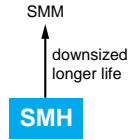


# SMH Series

- Endurance with ripple current : 85°C 2000 hours
- Non solvent-proof type

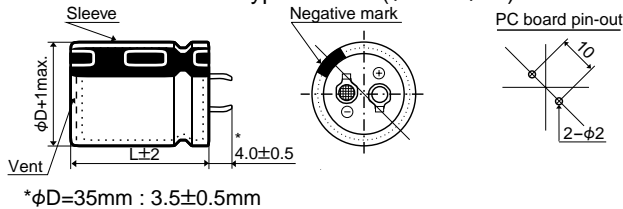


## ◆SPECIFICATIONS

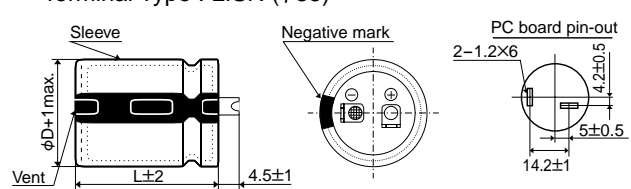
Items	Characteristics													
Category	-40 to +85°C (6.3 to 100V <sub>dc</sub> ) -25 to +85°C (160 to 450V <sub>dc</sub> )													
Temperature Range														
Rated Voltage Range	6.3 to 450V <sub>dc</sub>													
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)													
Leakage Current	I=0.02CV or 3mA, whichever is smaller. (at 20°C after 5 minutes)													
Dissipation Factor (tanδ)	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)													
	Rated voltage (V <sub>dc</sub> )	6.3V	10V	16V	25V	35V	50V	63V	80V	100V	160 to 250V	315 to 400V	450V	
	tanδ (Max.)	0.60	0.50	0.40	0.30	0.25	0.20	0.15	0.15	0.15	0.10*	0.15	0.15	
	* : 0.15 for φD=35mm (at 20°C, 120Hz)													
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V <sub>dc</sub> )													
	Z(-25°C)/Z(+20°C)	4	4	4	3	3	2	2	2	2	4	4	8	
	Z(-40°C)/Z(+20°C)	15	15	15	10	8	6	6	5	5	—	—	—	
	(at 120Hz)													
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20°C after subjected to DC voltage with the rated ripple current is applied for 2000 hours at 85°C.													
	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°C after exposing them for 1000 hours at 85°C without voltage applied.													
	Capacitance change	≤±20% of the initial value												
	D.F. (tanδ)	≤150% of the initial specified value												
	Leakage current	≤The initial specified value												

## ◆DIMENSIONS [mm]

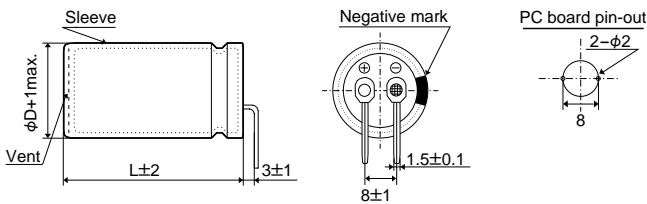
### ●Standard Terminal Type : VSSN (φ22 to φ35)



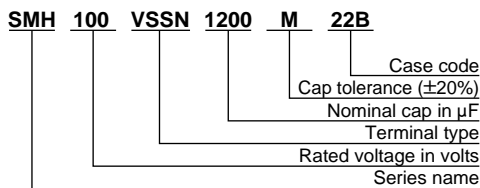
### ●Terminal Type : LISN (φ35)



