

SMM Series

- Longer life from SMQ series
- Endurance with ripple current : 3,000 hours at 85°C
- Non solvent resistant type
- RoHS2 Compliant

SMM

↑ Longer life
SMQ



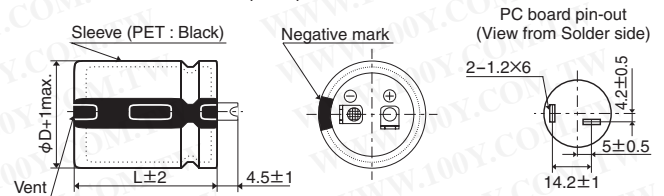
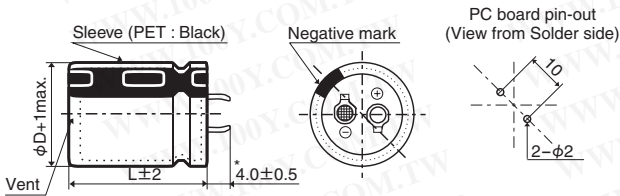
SPECIFICATIONS

Items	Characteristics		
Category	-25 to +85°C		
Temperature Range	-25 to +85°C		
Rated Voltage Range	160 to 450V _{dc}		
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)		
Leakage Current	I ≤ 3/CV Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V) (at 20°C after 5 minutes)		
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	160 to 400V	420 & 450V
	tan δ (Max.)	0.15	0.20
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	160 to 400V	420 & 450V
	Z(-25°C)/Z(+20°C)	4	8
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 (the peak voltage shall not exceed the rated voltage) for 3,000 hours at 85°C.		
	Capacitance change	≤ ±20% of the initial value	
	D.F. (tan δ)	≤ 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 1,000 hours at 85°C 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	≤ ±15% of the initial value	
	D.F. (tan δ)	≤ 150% of the initial specified value	
	Leakage current	≤ The initial specified value	

DIMENSIONS [mm]

● Terminal Code : VS (φ22 to φ35) : Standard

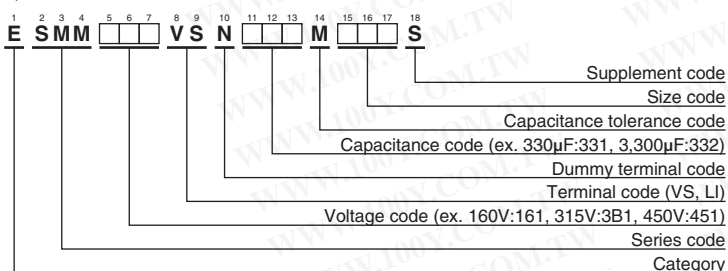
● Terminal Code : LI (φ35)



* φD=35mm : 3.5 ± 0.5mm

The standard design has no plastic disc.

PART NUMBERING SYSTEM



Please refer to "Product code guide (snap-in type)"

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
160 to 250V _{dc}	0.81	1.00	1.17	1.32	1.45	1.50
315 to 450V _{dc}	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°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

