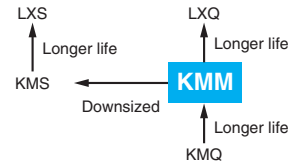


KMM Series

- Longer life from KMQ series
- Endurance with ripple current : 2,000 to 3,000 hours at 105°C
- Non solvent resistant type
- RoHS2 Compliant

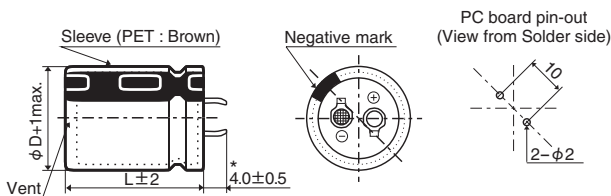


SPECIFICATIONS

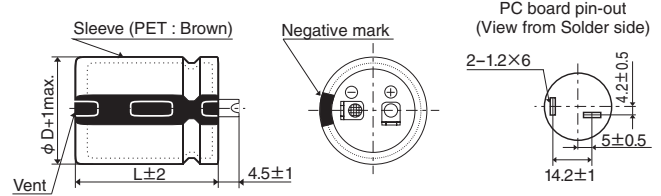
Items	Characteristics		
Category	-25 to +105°C		
Temperature Range	-25 to +105°C		
Rated Voltage Range	160 to 450V _{dc}		
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)		
Leakage Current	I ≤ 3√CV Where, I : Max. leakage current (µA), C : Nominal capacitance (µF), V : Rated voltage (V) (at 20°C after 5 minutes)		
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	160 to 400V	420 & 450V
	tan δ (Max.)	0.15	0.20
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	160 to 400V	420 & 450V
	Z(-25°C)/Z(+20°C)	4	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 (the peak voltage shall not exceed the rated voltage) for 3,000 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	
Shelf Life	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



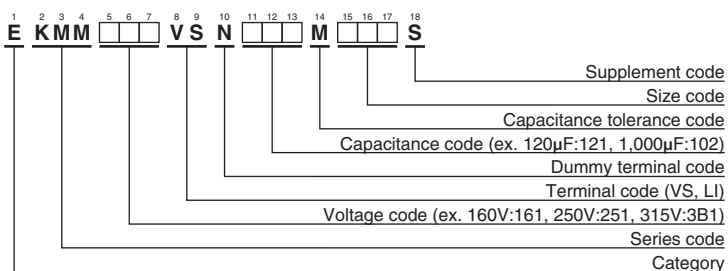
- Terminal Code : LI (φ35)



* φD=35mm : 3.5±0.5mm

The standard design has no plastic disc.

