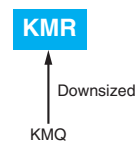


KMR Series

- Downsized 5mm in height from current snap-ins KMQ series
- Max. 50% up ripple current than same case size of KMQ series
- Endurance with ripple current : 2,000 hours at 105°C
- Rated voltage range : 160 to 450V_{dc}, Capacitance range : 100 to 3,300μF
- For inverter control, switching power supplies
- Non solvent resistant type
- RoHS2 Compliant

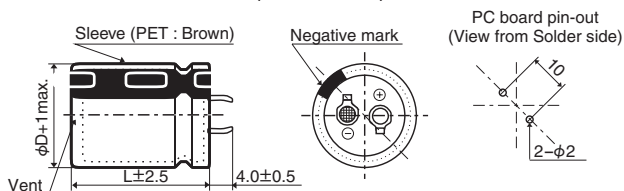


SPECIFICATIONS

Items	Characteristics				
Category	-25 to +105℃				
Temperature Range					
Rated Voltage Range	160 to 450V _{dc}				
Capacitance Tolerance	± 20% (M) (at 20℃, 120Hz)				
Leakage Current	I ≤ 3√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})	160 to 250V	315 to 400V	420 & 450V	(at 20℃, 120Hz)
	tan δ (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℃)/Z(+20℃)	4	8	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 105℃.				
	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 105℃ 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			

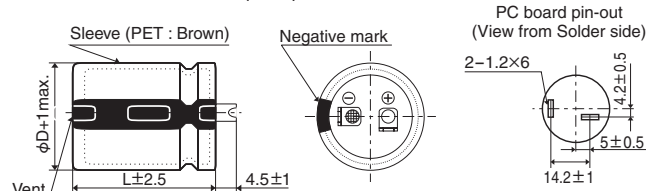
DIMENSIONS [mm]

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

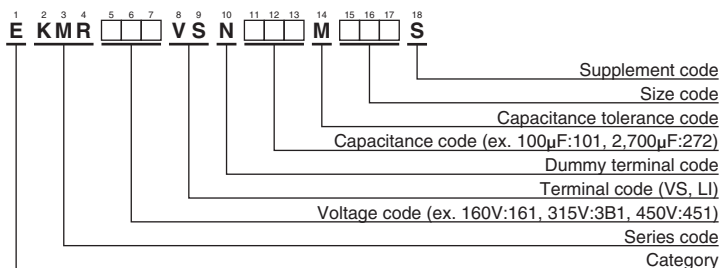


The standard design has no plastic disc.

- Terminal Code : LI (φ35)