◆ STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/85°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/85°C, 120Hz)	Part No.
250	330	22 × 30	0.15	1.66	ESMM251VSN331MP30S	350	180	30 × 20	0.15	1.16	ESMM351VSN181MR20S
	330	25.4 × 25	0.15	1.61	ESMM251VSN331MQ25S		220	22 × 35	0.15	1.47	ESMM351VSN221MP35S
	330	30 × 20	0.15	1.58	ESMM251VSN331MR20S		220	25.4 × 30	0.15	1.53	ESMM351VSN221MQ30S
	390	22 × 35	0.15	1.88	ESMM251VSN391MP35S		220	30 × 25	0.15	1.54	ESMM351VSN221MR25S
	390	25.4 × 30	0.15	1.88	ESMM251VSN391MQ30S		220	35 × 20	0.15	1.29	ESMM351VSN221MA20S
	390	30 × 25	0.15	1.86	ESMM251VSN391MR25S		270	22 × 40	0.15	1.70	ESMM351VSN271MP40S
	390	35 × 20	0.15	1.71	ESMM251VSN391MA20S		270	25.4 × 35	0.15	1.73	ESMM351VSN271MQ35S
	470	22 × 35	0.15	2.15	ESMM251VSN471MP35S		270	30 × 25	0.15	1.80	ESMM351VSN271MR25S
	470	25.4 × 35	0.15	2.15	ESMM251VSN471MQ35S		270	35 × 20	0.15	1.49	ESMM351VSN271MA20S
	470	30 × 25	0.15	2.05	ESMM251VSN471MR25S		330	22 × 45	0.15	1.87	ESMM351VSN331MP45S
	470	35 × 20	0.15	1.88	ESMM251VSN471MA20S		330	25.4 × 35	0.15	1.97	ESMM351VSN331MQ35S
	560	22 × 40	0.15	2.48	ESMM251VSN561MP40S		330	30 × 30	0.15	2.03	ESMM351VSN331MR30S
	560	25.4 × 35	0.15	2.35	ESMM251VSN561MQ35S		330	35 × 25	0.15	1.80	ESMM351VSN331MA25S
	560	30 × 25	0.15	2.35	ESMM251VSN561MR25S		390	25.4 × 40	0.15	2.14	ESMM351VSN391MQ40S
	680	22 × 50	0.15	2.61	ESMM251VSN681MP50S		390	30 × 35	0.15	2.23	ESMM351VSN391MR35S
	680	25.4 × 40	0.15	2.67	ESMM251VSN681MQ40S		390	35 × 30	0.15	2.30	ESMM351VSN391MA30S
	680	30 × 30	0.15	2.71	ESMM251VSN681MR30S		470	25.4 × 50	0.15	2.55	ESMM351VSN471MQ50S
	680	35 × 25	0.15	2.58	ESMM251VSN681MA25S		470	30 × 35	0.15	2.53	ESMM351VSN471MR35S
	820	25.4 × 45	0.15	3.01	ESMM251VSN821MQ45S		470	35 × 30	0.15	2.55	ESMM351VSN471MA30S
	820	30 × 35	0.15	2.98	ESMM251VSN821MR35S		560	30 × 40	0.15	2.73	ESMM351VSN561MR40S
820	35 × 30	0.15	2.96	ESMM251VSN821MA30S	560	35 × 35	0.15	2.75	ESMM351VSN561MA35S		
1,000	30 × 40	0.15	3.56	ESMM251VSN102MR40S	680	30 × 50	0.15	3.15	ESMM351VSN681MR50S		
1,000	35 × 35	0.15	3.48	ESMM251VSN102MA35S	680	35 × 40	0.15	3.15	ESMM351VSN681MA40S		
1,200	30 × 45	0.15	3.99	ESMM251VSN122MR45S	820	35 × 45	0.15	3.47	ESMM351VSN821MA45S		
1,200	35 × 35	0.15	3.84	ESMM251VSN122MA35S	1,000	35 × 50	0.15	3.60	ESMM351VSN102MA50S		
1,500	35 × 40	0.15	4.33	ESMM251VSN152MA40S	68	22 × 20	0.15	0.65	ESMM401VSN680MP20S		
1,800	35 × 50	0.15	4.54	ESMM251VSN182MA50S	82	22 × 25	0.15	0.84	ESMM401VSN820MP25S		
315	100	22 × 20	0.15	0.79	ESMM3B1VSN101MP20S	82	25.4 × 20	0.15	0.74	ESMM401VSN820MQ20S	
	120	25.4 × 20	0.15	0.90	ESMM3B1VSN121MQ20S	100	22 × 25	0.15	0.99	ESMM401VSN101MP25S	
	150	22 × 25	0.15	1.06	ESMM3B1VSN151MP25S	100	25.4 × 20	0.15	0.82	ESMM401VSN101MQ20S	
	150	25.4 × 20	0.15	1.00	ESMM3B1VSN151MQ20S	120	22 × 30	0.15	1.09	ESMM401VSN121MP30S	
	180	22 × 30	0.15	1.29	ESMM3B1VSN181MP30S	120	25.4 × 25	0.15	1.13	ESMM401VSN121MQ25S	
	180	25.4 × 25	0.15	1.38	ESMM3B1VSN181MQ25S	120	30 × 20	0.15	0.95	ESMM401VSN121MR20S	
