

SMQ Series

- Endurance with ripple current : 2,000 hours at 85°C
- Non solvent resistant type
- RoHS2 Compliant



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 250V	315 to 400V	420 & 450V
	tan δ (Max.)	0.15	0.15	0.20 (at 20°C, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	160 to 250V	315 to 400V	420 & 450V
	Z(-25°C)/Z(+20°C)	4	8	8 (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 (the peak voltage shall not exceed the rated voltage) for 2,000 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)



The standard design has no plastic disc.

PART NUMBERING SYSTEM



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

◆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.	
350	1,000	35 × 50	0.15	3.54	ESMQ351VSN102MA50S	420	270	30 × 30	0.20	1.94	ESMQ421VSN271MR30S	
	120	22 × 25	0.15	1.02	ESMQ401VSN121MP25S		330	25.4 × 45	0.20	2.17	ESMQ421VSN331MQ45S	
	150	22 × 30	0.15	1.16	ESMQ401VSN151MP30S		330	30 × 35	0.20	2.17	ESMQ421VSN331MR35S	
	180	22 × 35	0.15	1.44	ESMQ401VSN181MP35S		330	35 × 30	0.20	2.17	ESMQ421VSN331MA30S	
	220	22 × 40	0.15	1.49	ESMQ401VSN221MP40S		390	25.4 × 50	0.20	2.27	ESMQ421VSN391MQ50S	
	220	25.4 × 30	0.15	1.49	ESMQ401VSN221MQ30S		390	30 × 35	0.20	2.27	ESMQ421VSN391MR35S	
	270	22 × 45	0.15	1.67	ESMQ401VSN271MP45S		390	35 × 30	0.20	2.27	ESMQ421VSN391MA30S	
	270	25.4 × 35	0.15	1.67	ESMQ401VSN271MQ35S		470	30 × 40	0.20	2.61	ESMQ421VSN471MR40S	
	270	30 × 25	0.15	1.67	ESMQ401VSN271MR25S		470	35 × 35	0.20	2.61	ESMQ421VSN471MA35S	
	330	22 × 50	0.15	1.90	ESMQ401VSN331MP50S		560	30 × 50	0.20	2.82	ESMQ421VSN561MR50S	
	330	25.4 × 40	0.15	1.90	ESMQ401VSN331MP40S		560	35 × 40	0.20	2.82	ESMQ421VSN561MA40S	
	330	30 × 30	0.15	1.90	ESMQ401VSN331MR30S		680	35 × 45	0.20	3.11	ESMQ421VSN681MA45S	
	330	35 × 25	0.15	1.90	ESMQ401VSN331MA25S		450	82	22 × 25	0.20	0.83	ESMQ451VSN820MP25S
	390	25.4 × 45	0.15	2.13	ESMQ401VSN391MQ45S			100	22 × 25	0.20	0.93	ESMQ451VSN101MP25S
	390	30 × 35	0.15	2.13	ESMQ401VSN391MP35S			120	22 × 30	0.20	1.04	ESMQ451VSN121MP30S
	390	35 × 30	0.15	2.13	ESMQ401VSN391MA30S			150	22 × 35	0.20	1.19	ESMQ451VSN151MP35S
470	25.4 × 50	0.15	2.39	ESMQ401VSN471MQ50S	150	25.4 × 25		0.20	1.19	ESMQ451VSN151MQ25S		
470	30 × 40	0.15	2.39	ESMQ401VSN471MR40S	180	22 × 40		0.20	1.35	ESMQ451VSN181MP40S		
470	35 × 30	0.15	2.39	ESMQ401VSN471MA30S	180	25.4 × 30		0.20	1.35	ESMQ451VSN181MQ30S		
560	30 × 45	0.15	2.69	ESMQ401VSN561MR45S	220	22 × 45		0.20	1.55	ESMQ451VSN221MP45S		
560	35 × 35	0.15	2.69	ESMQ401VSN561MA35S	220	25.4 × 40		0.20	1.55	ESMQ451VSN221MQ40S		
680	30 × 50	0.15	2.96	ESMQ401VSN681MR50S	220	30 × 30		0.20	1.55	ESMQ451VSN221MR30S		
680	35 × 40	0.15	2.96	ESMQ401VSN681MA40S	220	35 × 25		0.20	1.55	ESMQ451VSN221MA25S		
820	35 × 45	0.15	3.25	ESMQ401VSN821MA45S	270	22 × 50		0.20	1.78	ESMQ451VSN271MP50S		
400	100	22 × 25	0.20	0.97	ESMQ421VSN101MP25S	270		25.4 × 40	0.20	1.78	ESMQ451VSN271MQ40S	
	120	22 × 25	0.20	1.08	ESMQ421VSN121MP25S	270		30 × 30	0.20	1.78	ESMQ451VSN271MR30S	
	150	22 × 30	0.20	1.30	ESMQ421VSN151MP30S	330		25.4 × 50	0.20	2.01	ESMQ451VSN331MQ50S	
	150	25.4 × 25	0.20	1.30	ESMQ421VSN151MQ25S	330		30 × 40	0.20	2.01	ESMQ451VSN331MR40S	
	180	22 × 35	0.20	1.48	ESMQ421VSN181MP35S	330	35 × 30	0.20	2.01	ESMQ451VSN331MA30S		
	180	25.4 × 30	0.20	1.48	ESMQ421VSN181MQ30S	390	30 × 40	0.20	2.24	ESMQ451VSN391MR40S		
	220	22 × 40	0.20	1.65	ESMQ421VSN221MP40S	390	35 × 35	0.20	2.24	ESMQ451VSN391MA35S		
	220	25.4 × 35	0.20	1.65	ESMQ421VSN221MQ35S	470	30 × 45	0.20	2.53	ESMQ451VSN471MR45S		
	220	30 × 25	0.20	1.65	ESMQ421VSN221MR25S	470	35 × 40	0.20	2.53	ESMQ451VSN471MA40S		
	270	22 × 50	0.20	1.94	ESMQ421VSN271MP50S	560	30 × 50	0.20	2.82	ESMQ451VSN561MR50S		
	270	25.4 × 35	0.20	1.94	ESMQ421VSN271MQ35S	560	35 × 45	0.20	2.82	ESMQ451VSN561MA45S		

◆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.