### ●Terminal Type : LCSN (φ22×30 to 50L)



## ◆PART NUMBERING SYSTEM



## ◆STANDARD RATINGS

μF	V <sub>dc</sub>		6.3				10				16				
	φ	D	22	25.4	30	35	22	25.4	30	35	22	25.4	30	35	
8,200											22×25 2.51				
10,000											22×25 2.77				
12,000							22×25 2.39				22×30 2.86	25.4×25 2.95			
15,000	22×25 2.44						22×30 2.76	25.4×25 2.77			22×35 3.29	25.4×30 3.46	30×25 3.66		
18,000	22×30 2.67		25.4×25 2.70				22×35 3.12	25.4×25 3.04			22×40 3.72	25.4×35 3.98	30×25 4.00		
22,000	22×30 3.06		25.4×25 3.07				22×40 3.55	25.4×30 3.48	30×25 3.53		22×50 4.37	25.4×40 4.26	30×30 4.21	35×25 4.15	
27,000	22×35 3.49		25.4×30 3.52	30×25 3.57			22×45 4.04	25.4×35 3.98	30×30 3.73	35×25 3.73		25.4×45 4.72	30×35 4.82	35×30 4.65	
33,000	22×40 3.97		25.4×35 4.02	30×25 3.95			22×50 4.58	25.4×40 4.54	30×30 4.13	35×25 4.13		25.4×50 5.33	30×40 5.36	35×30 5.15	
39,000	22×50 4.55		25.4×40 4.50	30×30 4.45	35×25 4.51			25.4×45 5.08	30×35 5.05	35×30 4.80			30×45 6.01	35×35 5.95	
47,000			25.4×45 5.09	30×35 5.06	35×30 5.01			25.4×50 5.73	30×40 5.72	35×30 5.27			30×50 6.79	35×40 6.76	
56,000			25.4×50 5.71	30×40 5.70	35×30 5.77				30×45 6.44	35×35 6.38				35×45 7.62	
68,000				30×45 6.48	35×35 6.42				30×50 7.27	35×40 7.27				35×50 8.63	
82,000				30×50 7.32	35×40 7.29					35×50 8.49					
100,000						35×45 ←	Upper : Case size φDXL (mm)								
						8.31 ←	Lower : Rated ripple current (Arms) at 85°C, 120Hz								

μF	V <sub>dc</sub>		25				35				50				
	φ	D	22	25.4	30	35	22	25.4	30	35	22	25.4	30	35	
2,200											22×25 1.91				
3,300											22×30 2.37	25.4×25 2.38			
3,900							22×25 2.22				22×35 2.65	25.4×30 2.68	30×25 2.55		
4,700							22×30 2.41	25.4×25 2.42			22×40 2.99	25.4×35 3.03	30×25 2.81		
5,600	22×25 2.21						22×35 2.75	25.4×25 2.64			22×45 3.36	25.4×35 3.31	30×30 3.37	35×25 3.42	
6,800	22×30 2.40		25.4×25 2.56				22×40 2.80	25.4×30 2.74	30×25 2.97		22×50 3.81	25.4×40 3.81	30×35 3.85	35×30 3.85	
8,200	22×35 2.72		25.4×25 2.80				22×45 3.47	25.4×35 3.10	30×30 3.13	35×25 2.73		25.4×50 4.37	30×40 4.36	35×30 4.41	
10,000	22×40 3.09		25.4×30 3.12	30×25 3.21			22×50 3.57	25.4×40 3.53	30×30 3.46	35×25 3.02			30×45 4.97	35×35 4.92	
12,000	22×45 3.48		25.4×35 3.43	30×30 3.86	35×25 3.54			25.4×45 3.98	30×35 4.01	35×30 4.42			30×50 5.60	35×40 5.58	
15,000	22×50 4.00		25.4×40 3.95	30×30 4.00	35×25 3.95			25.4×50 4.54	30×40 4.52	35×35 5.01				35×45 6.44	
18,000			25.4×45 4.45	30×35 4.46	35×30 4.63				30×45 4.71	35×40 5.54				35×50 6.71	
22,000			25.4×50 5.02	30×45 5.21	35×35 5.16				30×50 5.33	35×45 6.04					
27,000				30×50 5.94	35×40 5.92					35×50 6.89					
33,000						35×45 ←	Upper : Case size φDXL (mm)								
						6.75 ←	Lower : Rated ripple current (Arms) at 85°C, 120Hz								
39,000						35×50 7.56									

## ◆CASE CODE [mm]

Case code	Case size φDXL	Case code	Case size φDXL	Case code	Case size φDXL	Case code	Case size φDXL
22A	22×25	25A	25.4×25	30A	30×25	35A	35×25
22B	22×30	25B	25.4×30	30B	30×30	35B	35×30
22C	22×35	25C	25.4×35	30C	30×35	35C	35×35
22D	22×40	25D	25.4×40	30D	30×40	35D	35×40
22E	22×45	25E	25.4×45	30E	30×45	35E	35×45
22F	22×50	25F	25.4×50	30F	30×50	35F	35×50