	180	30 × 20	0.15	1.16	ESMM3B1VSN181MR20S	150	22 × 35	0.15	1.24	ESMM401VSN151MP35S	
	220	22 × 30	0.15	1.41	ESMM3B1VSN221MP30S	150	25.4 × 30	0.15	1.27	ESMM401VSN151MQ30S	
	220	25.4 × 25	0.15	1.47	ESMM3B1VSN221MQ25S	150	30 × 25	0.15	1.20	ESMM401VSN151MR25S	
	220	30 × 20	0.15	1.28	ESMM3B1VSN221MR20S	180	22 × 40	0.15	1.41	ESMM401VSN181MP40S	
	270	22 × 35	0.15	1.68	ESMM3B1VSN271MP35S	180	25.4 × 30	0.15	1.44	ESMM401VSN181MQ30S	
	270	25.4 × 30	0.15	1.70	ESMM3B1VSN271MQ30S	180	30 × 25	0.15	1.52	ESMM401VSN181MR25S	
	270	30 × 25	0.15	1.55	ESMM3B1VSN271MR25S	180	35 × 20	0.15	1.16	ESMM401VSN181MA20S	
	270	35 × 20	0.15	1.43	ESMM3B1VSN271MA20S	220	22 × 45	0.15	1.58	ESMM401VSN221MP45S	
	330	22 × 40	0.15	1.91	ESMM3B1VSN331MP40S	220	25.4 × 35	0.15	1.64	ESMM401VSN221MQ35S	
	330	25.4 × 35	0.15	1.94	ESMM3B1VSN331MQ35S	220	30 × 30	0.15	1.66	ESMM401VSN221MR30S	
	330	30 × 25	0.15	1.98	ESMM3B1VSN331MR25S	220	35 × 25	0.15	1.47	ESMM401VSN221MA25S	
	390	22 × 45	0.15	2.07	ESMM3B1VSN391MP45S	270	22 × 50	0.15	1.65	ESMM401VSN271MP50S	
	390	25.4 × 40	0.15	2.11	ESMM3B1VSN391MQ40S	270	25.4 × 40	0.15	1.79	ESMM401VSN271MQ40S	
	390	30 × 30	0.15	2.15	ESMM3B1VSN391MR30S	270	30 × 30	0.15	1.82	ESMM401VSN271MR30S	
390	35 × 25	0.15	1.95	ESMM3B1VSN391MA25S	270	35 × 25	0.15	1.63	ESMM401VSN271MA25S		
470	25.4 × 45	0.15	2.31	ESMM3B1VSN471MQ45S	330	25.4 × 45	0.15	2.00	ESMM401VSN331MQ45S		
470	30 × 35	0.15	2.38	ESMM3B1VSN471MR35S	330	30 × 35	0.15	2.05	ESMM401VSN331MR35S		
470	35 × 30	0.15	2.46	ESMM3B1VSN471MA30S	330	35 × 30	0.15	2.05	ESMM401VSN331MA30S		
560	25.4 × 50	0.15	2.46	ESMM3B1VSN561MQ50S	390	25.4 × 50	0.15	2.12	ESMM401VSN391MQ50S		
560	30 × 35	0.15	2.63	ESMM3B1VSN561MR35S	390	30 × 40	0.15	2.26	ESMM401VSN391MR40S		
560	35 × 30	0.15	2.69	ESMM3B1VSN561MA30S	390	35 × 35	0.15	2.28	ESMM401VSN391MA35S		
680	30 × 45	0.15	2.82	ESMM3B1VSN681MR45S	470	30 × 45	0.15	2.51	ESMM401VSN471MR45S		
680	35 × 35	0.15	3.05	ESMM3B1VSN681MA35S	470	35 × 35	0.15	2.54	ESMM401VSN471MA35S		
820	30 × 50	0.15	3.28	ESMM3B1VSN821MR50S	560	30 × 50	0.15	2.85	ESMM401VSN561MR50S		
820	35 × 40	0.15	3.45	ESMM3B1VSN821MA40S	560	35 × 40	0.15	2.85	ESMM401VSN561MA40S		
1,000	35 × 45	0.15	3.59	ESMM3B1VSN102MA45S	680	35 × 50	0.15	3.10	ESMM401VSN681MA50S		
350	82	22 × 20	0.15	0.72	ESMM351VSN820MP20S	420	47	22 × 20	0.20	0.54	ESMM421VSN820MP20S
	120	22 × 25	0.15	1.04	ESMM351VSN121MP25S		56	22 × 20	0.20	0.59	ESMM421VSN560MP20S
	120	25.4 × 20	0.15	0.90	ESMM351VSN121MQ20S		68	25.4 × 20	0.20	0.68	ESMM421VSN680MQ20S
	150	22 × 30	0.15	1.20	ESMM351VSN151MP30S		82	22 × 25	0.20	0.85	ESMM421VSN820MP25S
	150	25.4 × 25	0.15	1.22	ESMM351VSN151MQ25S		82	25.4 × 20	0.20	0.74	ESMM421VSN820MQ20S
	150	30 × 20	0.15	1.06	ESMM351VSN151MR20S		100	22 × 30	0.20	0.97	ESMM421VSN101MP30S
	180	22 × 30	0.15	1.34	ESMM351VSN181MP30S		100	25.4 × 25	0.20	0.98	ESMM421VSN101MQ25S
	180	25.4 × 25	0.15	1.37	ESMM351VSN181MQ25S		100	30 × 20	0.20	0.87	ESMM421VSN101MR20S

