

SMR Series

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

SMR

↓
Downsized
Higher ripple
SMQ

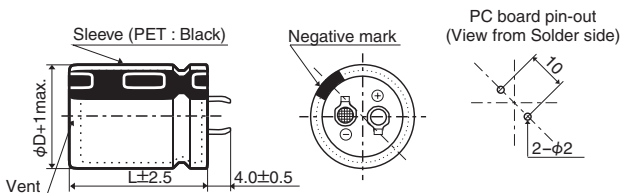


SPECIFICATIONS

Items	Characteristics						
Category	-25 to +85℃						
Temperature Range							
Rated Voltage Range	400 to 450V _{dc}						
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)						
Leakage Current	$I \leq 3\sqrt{CV}$ 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	(at 20℃, 120Hz)			
	tan δ (Max.)	0.15	0.20				
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	400 to 450V	(at 120Hz)				
	Z(-25℃)/Z(+20℃)	8					
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	$\leq \pm 20\%$ of the initial value					
	D. F. (tan δ)	$\leq 200\%$ of the initial specified value					
	Leakage current	$\leq$ 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	$\leq \pm 15\%$ of the initial value					
	D. F. (tan δ)	$\leq 150\%$ of the initial specified value					
	Leakage current	$\leq$ The initial specified value					

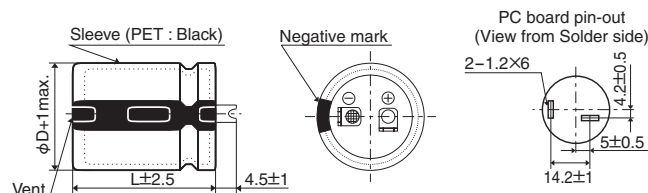
DIMENSIONS [mm]

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

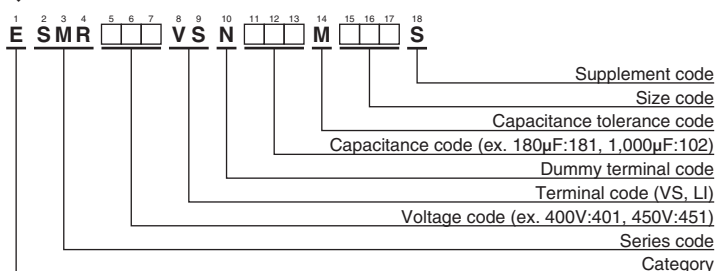


The standard design has no plastic disc.

●Terminal Code : LI (φ35)



