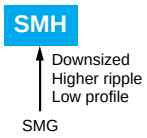
SMH Series

- Downsized from current standard SMG series
- Endurance with ripple current : 2,000 hours at 85℃
- For power supply input filtering
- Non solvent resistant type
- **RoHS Compliant**

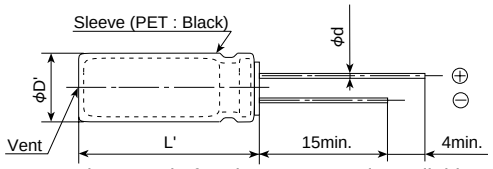


◆SPECIFICATIONS

Items	Characteristics			
Category Temperature Range	−25 to +85℃			
Rated Voltage Range	160 to 450Vdc			
Capacitance Tolerance	±20% (M)			(at 20℃, 120Hz)
Leakage Current	I=0.03CV or 3 mA, whichever is smaller. Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)			(at 20℃ after 5 minutes)
Dissipation Factor (tanδ)	0.15max.			(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (Vdc)	160 to 250V	400 & 450V	
	Z(−25℃)/Z(+20℃)	4	6	(at 120Hz)
Endurance	The following specifications shall be satisfied when the capacitors are restored to 20℃ after subjected to DC voltage with the rated ripple current is applied for 2,000 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 1,000 hours at 85℃ without voltage applied. Before the measurement, the capacitor shall be preconditioned by applying voltage according to Item 4.1 of JIS C 5101-4.			
	Capacitance change	≦±20% of the initial value		
	D.F. (tanδ)	≦200% of the initial specified value		
	Leakage current	≦500% of the initial specified value		

◆DIMENSIONS [mm]

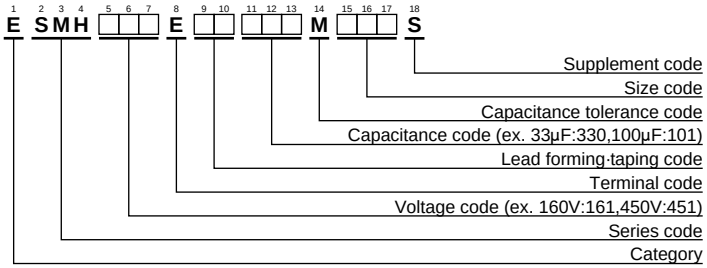
●Terminal Code : E



ϕD	20	22
ϕd	1.0	
F	10.0	
ϕD'	ϕD+0.5max.	
L'	L+2.0max.	

*Note : The snap-in forming type "RC" is available upon request, the RC type fits two ϕ2mm holes with 10.5mm spacing.

◆PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"

SMH Series

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size ϕD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
160	180	20×20	0.15	900	ESMH161E□□181MN20S
	180	22×20	0.15	950	ESMH161E□□181MP20S
	220	20×25	0.15	1,070	ESMH161E□□221MN25S
	220	22×25	0.15	1,160	ESMH161E□□221MP25S
	270	20×30	0.15	1,290	ESMH161E□□271MN30S
	270	22×25	0.15	1,290	ESMH161E□□271MP25S
	330	20×30	0.15	1,430	ESMH161E□□331MN30S
	330	22×30	0.15	1,530	ESMH161E□□331MP30S
	390	20×30	0.15	1,550	ESMH161E□□391MN30S
	390	22×30	0.15	1,670	ESMH161E□□391MP30S
	470	20×35	0.15	1,780	ESMH161E□□471MN35S
	470	22×30	0.15	1,830	ESMH161E□□471MP30S
200	150	20×20	0.15	820	ESMH201E□□151MN20S
	150	22×20	0.15	870	ESMH201E□□151MP20S
	180	20×25	0.15	970	ESMH201E□□181MN25S
	180	22×25	0.15	1,050	ESMH201E□□181MP25S
	220	20×25	0.15	1,070	ESMH201E□□221MN25S
	220	22×25	0.15	1,160	ESMH201E□□221MP25S
	270	20×30	0.15	1,290	ESMH201E□□271MN30S
	270	22×30	0.15	1,390	ESMH201E□□271MP30S
	330	20×35	0.15	1,490	ESMH201E□□331MN35S
	330	22×30	0.15	1,530	ESMH201E□□331MP30S
	390	20×35	0.15	1,620	ESMH201E□□391MN35S
	390	22×30	0.15	1,670	ESMH201E□□391MP30S
	470	20×40	0.15	1,900	ESMH201E□□471MN40S
	470	22×35	0.15	1,920	ESMH201E□□471MP35S
250	100	20×20	0.15	670	ESMH251E□□101MN20S
	120	20×25	0.15	850	ESMH251E□□121MN25S
	120	22×20	0.15	830	ESMH251E□□121MP20S
	150	20×25	0.15	940	ESMH251E□□151MN25S
	150	22×25	0.15	1,030	ESMH251E□□151MP25S
	180	20×30	0.15	1,120	ESMH251E□□181MN30S
	180	22×25	0.15	1,120	ESMH251E□□181MP25S
	220	20×30	0.15	1,240	ESMH251E□□221MN30S
	220	22×30	0.15	1,330	ESMH251E□□221MP30S
	270	20×35	0.15	1,440	ESMH251E□□271MN35S
	270	22×30	0.15	1,470	ESMH251E□□271MP30S
	330	20×40	0.15	1,700	ESMH251E□□331MN40S