SMM Series

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/85°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/85°C, 120Hz)	Part No.
420	120	22 × 30	0.20	1.07	ESMM421VSN121MP30S	450	82	25.4 × 20	0.20	0.74	ESMM451VSN820MQ20S
	120	25.4 × 25	0.20	1.08	ESMM421VSN121MQ25S		82	30 × 20	0.20	0.79	ESMM451VSN820MR20S
	120	30 × 20	0.20	0.95	ESMM421VSN121MR20S		100	22 × 30	0.20	0.95	ESMM451VSN101MP30S
	150	22 × 35	0.20	1.21	ESMM421VSN151MP35S		100	25.4 × 25	0.20	0.97	ESMM451VSN101MQ25S
	150	25.4 × 30	0.20	1.26	ESMM421VSN151MQ30S		100	30 × 20	0.20	0.87	ESMM451VSN101MR20S
	150	30 × 25	0.20	1.30	ESMM421VSN151MR25S		120	22 × 35	0.20	1.07	ESMM451VSN121MP35S
	150	35 × 20	0.20	1.11	ESMM421VSN151MA20S		120	25.4 × 30	0.20	1.09	ESMM451VSN121MQ30S
	180	22 × 40	0.20	1.33	ESMM421VSN181MP40S		120	30 × 25	0.20	1.12	ESMM451VSN121MR25S
	180	25.4 × 35	0.20	1.42	ESMM421VSN181MQ35S		120	35 × 20	0.20	0.99	ESMM451VSN121MA20S
	180	30 × 25	0.20	1.48	ESMM421VSN181MR25S		150	22 × 40	0.20	1.18	ESMM451VSN151MP40S
	180	35 × 20	0.20	1.16	ESMM421VSN181MA20S		150	25.4 × 30	0.20	1.25	ESMM451VSN151MQ30S
	220	22 × 45	0.20	1.55	ESMM421VSN221MP45S		150	30 × 25	0.20	1.29	ESMM451VSN151MR25S
	220	25.4 × 35	0.20	1.58	ESMM421VSN221MQ35S		150	35 × 20	0.20	1.06	ESMM451VSN151MA20S
	220	30 × 30	0.20	1.65	ESMM421VSN221MR30S		180	22 × 45	0.20	1.32	ESMM451VSN181MP45S
	220	35 × 25	0.20	1.47	ESMM421VSN221MA25S		180	25.4 × 35	0.20	1.40	ESMM451VSN181MQ35S
	270	25.4 × 40	0.20	1.74	ESMM421VSN271MQ40S		180	30 × 30	0.20	1.45	ESMM451VSN181MR30S
	270	30 × 35	0.20	1.90	ESMM421VSN271MR35S		180	35 × 25	0.20	1.33	ESMM451VSN181MA25S
	270	35 × 30	0.20	1.94	ESMM421VSN271MA30S		220	22 × 50	0.20	1.48	ESMM451VSN221MP50S
	330	25.4 × 50	0.20	2.20	ESMM421VSN331MQ50S		220	25.4 × 40	0.20	1.59	ESMM451VSN221MQ40S
	330	30 × 35	0.20	1.98	ESMM421VSN331MR35S		220	30 × 30	0.20	1.64	ESMM451VSN221MR30S
330	35 × 35	0.20	2.17	ESMM421VSN331MA35S	220	35 × 25	0.20	1.66	ESMM451VSN221MA25S		
390	30 × 40	0.20	2.22	ESMM421VSN391MR40S	270	25.4 × 45	0.20	1.73	ESMM451VSN271MQ45S		
390	35 × 35	0.20	2.27	ESMM421VSN391MA35S	270	30 × 35	0.20	1.89	ESMM451VSN271MR35S		
470	30 × 45	0.20	2.50	ESMM421VSN471MR45S	270	35 × 30	0.20	1.90	ESMM451VSN271MA30S		
470	35 × 40	0.20	2.61	ESMM421VSN471MA40S	330	25.4 × 50	0.20	2.12	ESMM451VSN331MQ50S		
560	35 × 45	0.20	2.95	ESMM421VSN561MA45S	330	30 × 40	0.20	2.12	ESMM451VSN331MR40S		
680	35 × 50	0.20	3.15	ESMM421VSN681MA50S	330	35 × 35	0.20	2.15	ESMM451VSN331MA35S		
450	47	22 × 20	0.20	0.54	ESMM451VSN470MP20S	390	30 × 45	0.20	2.35	ESMM451VSN391MR45S	
	56	22 × 20	0.20	0.59	ESMM451VSN560MP20S	390	35 × 40	0.20	2.38	ESMM451VSN391MA40S	
	68	22 × 25	0.20	0.71	ESMM451VSN680MP25S	470	30 × 50	0.20	2.65	ESMM451VSN471MR50S	
	68	25.4 × 20	0.20	0.68	ESMM451VSN680MQ20S	470	35 × 45	0.20	2.68	ESMM451VSN471MA45S	
	82	22 × 25	0.20	0.86	ESMM451VSN820MP25S	560	35 × 50	0.20	2.88	ESMM451VSN561MA50S	

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)