PART NUMBERING SYSTEM



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



◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Rated ripple current (Arms/105°C,120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Rated ripple current (Arms/105°C,120Hz)	Part No.
160	560	22 × 25	1.58	EKMR161VSN561MP25S	250	330	22 × 25	1.21	EKMR251VSN331MP25S
	680	22 × 30	1.83	EKMR161VSN681MP30S		390	22 × 30	1.38	EKMR251VSN391MP30S
	820	22 × 35	2.06	EKMR161VSN821MP35S		470	22 × 35	1.56	EKMR251VSN471MP35S
	820	25.4 × 25	1.89	EKMR161VSN821MQ25S		560	22 × 40	1.74	EKMR251VSN561MP40S
	1,000	22 × 40	2.33	EKMR161VSN102MP40S		560	25.4 × 30	1.61	EKMR251VSN561MQ30S
	1,000	25.4 × 30	2.15	EKMR161VSN102MQ30S		560	30 × 25	1.42	EKMR251VSN561MR25S
	1,000	30 × 25	1.90	EKMR161VSN102MR25S		680	22 × 45	1.97	EKMR251VSN681MP45S
	1,200	22 × 45	2.61	EKMR161VSN122MP45S		680	25.4 × 35	1.85	EKMR251VSN681MQ35S
	1,200	22 × 50	2.69	EKMR161VSN122MP50S		820	25.4 × 40	2.08	EKMR251VSN821MQ40S
	1,200	25.4 × 35	2.45	EKMR161VSN122MQ35S		820	25.4 × 45	2.13	EKMR251VSN821MQ45S
	1,500	25.4 × 40	2.82	EKMR161VSN152MQ40S		820	30 × 30	1.77	EKMR251VSN152MR30S
	1,500	25.4 × 45	2.88	EKMR161VSN152MQ45S		820	35 × 25	1.60	EKMR251VSN821MA25S
	1,500	30 × 30	2.39	EKMR161VSN152MR30S		1,000	25.4 × 50	2.40	EKMR251VSN102MQ50S
	1,500	35 × 25	2.17	EKMR161VSN152MA25S		1,000	30 × 35	2.03	EKMR251VSN102MR35S
	1,800	25.4 × 50	3.22	EKMR161VSN222MA45S		1,200	30 × 40	2.31	EKMR251VSN152MA40S
	1,800	30 × 35	2.73	EKMR161VSN182MR35S		1,200	30 × 45	2.38	EKMR251VSN122MR45S
	1,800	30 × 40	2.82	EKMR161VSN182MR40S		1,200	35 × 35	2.06	EKMR251VSN122MA35S
	1,800	35 × 30	2.47	EKMR161VSN182MA30S		1,500	30 × 50	2.73	EKMR251VSN152MR50S
	2,200	30 × 45	3.23	EKMR161VSN222MR45S		1,500	35 × 40	2.41	EKMR251VSN152MA40S
	2,200	35 × 35	2.79	EKMR161VSN222MA35S		1,800	35 × 45	2.72	EKMR251VSN182MA45S
180	2,700	30 × 50	3.66	EKMR161VSN272MR50S	315	2,200	35 × 50	3.10	EKMR251VSN222MA50S
	2,700	35 × 40	3.23	EKMR161VSN272MA40S		180	22 × 25	0.91	EKMR3B1VSN181MP25S
	3,300	35 × 45	3.68	EKMR161VSN322MA45S		220	22 × 30	1.06	EKMR3B1VSN221MP30S
	470	22 × 25	1.45	EKMR181VSN471MP25S		270	22 × 35	1.20	EKMR3B1VSN271MP35S
	560	22 × 30	1.66	EKMR181VSN561MP30S		270	25.4 × 25	1.15	EKMR3B1VSN271MQ25S
	680	22 × 35	1.87	EKMR181VSN681MP35S		330	22 × 40	1.37	EKMR3B1VSN331MP40S
	680	25.4 × 25	1.72	EKMR181VSN681MQ25S		330	25.4 × 30	1.30	EKMR3B1VSN331MQ30S
	820	22 × 40	2.11	EKMR181VSN821MP40S		390	22 × 45	1.52	EKMR3B1VSN391MP45S
	820	25.4 × 30	1.94	EKMR181VSN821MQ30S		390	25.4 × 35	1.48	EKMR3B1VSN391MQ35S
	1,000	22 × 45	2.38	EKMR181VSN102MP45S		390	30 × 25	1.39	EKMR3B1VSN391MR25S
	1,000	25.4 × 35	2.24	EKMR181VSN102MQ35S		470	22 × 50	1.72	EKMR3B1VSN471MP50S
