

SMQ Series

- Downsized from current downsized snap-ins SMH series
- Endurance with ripple current : 2,000 hours at 85°C
- Non solvent-proof type
- RoHS Compliant

SMQ

↓
Downsized
SMH

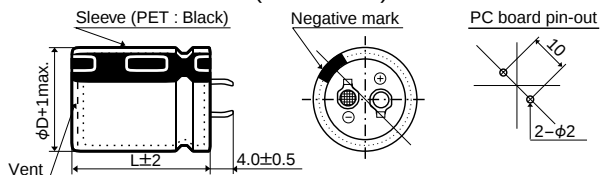


SPECIFICATIONS

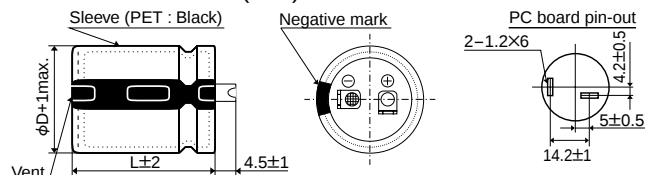
Items	Characteristics				
Category	Temperature Range				
Temperature Range	−25 to +85°C				
Rated Voltage Range	160 to 450V _{dc}				
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)				
Leakage Current	I≤3√CV Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 5 minutes)				
Dissipation Factor (tanδ)	Rated voltage (V _{dc})	160 to 250V	315 to 400V	420 & 450V	(at 20°C, 120Hz)
	tanδ (Max.)	0.15	0.15	0.20	
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	160 to 250V	315 to 400V	420 & 450V	(at 120Hz)
	Z(−25°C)/Z(+20°C)	4	8	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 for 2,000 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 1,000 hours at 85°C without voltage applied.				
	Capacitance change	≤±15% of the initial value			
	D.F. (tanδ)	≤150% of the initial specified value			
	Leakage current	≤The initial specified value			

DIMENSIONS [mm]

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

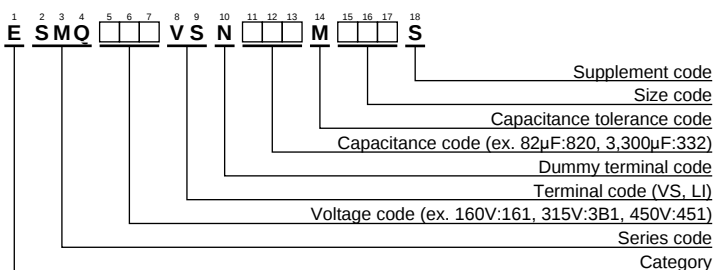


- Terminal Code : LI (φ35)



No plastic disk is the standard design.

PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (Arms/ 85°C,120Hz)	Part No.
160	560	22×25	0.15	2.25	ESMQ161VSN561MP25S
	680	22×30	0.15	2.50	ESMQ161VSN681MP30S
	820	22×35	0.15	2.75	ESMQ161VSN821MP35S
	1,000	22×40	0.15	3.00	ESMQ161VSN102MP40S
	1,000	25.4×30	0.15	3.00	ESMQ161VSN102MQ30S
	1,200	22×45	0.15	3.25	ESMQ161VSN122MP45S
	1,200	25.4×35	0.15	3.25	ESMQ161VSN122MQ35S
	1,200	30×25	0.15	3.25	ESMQ161VSN122MR25S
	1,500	22×50	0.15	3.73	ESMQ161VSN152MP50S
	1,500	25.4×40	0.15	3.73	ESMQ161VSN152MQ40S
	1,500	30×30	0.15	3.73	ESMQ161VSN152MR30S
	1,500	35×25	0.15	3.73	ESMQ161VSN152MA25S
	1,800	25.4×45	0.15	4.20	ESMQ161VSN182MP45S
	1,800	30×35	0.15	4.20	ESMQ161VSN182MR35S
	1,800	35×30	0.15	4.20	ESMQ161VSN182MA30S
	2,200	30×40	0.15	4.78	ESMQ161VSN222MR40S
	2,200	35×35	0.15	4.78	ESMQ161VSN222MA35S
	2,700	35×40	0.15	5.45	ESMQ161VSN272MA40S
	3,300	35×45	0.15	5.75	ESMQ161VSN332MA45S
	3,900	35×50	0.15	6.00	ESMQ161VSN392MA50S
180	470	22×25	0.15	2.08	ESMQ181VSN471MP25S
	560	22×30	0.15	2.25	ESMQ181VSN561MP30S
	680	22×30	0.15	2.50	ESMQ181VSN681MP30S
	680	25.4×25	0.15	2.50	ESMQ181VSN681MQ25S
	820	22×35	0.15	2.75	ESMQ181VSN821MP35S
	820	25.4×30	0.15	2.75	ESMQ181VSN821MQ30S
	1,000	22×45	0.15	3.00	ESMQ181VSN102MP45S
	1,000	25.4×35	0.15	3.00	ESMQ181VSN102MQ35S
	1,000	30×25	0.15	3.00	ESMQ181VSN102MR25S
	1,200	22×50	0.15	3.31	ESMQ181VSN122MP50S
	1,200	25.4×40	0.15	3.31	ESMQ181VSN122MQ40S
	1,200	30×30	0.15	3.31	ESMQ181VSN122MR30S
	1,200	35×25	0.15	3.31	ESMQ181VSN122MA25S
	1,500	25.4×45	0.15	3.83	ESMQ181VSN152MP45S
	1,500	30×35	0.15	3.83	ESMQ181VSN152MR35S
	1,500	35×30	0.15	3.83	ESMQ181VSN152MA30S
	1,800	25.4×50	0.15	4.32	ESMQ181VSN182MQ50S
	1,800	30×40	0.15	4.32	ESMQ181VSN182MR40S
	1,800	35×30	0.15	4.32	ESMQ181VSN182MA30S
200	2,200	30×45	0.15	4.92	ESMQ181VSN222MR45S
	2,200	35×40	0.15	4.92	ESMQ181VSN222MA40S
	2,700	35×45	0.15	5.52	ESMQ181VSN272MA45S
	3,300	35×50	0.15	5.75	ESMQ181VSN332MA50S
	390	22×25	0.15	1.68	ESMQ201VSN391MP25S
	470	22×30	0.15	1.85	ESMQ201VSN471MP30S
	560	22×30	0.15	2.43	ESMQ201VSN561MP30S
	560	25.4×25	0.15	2.43	ESMQ201VSN561MQ25S
	680	22×35	0.15	2.68	ESMQ201VSN681MP35S
	680	25.4×30	0.15	2.68	ESMQ201VSN681MQ30S
	820	22×40	0.15	2.93	ESMQ201VSN821MP40S
	820	25.4×30	0.15	2.93	ESMQ201VSN821MQ30S
	820	30×25	0.15	2.93	ESMQ201VSN821MR25S
	1,000	22×45	0.15	3.25	ESMQ201VSN102MP45S
	1,000	25.4×35	0.15	3.25	ESMQ201VSN102MQ35S
	1,000	30×30	0.15	3.25	ESMQ201VSN102MR30S
	1,000	35×25	0.15	3.25	ESMQ201VSN102MA25S
	1,200	25.4×40	0.15	3.50	ESMQ201VSN122MQ40S
	1,200	30×30	0.15	3.50	ESMQ201VSN122MR30S
	1,200	35×30	0.15	3.50	ESMQ201VSN122MA30S
250	1,500	25.4×50	0.15	3.87	ESMQ201VSN152MQ50S
	1,500	30×35	0.15	3.87	ESMQ201VSN152MR35S
	1,500	35×30	0.15	3.87	ESMQ201VSN152MA30S
	1,800	30×45	0.15	4.32	ESMQ201VSN182MR45S
	1,800	35×35	0.15	4.32	ESMQ201VSN182MA35S
	2,200	30×50	0.15	4.92	ESMQ201VSN222MR50S
