×20	270	12.5×20	270	12.5×25	295	20×20	310	16×25	325	16×31.5	350	16×35.5	265
									20×20	310			20×25	290
56											20×25	350	20×30	320
68							20×25	400	20×25	400	20×30	420	20×35	370
													22×30	370
82					20×20	420	20×25	440					20×40	420
													22×35	420
100	12.5×25	430	16×25	475	16×31.5	515			18×31.5	530				
			20×20	460	20×25	490	20×30	500	20×30	500	20×35	520	22×40	470
											22×30	520		
120					20×25	530	20×30	550	20×35	560	20×40	580	25.4×40	520
											22×35	580		
180			20×25	660	20×30	680	20×40	720			25.4×40	790		
							22×35	720						
220					18×40	825								
	16×31.5	760	20×30	750	20×35	780	22×40	810	25.4×40	890				
	20×25	730	18×35.5	810	22×30	820								
270			20×30	830	20×40	880	25.4×40	920						
					22×35	880								
330	18×35.5	995	20×35	1,070	22×40	1,060								
	20×30	920	22×30	1,070										
390	20×35	1,160	20×40	1,190	25.4×40	1,200								
	22×30	1,160	22×30	1,160										
470	20×40	1,340	22×40	1,350										
	22×35	1,340												
560	22×40	1,470	22×40	1,430										
680	25.4×40	1,570	25.4×40	1,620										