WV (Vdc)	Cap (μF)	Case size ϕD×L(mm)	tanδ	Rated ripple current (mArms/ 85℃,120Hz)	Part No.
250	330	22×35	0.15	1,710	ESMH251E□□331MP35S
	390	20×45	0.15	1,930	ESMH251E□□391MN45S
	390	22×40	0.15	2,000	ESMH251E□□391MP40S
	470	20×50	0.15	2,190	ESMH251E□□471MN50S
	470	22×45	0.15	2,290	ESMH251E□□471MP45S
400	47	20×20	0.15	480	ESMH401E□□470MN20S
	56	20×25	0.15	570	ESMH401E□□560MN25S
	56	22×25	0.15	620	ESMH401E□□560MP25S
	68	20×25	0.15	640	ESMH401E□□680MN25S
	68	22×25	0.15	690	ESMH401E□□680MP25S
	82	20×30	0.15	750	ESMH401E□□820MN30S
	82	22×25	0.15	780	ESMH401E□□820MP25S
	100	20×35	0.15	870	ESMH401E□□101MN35S
	100	22×30	0.15	900	ESMH401E□□101MP30S
	120	20×40	0.15	1,020	ESMH401E□□121MN40S
	120	22×35	0.15	1,030	ESMH401E□□121MP35S
	150	20×45	0.15	1,200	ESMH401E□□151MN45S
	150	22×40	0.15	1,240	ESMH401E□□151MP40S
	180	20×50	0.15	1,360	ESMH401E□□181MN50S
	180	22×45	0.15	1,410	ESMH401E□□181MP45S
	220	22×50	0.15	1,590	ESMH401E□□221MP50S
450	33	20×20	0.15	400	ESMH451E□□330MN20S
	47	20×25	0.15	520	ESMH451E□□470MN25S
	47	22×25	0.15	570	ESMH451E□□470MP25S
	56	20×30	0.15	620	ESMH451E□□560MN30S
	56	22×25	0.15	650	ESMH451E□□560MP25S
	68	20×35	0.15	720	ESMH451E□□680MN35S
	68	22×30	0.15	690	ESMH451E□□680MP30S
	82	20×35	0.15	790	ESMH451E□□820MN35S
	82	22×30	0.15	800	ESMH451E□□820MP30S
	100	20×40	0.15	920	ESMH451E□□101MN40S
	100	22×35	0.15	940	ESMH451E□□101MP35S
	120	20×45	0.15	1,070	ESMH451E□□121MN45S
	120	22×40	0.15	1,110	ESMH451E□□121MP40S
	150	20×50	0.15	1,240	ESMH451E□□151MN50S
	150	22×45	0.15	1,290	ESMH451E□□151MP45S
	180	22×50	0.15	1,440	ESMH451E□□181MP50S

□□ : Enter the appropriate lead forming or taping code.

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

Frequency (Hz)	50	120	300	1k	10k	50k
160 to 250Vdc	0.81	1.00	1.17	1.32	1.45	1.50
400 & 450Vdc	0.77	1.00	1.16	1.30	1.41	1.43

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5℃ rise. When long life performance is required in actual use, the rms ripple current has to be reduced.