	2,200	35×40	0.15	4.92	ESMQ201VSN222MA40S
	2,700	35×50	0.15	5.45	ESMQ201VSN272MA50S
	270	22×25	0.15	1.31	ESMQ251VSN271MP25S
	330	22×30	0.15	1.75	ESMQ251VSN331MP30S
	390	22×30	0.15	1.91	ESMQ251VSN391MP30S
	390	25.4×25	0.15	1.91	ESMQ251VSN391MQ25S
	470	22×35	0.15	2.11	ESMQ251VSN471MP35S
	470	25.4×30	0.15	2.11	ESMQ251VSN471MQ30S
	560	22×40	0.15	2.25	ESMQ251VSN561MP40S
	560	25.4×30	0.15	2.25	ESMQ251VSN561MQ30S
	560	30×25	0.15	2.25	ESMQ251VSN561MR25S
	680	22×45	0.15	2.50	ESMQ251VSN681MP45S
	680	25.4×35	0.15	2.50	ESMQ251VSN681MQ35S
	680	30×30	0.15	2.50	ESMQ251VSN681MR30S
315	820	22×50	0.15	2.77	ESMQ251VSN821MP50S
	820	25.4×40	0.15	2.77	ESMQ251VSN821MQ40S
	820	30×30	0.15	2.77	ESMQ251VSN821MR30S
	820	35×25	0.15	2.77	ESMQ251VSN821MA25S
	1,000	25.4×45	0.15	3.32	ESMQ251VSN102MQ45S
	1,000	30×35	0.15	3.32	ESMQ251VSN102MR35S
	1,000	35×30	0.15	3.32	ESMQ251VSN102MA30S
	1,200	30×40	0.15	3.53	ESMQ251VSN122MR40S
	1,200	35×35	0.15	3.53	ESMQ251VSN122MA35S
	1,500	30×50	0.15	4.04	ESMQ251VSN152MR50S
	1,500	35×40	0.15	4.04	ESMQ251VSN152MA40S
	1,800	35×45	0.15	4.55	ESMQ251VSN182MA45S
	180	22×25	0.15	1.21	ESMQ3B1VSN181MP25S
	220	22×30	0.15	1.41	ESMQ3B1VSN221MP30S
	270	22×30	0.15	1.60	ESMQ3B1VSN271MP30S
	330	22×40	0.15	1.82	ESMQ3B1VSN331MP40S
	330	25.4×30	0.15	1.82	ESMQ3B1VSN331MQ30S
	330	30×25	0.15	1.82	ESMQ3B1VSN331MR25S
	390	22×45	0.15	2.01	ESMQ3B1VSN391MP45S
	390	25.4×35	0.15	2.01	ESMQ3B1VSN391MQ35S
	390	30×30	0.15	2.01	ESMQ3B1VSN391MR30S
350	470	22×50	0.15	2.27	ESMQ3B1VSN471MP50S
	470	25.4×40	0.15	2.27	ESMQ3B1VSN471MQ40S
	470	30×30	0.15	2.27	ESMQ3B1VSN471MR30S
	470	35×25	0.15	2.27	ESMQ3B1VSN471MA25S
	560	25.4×45	0.15	2.56	ESMQ3B1VSN561MQ45S
	560	30×35	0.15	2.56	ESMQ3B1VSN561MR35S
	560	35×30	0.15	2.56	ESMQ3B1VSN561MA30S
	680	30×40	0.15	2.87	ESMQ3B1VSN681MR40S
	680	35×35	0.15	2.87	ESMQ3B1VSN681MA35S
	820	30×45	0.15	3.25	ESMQ3B1VSN821MR45S
	820	35×40	0.15	3.25	ESMQ3B1VSN821MA40S
	1,000	30×50	0.15	3.63	ESMQ3B1VSN102MR50S
	1,000	35×45	0.15	3.63	ESMQ3B1VSN102MA45S
	150	22×25	0.15	1.12	ESMQ351VSN151MP25S
	180	22×30	0.15	1.22	ESMQ351VSN181MP30S
	220	22×35	0.15	1.44	ESMQ351VSN221MP35S
	270	22×40	0.15	1.66	ESMQ351VSN271MP40S
	270	25.4×30	0.15	1.66	ESMQ351VSN271MQ30S
	330	22×45	0.15	1.88	ESMQ351VSN331MP45S
	330	25.4×35	0.15	1.88	ESMQ351VSN331MQ35S
	390	22×50	0.15	2.06	ESMQ351VSN391MP50S
	390	25.4×40	0.15	2.06	ESMQ351VSN391MQ40S
350	390	30×30	0.15	2.06	ESMQ351VSN391MR30S
	390	35×25	0.15	2.06	ESMQ351VSN391MA25S
	470	25.4×45	0.15	2.40	ESMQ351VSN471MQ45S
	470	30×35	0.15	2.40	ESMQ351VSN471MR35S
	470	35×30	0.15	2.40	ESMQ351VSN471MA30S
	560	25.4×50	0.15	2.60	ESMQ351VSN561MQ50S
	560	30×40	0.15	2.60	ESMQ351VSN561MR40S
	560	35×30	0.15	2.60	ESMQ351VSN561MA30S
	680	30×45	0.15	2.96	ESMQ351VSN681MR45S
	680	35×35	0.15	2.96	ESMQ351VSN681MA35S
	820	30×50	0.15	3.25	ESMQ351VSN821MR50S
	820	35×45	0.15	3.25	ESMQ351VSN821MA45S