## ◆RATED RIPPLE CURRENT MULTIPLIERS

### ●Frequency Multipliers

Frequency (Hz)	50	120	300	1k	10k	50k
6.3 to 50V <sub>dc</sub>	0.95	1.00	1.03	1.05	1.08	1.08
63 to 100V <sub>dc</sub>	0.92	1.00	1.07	1.13	1.19	1.20
160 to 250V <sub>dc</sub>	0.81	1.00	1.17	1.32	1.45	1.50
315 to 450V <sub>dc</sub>	0.77	1.00	1.16	1.30	1.41	1.43

### ◆STANDARD RATINGS

μF	V <sub>dc</sub>		63				80				100				
	φD		22	25.4	30	35	22	25.4	30	35	22	25.4	30	35	
820											22×25 1.86				
1,200							22×25 1.69				22×30 2.09	25.4×25 2.10			
1,500							22×25 1.88				22×35 2.41	25.4×30 2.43	30×25 2.46		
1,800		22×25 1.82					22×30 2.14	25.4×25 2.26			22×40 2.71	25.4×35 2.75	30×25 2.72		
2,200		22×30 2.31	25.4×25 2.30				22×35 2.44	25.4×30 2.46	30×25 2.49		22×45 3.08	25.4×40 3.13	30×30 3.09	35×25 3.14	
2,700		22×35 2.40	25.4×25 2.40				22×40 2.78	25.4×35 2.81	30×25 2.75		22×50 3.53	25.4×45 3.57	30×35 3.55	35×30 3.71	
3,300		22×35 2.62	25.4×30 2.64	30×25 2.78			22×45 3.16	25.4×40 3.21	30×30 3.17	35×25 3.21		25.4×50 4.06	30×40 4.05	35×30 4.05	
3,900		22×40 2.93	25.4×35 2.97	30×30 3.00	35×25 3.00		22×50 3.52	25.4×45 3.59	30×35 3.57	35×25 3.50			30×45 4.54	35×35 4.49	
4,700		22×50 3.39	25.4×40 3.36	30×30 3.32	35×25 3.36			25.4×50 4.05	30×40 4.05	35×30 4.09			30×50 5.13	35×40 5.11	
5,600			25.4×45 3.77	30×35 3.75	35×30 3.76				30×45 4.55	35×35 4.51				35×45 5.75	
6,800			25.4×50 4.27	30×40 4.27	35×30 4.15				30×50 5.16	35×40 5.14				35×50 6.50	
8,200				30×45 4.83	35×35 4.79					35×45 5.83					
10,000				30×50 5.49	35×40 5.47					35×50 6.63					
12,000					35×45 6.19	← Upper : Case size φD×L (mm) ← Lower : Rated ripple current (Arms) at 85°C, 120Hz									

μF	V <sub>dc</sub>		160				180				200				
	φD		22	25.4	30	35	22	25.4	30	35	22	25.4	30	35	
270							22×25 1.27				22×25 1.27				
330		22×25 1.40					22×25 1.40				22×30 1.45	25.4×25 1.45			
390		22×25 1.52					22×30 1.58	25.4×25 1.58			22×30 1.58	25.4×25 1.58			
470		22×30 1.73	25.4×25 1.74				22×35 1.79	25.4×25 1.79			22×35 1.78	25.4×30 1.80	30×25 1.80		
560		22×35 1.95	25.4×25 1.95				22×40 2.00	25.4×30 1.96	30×25 1.99		22×40 2.00	25.4×35 2.03	30×25 2.00		
680		22×40 2.21	25.4×30 2.16	30×25 2.19			22×45 2.27	25.4×35 2.23	30×25 2.25		22×50 2.33	25.4×40 2.30	30×30 2.28	35×25 2.31	
820		22×45 2.49	25.4×35 2.45	30×30 2.50	35×25 2.50		22×50 2.55	25.4×40 2.53	30×30 2.70	35×25 2.53		25.4×45 2.60	30×35 2.59	35×25 2.60	
1,000		22×50 2.82	25.4×40 2.79	30×30 2.80	35×25 2.80			25.4×45 2.87	30×35 2.86	35×30 2.99		25.4×50 2.95	30×40 2.95	35×30 2.95	
1,200			25.4×45 3.15	30×35 3.13	35×30 3.27			25.4×50 3.30	30×40 3.23	35×35 3.31			30×45 3.31	35×35 3.31	
1,500			25.4×50 3.72	30×45 3.73	35×35 3.69				30×50 3.83	35×40 3.82			30×50 3.82	35×40 3.82	
1,800				30×50 4.20	35×40 4.18					35×45 4.32				35×45 4.32	
2,200					35×45 4.78					35×50 4.92				35×50 4.92	
2,700					35×50 5.45	← Upper : Case size φD×L (mm) ← Lower : Rated ripple current (Arms) at 85°C, 120Hz									