	1,000	30 × 25	1.90	EKMR181VSN102MR25S		470	25.4 × 40	1.67	EKMR3B1VSN471MQ40S
	1,200	22 × 50	2.69	EKMR181VSN122MP50S		470	30 × 30	1.57	EKMR3B1VSN471MR30S
	1,200	25.4 × 40	2.52	EKMR181VSN122MQ40S		470	35 × 25	1.52	EKMR3B1VSN471MA25S
	1,200	30 × 30	2.14	EKMR181VSN122MR30S		560	25.4 × 45	1.86	EKMR3B1VSN561MQ45S
	1,200	35 × 25	1.94	EKMR181VSN122MA25S		560	30 × 35	1.78	EKMR3B1VSN561MR35S
	1,500	25.4 × 45	2.88	EKMR181VSN152MQ45S		680	25.4 × 50	2.10	EKMR3B1VSN681MQ50S
	1,500	25.4 × 50	2.94	EKMR181VSN152MQ50S		680	30 × 40	2.03	EKMR3B1VSN681MR40S
	1,500	30 × 35	2.49	EKMR181VSN152MR35S		680	35 × 30	1.90	EKMR3B1VSN681MA30S
	1,800	30 × 40	2.82	EKMR181VSN182MR40S		820	30 × 45	2.31	EKMR3B1VSN821MR45S
200	1,800	35 × 30	2.47	EKMR181VSN182MA30S		820	35 × 35	2.13	EKMR3B1VSN821MA35S
	2,200	30 × 45	3.23	EKMR181VSN222MR45S	350	1,000	30 × 50	2.61	EKMR3B1VSN102MR50S
	2,200	30 × 50	3.31	EKMR181VSN222MR50S		1,000	35 × 40	2.46	EKMR3B1VSN102MA40S
	2,200	35 × 35	2.79	EKMR181VSN222MA35S		1,200	35 × 45	2.78	EKMR3B1VSN122MA45S
	2,200	35 × 40	2.92	EKMR181VSN222MA40S		1,200	35 × 50	2.86	EKMR3B1VSN122MA50S
	2,700	35 × 45	3.33	EKMR181VSN272MA45S		150	22 × 25	0.84	EKMR351VSN151MP25S
	560	22 × 30	1.66	EKMR201VSN561MP30S		220	22 × 30	1.06	EKMR351VSN221MP30S
	560	25.4 × 25	1.56	EKMR201VSN561MQ25S		220	25.4 × 25	1.04	EKMR351VSN221MR25S
	680	22 × 35	1.87	EKMR201VSN681MP35S		270	22 × 35	1.20	EKMR351VSN271MP35S
	680	25.4 × 30	1.77	EKMR201VSN681MQ30S		270	25.4 × 30	1.18	EKMR351VSN271MQ30S
	820	22 × 40	2.11	EKMR201VSN821MP40S		330	22 × 40	1.37	EKMR351VSN331MP40S
	820	25.4 × 35	2.03	EKMR201VSN821MQ35S		330	22 × 45	1.40	EKMR351VSN331MR45S
	820	30 × 25	1.72	EKMR201VSN821MR25S		330	25.4 × 35	1.36	EKMR351VSN331MQ35S
	1,000	22 × 50	2.45	EKMR201VSN102MP50S		330	30 × 25	1.28	EKMR351VSN331MR25S
	1,000	25.4 × 40	2.30	EKMR201VSN102MQ40S		390	22 × 50	1.56	EKMR351VSN391MP50S
	1,000	30 × 30	1.95	EKMR201VSN102MR30S		390	25.4 × 40	1.52	EKMR351VSN391MQ40S
	1,200	25.4 × 45	2.58	EKMR201VSN122MQ45S		390	30 × 30	1.43	EKMR351VSN391MR30S
	1,200	30 × 35	2.23	EKMR201VSN122MR35S		390	35 × 25	1.38	EKMR351VSN391MA25S
	1,200	35 × 25	1.94	EKMR201VSN122MA25S		470	25.4 × 45	1.71	EKMR351VSN471MQ45S
	1,500	25.4 × 50	2.94	EKMR201VSN152MQ50S		560	25.4 × 50	1.90	EKMR351VSN561MQ50S
	1,500	30 × 40	2.58	EKMR201VSN152MR40S		560	30 × 35	1.78	EKMR351VSN561MR35S
	1,500	35 × 30	2.25	EKMR201VSN152MA30S		560	30 × 40	1.84	EKMR351VSN561MR40S
	1,800	30 × 45	2.92	EKMR201VSN182MR45S		560	35 × 30	1.72	EKMR351VSN561MA30S
	1,800	35 × 35	2.53	EKMR201VSN182MA35S		680	30 × 45	2.10	EKMR351VSN681MR45S
	2,200	30 × 50	3.31	EKMR201VSN222MR50S		680	35 × 35	1.94	EKMR351VSN681MA35S
	2,200	35 × 40	2.92	EKMR201VSN222MA40S		820	30 × 50	2.36	EKMR351VSN821MR50S
	2,700	35 × 45	3.33	EKMR201VSN272MA45S					



◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Rated ripple current (Arms/105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	Rated ripple current (Arms/105°C, 120Hz)	Part No.
350	820	35 × 40	2.23	EKMR351VSN821MA40S	420	270	25.4 × 40	1.32	EKMR421VSN271MQ40S
	1,000	35 × 45	2.54	EKMR351VSN102MA45S		270	30 × 30	1.26	EKMR421VSN271MR30S
	1,200	35 × 50	2.86	EKMR351VSN122MA50S		270	35 × 25	1.26	EKMR421VSN271MA25S
400	120	22 × 25	0.75	EKMR401VSN121MP25S		330	25.4 × 45	1.49	EKMR421VSN331MQ45S
	180	22 × 30	0.96	EKMR401VSN181MP30S		330	30 × 35	1.45	EKMR421VSN331MR35S
	180	25.4 × 25	0.94	EKMR401VSN181MQ25S		390	25.4 × 50	1.66	EKMR421VSN391MQ50S
	220	22 × 35	1.09	EKMR401VSN221MP35S		390	30 × 40	1.63	EKMR421VSN391MR40S
	220	25.4 × 30	1.07	EKMR401VSN221MQ30S		390	35 × 30	1.58	EKMR421VSN391MA30S
	270	22 × 40	1.24	EKMR401VSN271MP40S		470	30 × 45	1.85	EKMR421VSN471MR45S
	270	22 × 45	1.26	EKMR401VSN271MP45S		470	35 × 35	1.77	EKMR421VSN471MA35S
	270	25.4 × 35	1.23	EKMR401VSN271MQ35S		560	30 × 50	2.07	EKMR421VSN561MR50S
	270	30 × 25	1.16	EKMR401VSN271MR25S		560	35 × 40	2.02	EKMR421VSN561MA40S
	330	22 × 50	1.44	EKMR401VSN331MP50S		680	35 × 45	2.29	EKMR421VSN681MA45S
	330	25.4 × 40	1.40	EKMR401VSN331MQ40S		820	35 × 50	2.59	EKMR421VSN821MA50S
	330	30 × 30	1.31	EKMR401VSN331MR30S	450	100	22 × 25	0.71	EKMR451VSN101MP25S
	330	35 × 25	1.27	EKMR401VSN331MA25S		120	22 × 30	0.82	EKMR451VSN121MP30S
	390	25.4 × 45	1.55	EKMR401VSN391MQ45S		150	22 × 35	0.94	EKMR451VSN151MP35S
	390	30 × 35	1.49	EKMR401VSN391MR35S		150	25.4 × 25	0.89	EKMR451VSN151MQ25S
	470	25.4 × 50	1.74	EKMR401VSN471MQ50S		180	22 × 40	1.05	EKMR451VSN181MP40S
	470	30 × 40	1.69	EKMR401VSN471MR40S		180	25.4 × 30	1.00	EKMR451VSN181MQ30S
	470	35 × 30	1.58	EKMR401VSN471MA30S		220	22 × 45	1.19	EKMR451VSN221MP45S
	560	30 × 45	1.91	EKMR401VSN561MR45S		220	25.4 × 35	1.16	EKMR451VSN221MQ35S
	560	35 × 35	1.76	EKMR401VSN561MA35S		220	30 × 25	1.11	EKMR451VSN221MR25S
	680	30 × 50	2.15	EKMR401VSN681MR50S		270	22 × 50	1.36	EKMR451VSN271MP50S
	680	35 × 40	2.03	EKMR401VSN681MA40S		270	25.4 × 40	1.32	EKMR451VSN271MQ40S
	820	35 × 45	2.30	EKMR401VSN821MA45S		270	25.4 × 45	1.35	EKMR451VSN271MQ45S
	820	35 × 50	2.37	EKMR401VSN821MA50S		270	30 × 30	1.26	EKMR451VSN271MR30S
	1,000	35 × 50	2.50	EKMR401VSN102MA50S		270	35 × 25	1.26	EKMR451VSN271MA25S
420	120	22 × 25	0.78	EKMR421VSN121MP25S		330	25.4 × 50	1.52	EKMR451VSN331MQ50S
	150	22 × 30	0.91	EKMR421VSN151MP30S		330	30 × 35	1.45	EKMR451VSN331MR35S
	150	25.4 × 25	0.89	EKMR421VSN151MQ25S		330	35 × 30	1.45	EKMR451VSN331MA30S
	180	22 × 35	1.03	EKMR421VSN181MP35S		390	30 × 40	1.63	EKMR451VSN391MR40S
	180	25.4 × 30	1.00	EKMR421VSN181MQ30S		470	30 × 45	1.85	EKMR451VSN471MR45S
	220	22 × 40	1.16	EKMR421VSN221MP40S		470	30 × 50	1.90	EKMR451VSN471MR50S
	220	22 × 45	1.19	EKMR421VSN221MP45S		470	35 × 35	1.77	EKMR451VSN471MA35S
	220	25.4 × 35	1.16	EKMR421VSN221MQ35S		560	35 × 40	2.02	EKMR451VSN561MA40S
	220	30 × 25	1.11	EKMR421VSN221MR25S		560	35 × 45	2.08	EKMR451VSN561MA45S
	270	22 × 50	1.36	EKMR421VSN271MP50S		680	35 × 50	2.36	EKMR451VSN681MA50S

◆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 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.
Please make sure that you take appropriate safety measures such as use of redundant design and malfunction prevention measures in order to prevent fatal accidents and/or fires in the event any of our products malfunction.
- 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](#)

[Environmental Measures](#)

[Technical Note](#)

[Precautions and Guidelines](#)

[Recommended Soldering Conditions](#)

[Taping, Lead-preforming and Packaging](#)

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