PART NUMBERING SYSTEM



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

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.
220	680	30 × 35	0.15	1.93	EKMM221VSN681MR35S	315	220	25.4 × 30	0.15	1.04	EKMM3B1VSN221MQ30S
	680	35 × 25	0.15	1.89	EKMM221VSN681MA25S		220	30 × 25	0.15	1.04	EKMM3B1VSN221MR25S
	820	25.4 × 50	0.15	2.18	EKMM221VSN821MQ50S		220	35 × 20	0.15	0.90	EKMM3B1VSN221MA20S
	820	30 × 40	0.15	2.19	EKMM221VSN821MR40S		270	22 × 45	0.15	1.16	EKMM3B1VSN271MP45S
	820	35 × 30	0.15	2.16	EKMM221VSN821MA30S		270	25.4 × 35	0.15	1.16	EKMM3B1VSN271MQ35S
	1,000	25.4 × 60	0.15	2.54	EKMM221VSN102MQ60S		270	30 × 25	0.15	1.16	EKMM3B1VSN271MR25S
	1,000	30 × 45	0.15	2.50	EKMM221VSN102MR45S		270	35 × 25	0.15	1.15	EKMM3B1VSN271MA25S
	1,000	35 × 35	0.15	2.44	EKMM221VSN102MA35S		330	22 × 50	0.15	1.33	EKMM3B1VSN331MP50S
	1,200	30 × 50	0.15	2.81	EKMM221VSN122MR50S		330	25.4 × 40	0.15	1.33	EKMM3B1VSN331MQ40S
	1,200	35 × 40	0.15	2.79	EKMM221VSN122MA40S		330	30 × 30	0.15	1.33	EKMM3B1VSN331MR30S
	1,500	30 × 60	0.15	3.30	EKMM221VSN152MR60S		330	35 × 25	0.15	1.33	EKMM3B1VSN331MA25S
	1,500	35 × 45	0.15	3.22	EKMM221VSN152MA45S		390	25.4 × 45	0.15	1.47	EKMM3B1VSN391MQ45S
	1,800	35 × 50	0.15	3.63	EKMM221VSN182MA50S		390	30 × 35	0.15	1.47	EKMM3B1VSN391MR35S
	2,200	35 × 60	0.15	4.23	EKMM221VSN222MA60S		390	35 × 30	0.15	1.47	EKMM3B1VSN391MA30S
250	120	22 × 20	0.15	0.60	EKMM251VSN121MP20S	470	25.4 × 50	0.15	1.70	EKMM3B1VSN471MQ50S	
	150	25.4 × 20	0.15	0.74	EKMM251VSN151MQ20S	470	30 × 40	0.15	1.70	EKMM3B1VSN471MR40S	
	180	22 × 25	0.15	0.78	EKMM251VSN181MP25S	470	35 × 30	0.15	1.70	EKMM3B1VSN471MA30S	
	180	25.4 × 20	0.15	0.75	EKMM251VSN181MQ20S	560	30 × 45	0.15	2.05	EKMM3B1VSN561MR45S	
	220	22 × 25	0.15	1.00	EKMM251VSN221MP25S	560	35 × 35	0.15	2.05	EKMM3B1VSN561MA35S	
	220	25.4 × 25	0.15	0.95	EKMM251VSN221MQ25S	680	30 × 50	0.15	2.17	EKMM3B1VSN681MR50S	
	220	30 × 20	0.15	0.95	EKMM251VSN221MR20S	680	35 × 40	0.15	2.17	EKMM3B1VSN681MA40S	
	270	22 × 30	0.15	1.18	EKMM251VSN271MP30S	820	35 × 45	0.15	2.20	EKMM3B1VSN821MA45S	
	270	25.4 × 25	0.15	1.18	EKMM251VSN271MQ25S	1,000	35 × 60	0.15	2.55	EKMM3B1VSN102MA60S	
	270	30 × 20	0.15	1.00	EKMM251VSN271MR20S	56	22 × 20	0.15	0.41	EKMM351VSN560MP20S	
	330	22 × 35	0.15	1.30	EKMM251VSN331MP35S	68	25.4 × 20	0.15	0.46	EKMM351VSN680MQ20S	
	330	25.4 × 30	0.15	1.30	EKMM251VSN331MQ30S	82	22 × 25	0.15	0.55	EKMM351VSN820MP25S	
	330	30 × 25	0.15	1.30	EKMM251VSN331MR25S	82	25.4 × 20	0.15	0.51	EKMM351VSN820MQ20S	
	330	35 × 20	0.15	1.16	EKMM251VSN331MA20S	100	22 × 25	0.15	0.69	EKMM351VSN101MP25S	
	390	22 × 40	0.15	1.49	EKMM251VSN391MP40S	100	30 × 20	0.15	0.60	EKMM351VSN101MR20S	
	390	25.4 × 35	0.15	1.49	EKMM251VSN391MQ35S	120	22 × 30	0.15	0.75	EKMM351VSN121MP30S	
