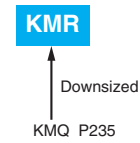


# KMR Series

- 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<sub>dc</sub>, Capacitance range : 100 to 3,300μF
- For inverter control, switching power supplies
- Non solvent resistant type
- RoHS Compliant

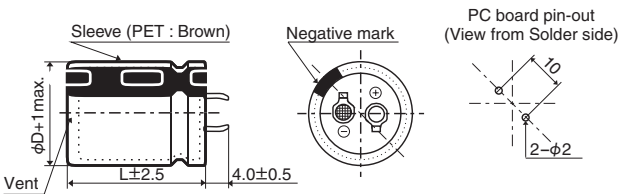


## SPECIFICATIONS

Items	Characteristics			
<b>Category</b>	-25 to +105°C			
<b>Temperature Range</b>	-25 to +105°C			
<b>Rated Voltage Range</b>	160 to 450V <sub>dc</sub>			
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)			
<b>Leakage Current</b>	$I \leq 3\sqrt{CV}$ Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 5 minutes)			
<b>Dissipation Factor (tan δ)</b>	Rated voltage (V <sub>dc</sub> )	160 to 250V	315 to 400V	420 & 450V
	tan δ (Max.)	0.15	0.15	0.20
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage (V <sub>dc</sub> )	160 to 250V	315 to 400V	420 & 450V
	Z(-25°C)/Z(+20°C)	4	8	8
<b>Endurance</b>	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 105°C.			
	Capacitance change	≤ ±20% of the initial value		
	D.F. (tan δ)	≤ 200% of the initial specified value		
	Leakage current	≤ The initial specified value		
<b>Shelf Life</b>	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them for 1,000 hours at 105°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		

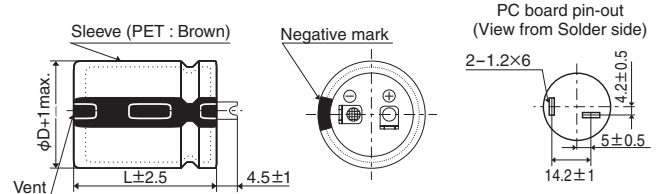
## DIMENSIONS [mm]

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

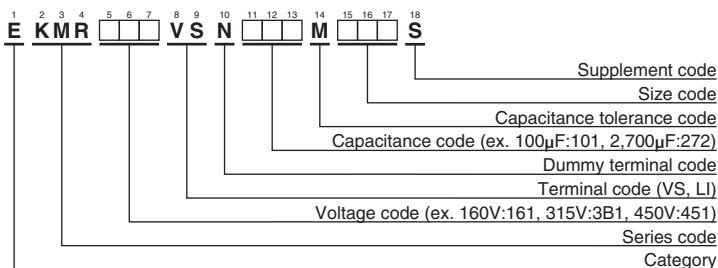


The standard design has no plastic disc.

- Terminal Code : LI (φ35)



## PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	Rated ripple current (Arms/105°C,120Hz)	Part No.	WV (V <sub>dc</sub> )	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	EKMR251VSN821MP30S
	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	EKMR161VSN182MQ50S		1,200	30 × 40	2.31	EKMR251VSN122MR40S
	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
2,700	30 × 50	3.66	EKMR161VSN272MR50S	2,200	35 × 50	3.10	EKMR251VSN222MA50S		
2,700	35 × 40	3.23	EKMR161VSN272MA40S	315	180	22 × 25	0.91	EKMR3B1VSN181MP25S	
3,300	35 × 45	3.68	EKMR161VSN332MA45S		220	22 × 30	1.06	EKMR3B1VSN221MP30S	
180	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	
	1,800	35 × 30	2.47	EKMR181VSN182MA30S	820	35 × 35	2.13	EKMR3B1VSN821MA35S	
2,200	30 × 45	3.23	EKMR181VSN222MR45S	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	350	150	22 × 25	0.84	EKMR351VSN151MP25S	
200	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	EKMR351VSN221MQ25S
	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	EKMR351VSN331MP45S
	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 <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	Rated ripple current (Arms/105°C, 120Hz)	Part No.	WV (V <sub>dc</sub> )	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
	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 <sub>dc</sub>	0.81	1.00	1.17	1.32	1.45	1.50
315 to 450V <sub>dc</sub>	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.