SMR Series

- Endurance with ripple current : 2,000 hours at 85℃
- Downsized and high ripple current from SMQ series
- Non solvent resistant type
- RoHS2 Compliant

SMR
↑ Downsized Higher ripple
SMQ

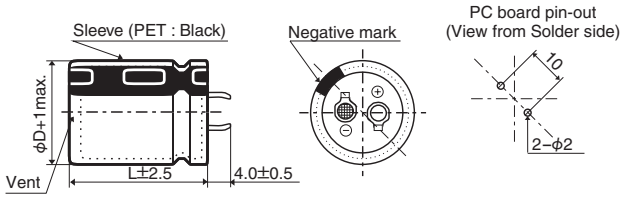


◆SPECIFICATIONS

Items	Characteristics			
Category Temperature Range	-25 to +85℃			
Rated Voltage Range	400 to 450V_{dc}			
Capacitance Tolerance	±20% (M)			(at 20℃, 120Hz)
Leakage Current	I≦3$\sqrt{CV}$ Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)			(at 20℃ after 5 minutes)
Dissipation Factor (tan δ)	Rated voltage (V_{dc})	400V	420 & 450V	
	tan δ (Max.)	0.15	0.20	(at 20℃, 120Hz)
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V_{dc})	400 to 450V		
	Z(-25℃)/Z(+20℃)	8		(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 (the peak voltage shall not exceed the rated voltage) for 2,000 hours at 85℃.			
	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℃ 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	≦±15% of the initial value		
	D. F. (tan δ)	≦150% of the initial specified value		
	Leakage current	≦The initial specified value		

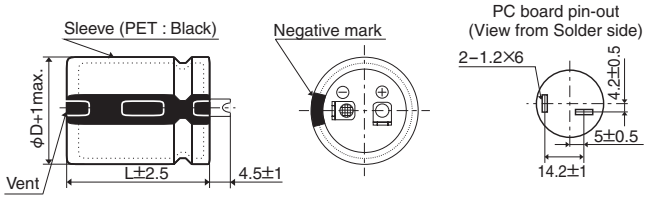
◆DIMENSIONS [mm]

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

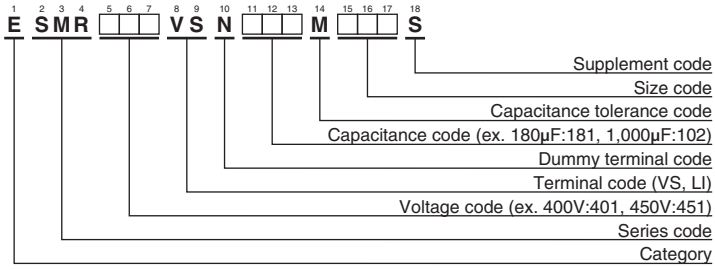


The standard design has no plastic disc.

●Terminal Code : LI (φ35)



◆PART NUMBERING SYSTEM



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

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SMR Series

◆STANDARD RATINGS

WV (V_{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 85℃, 120Hz)	Part No.
400	150	22×25	0.15	1.30	ESMR401VSN151MP25S
	180	22×30	0.15	1.49	ESMR401VSN181MP30S
	220	22×35	0.15	1.69	ESMR401VSN221MP35S
	220	25.4×25	0.15	1.65	ESMR401VSN221MQ25S
	270	22×40	0.15	1.90	ESMR401VSN271MP40S
	270	25.4×30	0.15	1.88	ESMR401VSN271MQ30S
	330	22×45	0.15	2.15	ESMR401VSN331MP45S
	330	25.4×35	0.15	2.16	ESMR401VSN331MQ35S
	330	30×25	0.15	2.10	ESMR401VSN331MR25S
	390	22×50	0.15	2.40	ESMR401VSN391MP50S
	390	25.4×40	0.15	2.40	ESMR401VSN391MQ40S
	390	30×30	0.15	2.32	ESMR401VSN391MR30S
	390	35×25	0.15	2.05	ESMR401VSN391MA25S
	470	25.4×45	0.15	2.69	ESMR401VSN471MQ45S
	470	30×35	0.15	2.60	ESMR401VSN471MR35S
	470	35×30	0.15	2.28	ESMR401VSN471MA30S
	560	30×40	0.15	2.92	ESMR401VSN561MR40S
	560	35×30	0.15	2.48	ESMR401VSN561MA30S
	680	30×45	0.15	3.30	ESMR401VSN681MR45S
	680	35×35	0.15	2.79	ESMR401VSN681MA35S
	820	35×45	0.15	3.25	ESMR401VSN821MA45S
	1,000	35×50	0.15	3.66	ESMR401VSN102MA50S
420	120	22×25	0.20	1.15	ESMR421VSN121MP25S
	180	22×30	0.20	1.48	ESMR421VSN181MP30S
	180	25.4×25	0.20	1.51	ESMR421VSN181MQ25S
	220	22×35	0.20	1.68	ESMR421VSN221MP35S
	220	25.4×30	0.20	1.71	ESMR421VSN221MQ30S
	270	22×45	0.20	1.94	ESMR421VSN271MP45S
	270	25.4×35	0.20	1.99	ESMR421VSN271MQ35S
	270	30×25	0.20	1.87	ESMR421VSN271MR25S
	330	22×50	0.20	2.20	ESMR421VSN331MP50S
	330	25.4×40	0.20	2.24	ESMR421VSN331MQ40S
	330	30×30	0.20	2.08	ESMR421VSN331MR30S