◆STANDARD RATINGS

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (Arms/ 85°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	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
400	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	ESMQ401VSN331MQ40S		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	ESMQ401VSN391MR35S		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
420	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 shorted 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.

Mouser Electronics

Authorized Distributor

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United Chemi-Con (UCC):

ESMQ451VSN561MR50S	ESMQ401VSN271MR25S	ESMQ201VSN152MQ50S	ESMQ251VSN152MR50S
ESMQ251VSN182MA45S	ESMQ351VSN391MP50S	ESMQ351VSN821MR50S	ESMQ3B1VSN102MR50S
ESMQ201VSN102MQ35S	ESMQ161VSN332MA45S	ESMQ161VSN681MP30S	ESMQ251VSN681MQ35S
ESMQ251VSN391MP30S	ESMQ401VSN681MA40S	ESMQ251VSN471MQ25S	ESMQ201VSN222MA40S
ESMQ401VSN151MP30S	ESMQ251VSN821MA25W	ESMQ251VSN152MA40S	ESMQ351VSN561MR40S
ESMQ451VSN151MQ25S	ESMQ451VSN221MP45S	ESMQ251VSN561MP40S	ESMQ401VSN271MQ35S
ESMQ251VSN471MQ30S	ESMQ201VSN391MP25S	ESMQ451VSN181MQ30S	ESMQ451VSN121MP30S
ESMQ3B1VSN391MP45S	ESMQ401VSN221MP40S	ESMQ401VSN221MQ30S	ESMQ201VSN122MQ40S
ESMQ451VSN391MR40S	ESMQ401VSN331MA25S	ESMQ401VSN331MP50S	ESMQ401VSN471MQ50S
ESMQ161VSN152MR30S	ESMQ251VSN821MP50S	ESMQ201VSN681MQ30S	ESMQ201VSN471MP30T
ESMQ161VSN102MP40S	ESMQ201VSN182MR45S	ESMQ251VSN821MQ40S	ESMQ201VSN272MA50S
ESMQ251VSN681MP45S	ESMQ401VSN271MP45S	ESMQ451VSN561MA45S	ESMQ161VSN222MR40S
ESMQ251VSN122MR40S	ESMQ161VSN561MP25S	ESMQ451VSN331MA30S	ESMQ401VSN821MA45S
ESMQ401VSN561MR45S	ESMQ351VSN151MP25S	ESMQ401VSN681MR50S	ESMQ401VSN471MR40S
ESMQ201VSN102MP45S	ESMQ201VSN821MP40S	ESMQ161VSN182MR35S	ESMQ161VSN102MQ30S
ESMQ351VSN681MA35S	ESMQ351VSN102MA50S	ESMQ201VSN561MP30S	ESMQ451VSN181MP40S
ESMQ251VSN222MA50S	ESMQ451VSN101MP25S	ESMQ161VSN392MA50S	ESMQ161VSN821MP35S
ESMQ451VSN331MR40S	ESMQ451VSN820MP25S	ESMQ451VSN471MR45S	ESMQ251VSN102MR35S
ESMQ401VSN181MP35S	ESMQ251VSN471MP35S	ESMQ201VSN102MR30S	ESMQ451VSN271MP50S
ESMQ451VSN471MA40S	ESMQ451VSN331MQ50S	ESMQ201VSN222MR50S	ESMQ201VSN471MP30S
ESMQ201VSN681MP35S	ESMQ351VSN471MR35S		