PART NUMBERING SYSTEM



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



SMR 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.
400	150	22 × 25	0.15	1.30	ESMR401VSN151MP25S	420	330	35 × 25	0.20	1.99	ESMR421VSN331MA25S
	180	22 × 30	0.15	1.49	ESMR401VSN181MP30S		390	25.4 × 45	0.20	2.47	ESMR421VSN391MQ45S
	220	22 × 35	0.15	1.69	ESMR401VSN221MP35S		390	30 × 35	0.20	2.32	ESMR421VSN391MR35S
	220	25.4 × 25	0.15	1.65	ESMR401VSN221MQ25S		470	25.4 × 50	0.20	2.77	ESMR421VSN471MQ50S
	270	22 × 40	0.15	1.90	ESMR401VSN271MP40S		470	30 × 40	0.20	2.61	ESMR421VSN471MR40S
	270	25.4 × 30	0.15	1.88	ESMR401VSN271MQ30S		470	35 × 30	0.20	2.41	ESMR421VSN471MA30S
	330	22 × 45	0.15	2.15	ESMR401VSN331MP45S		560	30 × 45	0.20	2.93	ESMR421VSN561MR45S
	330	25.4 × 35	0.15	2.16	ESMR401VSN331MQ35S		560	35 × 35	0.20	2.67	ESMR421VSN561MA35S
	330	30 × 25	0.15	2.10	ESMR401VSN331MR25S		680	30 × 50	0.20	3.28	ESMR421VSN681MR50S
	390	22 × 50	0.15	2.40	ESMR401VSN391MP50S		680	35 × 40	0.20	3.11	ESMR421VSN681MA40S
	390	25.4 × 40	0.15	2.40	ESMR401VSN391MQ40S	450	820	35 × 45	0.20	3.43	ESMR421VSN821MA45S
	390	30 × 30	0.15	2.32	ESMR401VSN391MR30S		120	22 × 25	0.20	1.12	ESMR451VSN121MP25S
	390	35 × 25	0.15	2.05	ESMR401VSN391MA25S		150	22 × 30	0.20	1.32	ESMR451VSN151MP30S
	470	25.4 × 45	0.15	2.69	ESMR401VSN471MQ45S		180	22 × 35	0.20	1.49	ESMR451VSN181MP35S
	470	30 × 35	0.15	2.60	ESMR401VSN471MR35S		180	25.4 × 25	0.20	1.42	ESMR451VSN181MQ25S
	470	35 × 30	0.15	2.28	ESMR401VSN471MA30S		220	22 × 40	0.20	1.67	ESMR451VSN221MP40S
	560	30 × 40	0.15	2.92	ESMR401VSN561MR40S		220	25.4 × 30	0.20	1.66	ESMR451VSN221MQ30S
	560	35 × 30	0.15	2.48	ESMR401VSN561MA30S		220	30 × 25	0.20	1.68	ESMR451VSN221MR25S
	680	30 × 45	0.15	3.30	ESMR401VSN681MR45S		270	22 × 45	0.20	1.88	ESMR451VSN271MP45S
	680	35 × 35	0.15	2.79	ESMR401VSN681MA35S		270	25.4 × 35	0.20	1.87	ESMR451VSN271MQ35S
	820	35 × 45	0.15	3.25	ESMR401VSN821MA45S		330	25.4 × 40	0.20	2.11	ESMR451VSN331MQ40S
	1,000	35 × 50	0.15	3.66	ESMR401VSN102MA50S		330	30 × 30	0.20	2.10	ESMR451VSN331MR30S
420	120	22 × 25	0.20	1.15	ESMR421VSN121MP25S		330	35 × 25	0.20	2.10	ESMR451VSN331MA25S
	180	22 × 30	0.20	1.48	ESMR421VSN181MP30S		390	25.4 × 50	0.20	2.37	ESMR451VSN391MQ50S
	180	25.4 × 25	0.20	1.51	ESMR421VSN181MQ25S		390	30 × 35	0.20	2.32	ESMR451VSN391MR35S
	220	22 × 35	0.20	1.68	ESMR421VSN221MP35S		390	35 × 30	0.20	2.32	ESMR451VSN391MA30S
	220	25.4 × 30	0.20	1.71	ESMR421VSN221MQ30S		470	30 × 40	0.20	2.66	ESMR451VSN471MR40S
	270	22 × 45	0.20	1.94	ESMR421VSN271MP45S		470	35 × 35	0.20	2.54	ESMR451VSN471MA35S
	270	25.4 × 35	0.20	1.99	ESMR421VSN271MQ35S		560	30 × 45	0.20	2.93	ESMR451VSN561MR45S
	270	30 × 25	0.20	1.87	ESMR421VSN271MR25S		560	35 × 40	0.20	2.87	ESMR451VSN561MA40S
	330	22 × 50	0.20	2.20	ESMR421VSN331MP50S		680	35 × 45	0.20	3.21	ESMR451VSN681MA45S
	330	25.4 × 40	0.20	2.24	ESMR421VSN331MQ40S		820	35 × 50	0.20	3.60	ESMR451VSN821MA50S
	330	30 × 30	0.20	2.08	ESMR421VSN331MR30S						

◆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.



- 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.
- The circuits described as examples in this catalog and the "delivery specifications" are featured in order to show the operations and usage of our products, however, this fact does not guarantee that the circuits are available to function in your equipment systems. We are not in any case responsible for any failures or damage caused by the use of information contained herein. You should examine our products, of which the characteristics are described in the "delivery specifications" and other documents, and determine whether or not our products suit your requirements according to the specifications of your equipment systems. Therefore, you bear final responsibility regarding the use of our products.
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- We strongly recommend our customers to purchase Nippon Chemi-Con products only through our official sales channels. We assume no responsibility for any defects or damages caused by using products purchased from outside our official sales channel or of counterfeit goods. In addition, we will ask the customer to pay the investigation cost for products purchased outside our official sales channel.
- We reserve the right to discontinue production and delivery of products. We do not guarantee that all the products included in this catalog will be available in the future.
The aforementioned does not apply in the case of individual agreements deviating from the foregoing for customer-specific products
- We continually strive to improve the quality and reliability of our products, but in any case that our product does not meet our published specifications, please stop using it promptly and contact us immediately. As for compensation for non-conforming goods delivered by Chemi-Con, we will limit it only to goods found in non-compliance of our published specifications. This may be accomplished by a no cost replacement of non-conforming individual products, a credit of the piece price paid per each individual non-conforming product, or in other ways deemed necessary.
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](#)

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[Available Terminals for Snap-in and Screw Mount Type](#)