WV (V_{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/ 85℃, 120Hz)	Part No.
420	330	35×25	0.20	1.99	ESMR421VSN331MA25S
	390	25.4×45	0.20	2.47	ESMR421VSN391MQ45S
	390	30×35	0.20	2.32	ESMR421VSN391MR35S
	470	25.4×50	0.20	2.77	ESMR421VSN471MQ50S
	470	30×40	0.20	2.61	ESMR421VSN471MR40S
	470	35×30	0.20	2.41	ESMR421VSN471MA30S
	560	30×45	0.20	2.93	ESMR421VSN561MR45S
	560	35×35	0.20	2.67	ESMR421VSN561MA35S
	680	30×50	0.20	3.28	ESMR421VSN681MR50S
	680	35×40	0.20	3.11	ESMR421VSN681MA40S
	820	35×45	0.20	3.43	ESMR421VSN821MA45S
450	120	22×25	0.20	1.12	ESMR451VSN121MP25S
	150	22×30	0.20	1.32	ESMR451VSN151MP30S
	180	22×35	0.20	1.49	ESMR451VSN181MP35S
	180	25.4×25	0.20	1.42	ESMR451VSN181MQ25S
	220	22×40	0.20	1.67	ESMR451VSN221MP40S
	220	25.4×30	0.20	1.66	ESMR451VSN221MQ30S
	220	30×25	0.20	1.68	ESMR451VSN221MR25S
	270	22×45	0.20	1.88	ESMR451VSN271MP45S
	270	25.4×35	0.20	1.87	ESMR451VSN271MQ35S
	330	25.4×40	0.20	2.11	ESMR451VSN331MQ40S
	330	30×30	0.20	2.10	ESMR451VSN331MR30S
	330	35×25	0.20	2.10	ESMR451VSN331MA25S
	390	25.4×50	0.20	2.37	ESMR451VSN391MQ50S
	390	30×35	0.20	2.32	ESMR451VSN391MR35S
	390	35×30	0.20	2.32	ESMR451VSN391MA30S
	470	30×40	0.20	2.66	ESMR451VSN471MR40S
	470	35×35	0.20	2.54	ESMR451VSN471MA35S
	560	30×45	0.20	2.93	ESMR451VSN561MR45S
	560	35×40	0.20	2.87	ESMR451VSN561MA40S
	680	35×45	0.20	3.21	ESMR451VSN681MA45S
	820	35×50	0.20	3.60	ESMR451VSN821MA50S

◆RATED RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Frequency(Hz)	50	120	300	1k	10k	50k
400 to 450V_{dc}	0.77	1.00	1.16	1.30	1.41	1.43

The deterioration of aluminum electrolytic capacitors accelerates their life due to the internal heating produced by ripple current. For details, refer to Section "5-3 Ripple Current Effect on Lifetime" in the catalog, Technical Note.

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■ Always read "Notes on Use" before using the product in order to enable you to use the product correctly and prevent any faults and accidents from occurring.

■ Request the Product Specification on the product of NIPPON CHEMI-CON CORPORATION to refer to it as well as this brochure prior to the order of the products. Some specific notes on use of the ordered product may be described in the specifications.

■ The products listed in this catalog are designed and manufactured for general electronics equipment use and are not intended for use in applications that can adversely affect human life; where the malfunction of equipment may cause damage to life or property. In addition, our products are not intended to be used in specific applications that may cause a major social impact. Please consult with us in advance of usage of our products in the following listed applications. ① Aerospace equipment ② Power generation equipment such as thermal power, nuclear power etc. ③ Medical equipment ④ Transport equipment (automobiles, trains, ships, etc.) ⑤ Transportation control equipment ⑥ Disaster prevention / crime prevention equipment ⑦ Highly publicized information processing equipment ⑧ Submarine equipment ⑨ Other applications that are not considered general-purpose applications.

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The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products

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In addition, we have an established system with enhanced traceability, therefore we will limit the applicable lot items for any potential compensation.

Part Numbering System
Part Numbering System (Appendix)
Standardization
Available Items by Manufacturing Locations
Environmental Measures
Technical Note
Precautions and Guidelines
Recommended Soldering Conditions
Taping, Lead-preforming and Packaging
Available Terminals for Snap-in and Screw Mount Type

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