SMH Series

◆STANDARD RATINGS

μF	V <sub>dc</sub>		250				315				350			
	φ	D	22	25.4	30	35	22	25.4	30	35	22	25.4	30	35
82														
100										22×25 0.86				
120							22×25 0.94				22×30 0.99	25.4×25 0.99		
150							22×30 1.11	25.4×25 1.10			22×35 1.14	25.4×25 1.10		
180		22×25 1.04					22×35 1.20	25.4×25 1.20			22×40 1.28	25.4×30 1.24	30×25 1.27	
220		22×25 1.15					22×40 1.41	25.4×30 1.38	30×25 1.40		22×45 1.44	25.4×35 1.44	30×30 1.44	35×25 1.44
270		22×30 1.31	25.4×25 1.32				22×45 1.60	25.4×35 1.59	30×30 1.59	35×25 1.59	22×50 1.64	25.4×40 1.63	30×35 1.66	35×25 1.63
330		22×35 1.49	25.4×30 1.51	30×25 1.52			22×50 1.82	25.4×40 1.80	30×30 1.80	35×25 1.80		25.4×50 1.88	30×35 1.83	35×30 1.87
390		22×40 1.67	25.4×30 1.66	30×25 1.66				25.4×45 2.01	30×35 1.99	35×30 2.00			30×40 2.06	35×30 2.03
470		22×45 1.88	25.4×35 1.86	30×30 1.89	35×25 1.88			25.4×45 2.20	30×40 2.27	35×30 2.23			30×50 2.40	35×35 2.33
560		22×50 2.10	25.4×40 2.09	30×35 2.14	35×25 2.06				30×45 2.56	35×35 2.49				35×40 2.60
680			25.4×50 2.44	30×40 2.43	35×30 2.46				30×50 2.88	35×40 2.87				35×45 2.96
820				30×45 2.75	35×35 2.77					35×45 3.25				35×50 3.04
1,000				30×50 3.31	35×40 3.32					35×50 3.69				
1,200					35×45 3.53									
1,500					35×50 4.04									

← Upper : Case size φDXL (mm)  
← Lower : Rated ripple current (Arms) at 85°C, 120Hz

μF	V <sub>dc</sub>		400				450				
	φ	D	22	25.4	30	35	22	25.4	30	35	
56							22×25 0.65				
68							22×25 0.71				
82		22×25 0.78					22×30 0.82	25.4×25 0.82			
100		22×30 0.90	25.4×25 0.90				22×35 0.93	25.4×25 0.90			
120		22×35 1.02	25.4×25 0.98				22×40 1.04	25.4×30 1.02	30×25 1.03		
150		22×40 1.16	25.4×30 1.14	30×25 1.16			22×45 1.19	25.4×35 1.19	30×30 1.19	35×25 1.19	
180		22×45 1.31	25.4×35 1.30	30×30 1.44	35×25 1.32		22×50 1.34	25.4×40 1.33	30×35 1.35	35×25 1.33	
220		22×45 1.49	25.4×40 1.47	30×30 1.47	35×25 1.47			25.4×50 1.54	30×40 1.55	35×30 1.53	
270		22×50 1.64	25.4×45 1.67	30×35 1.66	35×30 1.69				30×45 1.78	35×35 1.73	
330			25.4×50 1.88	30×40 1.90	35×30 1.87				30×50 2.01	35×40 2.00	
390				30×45 2.13	35×35 2.08					35×45 2.24	
470				30×50 2.40	35×40 2.39					35×50 2.53	
560					35×45 2.69						
680					35×50 3.04						

← Upper : Case size φDXL (mm)  
← Lower : Rated ripple current (Arms) at 85°C, 120Hz