	390	30 × 25	0.15	1.49	EKMM251VSN391MR25S	120	25.4 × 25	0.15	0.75	EKMM351VSN121MQ25S	
	470	22 × 45	0.15	1.65	EKMM251VSN471MP45S	120	30 × 20	0.15	0.65	EKMM351VSN121MR20S	
	470	25.4 × 35	0.15	1.65	EKMM251VSN471MQ35S	150	22 × 35	0.15	0.82	EKMM351VSN151MP35S	
	470	30 × 30	0.15	1.65	EKMM251VSN471MR30S	150	25.4 × 30	0.15	0.83	EKMM351VSN151MQ30S	
	470	35 × 25	0.15	1.65	EKMM251VSN471MA25S	150	30 × 25	0.15	0.82	EKMM351VSN151MR25S	
	560	22 × 50	0.15	1.67	EKMM251VSN561MP50S	150	35 × 20	0.15	0.76	EKMM351VSN151MA20S	
	560	25.4 × 40	0.15	1.80	EKMM251VSN561MQ40S	180	22 × 40	0.15	0.92	EKMM351VSN181MP40S	
	560	30 × 30	0.15	1.80	EKMM251VSN561MR30S	180	25.4 × 30	0.15	0.92	EKMM351VSN181MQ30S	
	560	35 × 25	0.15	1.80	EKMM251VSN561MA25S	180	30 × 25	0.15	0.90	EKMM351VSN181MR25S	
	680	25.4 × 50	0.15	2.00	EKMM251VSN681MQ50S	220	22 × 45	0.15	1.05	EKMM351VSN221MP45S	
	680	30 × 35	0.15	2.00	EKMM251VSN681MR35S	220	25.4 × 35	0.15	1.04	EKMM351VSN221MQ35S	
	680	35 × 30	0.15	2.00	EKMM251VSN681MA30S	220	30 × 30	0.15	1.02	EKMM351VSN221MR30S	
820	25.4 × 60	0.15	2.20	EKMM251VSN821MQ60S	220	35 × 25	0.15	1.04	EKMM351VSN221MA25S		
820	30 × 40	0.15	2.30	EKMM251VSN821MR40S	270	22 × 50	0.15	1.16	EKMM351VSN271MP50S		
820	35 × 35	0.15	2.30	EKMM251VSN821MA35S	270	25.4 × 40	0.15	1.18	EKMM351VSN271MQ40S		
1,000	30 × 50	0.15	2.47	EKMM251VSN102MR50S	270	30 × 30	0.15	1.17	EKMM351VSN271MR30S		
1,000	35 × 40	0.15	2.47	EKMM251VSN102MA40S	270	35 × 25	0.15	1.20	EKMM351VSN271MA25S		
1,200	30 × 60	0.15	2.85	EKMM251VSN122MR60S	330	25.4 × 45	0.15	1.29	EKMM351VSN331MQ45S		
1,200	35 × 45	0.15	2.60	EKMM251VSN122MA45S	330	30 × 35	0.15	1.34	EKMM351VSN331MR35S		
1,500	35 × 50	0.15	3.00	EKMM251VSN152MA50S	330	35 × 30	0.15	1.22	EKMM351VSN331MA30S		
1,800	35 × 60	0.15	3.42	EKMM251VSN182MA60S	390	25.4 × 50	0.15	1.51	EKMM351VSN391MQ50S		
315	68	22 × 20	0.15	0.45	EKMM3B1VSN680MP20S	390	30 × 40	0.15	1.51	EKMM351VSN391MR40S	
	82	22 × 20	0.15	0.47	EKMM3B1VSN820MP20S	390	35 × 35	0.15	1.47	EKMM351VSN391MA35S	
	100	22 × 25	0.15	0.61	EKMM3B1VSN101MP25S	470	25.4 × 60	0.15	1.66	EKMM351VSN471MQ60S	
	100	25.4 × 20	0.15	0.56	EKMM3B1VSN101MQ20S	470	30 × 45	0.15	1.65	EKMM351VSN471MR45S	
	120	22 × 25	0.15	0.75	EKMM3B1VSN121MP25S	470	35 × 35	0.15	1.69	EKMM351VSN471MA35S	
	120	25.4 × 20	0.15	0.62	EKMM3B1VSN121MQ20S	560	30 × 50	0.15	1.85	EKMM351VSN561MR50S	
	120	30 × 20	0.15	0.65	EKMM3B1VSN121MR20S	560	35 × 40	0.15	1.90	EKMM351VSN561MA40S	
	150	22 × 30	0.15	0.82	EKMM3B1VSN151MP30S	680	30 × 60	0.15	2.15	EKMM351VSN681MR60S	
	150	25.4 × 25	0.15	0.82	EKMM3B1VSN151MQ25S	680	35 × 50	0.15	1.99	EKMM351VSN681MA50S	
	150	30 × 20	0.15	0.70	EKMM3B1VSN151MR20S	820	35 × 60	0.15	2.31	EKMM351VSN821MA60S	
	150	35 × 20	0.15	0.76	EKMM3B1VSN151MA20S	47	22 × 20	0.15	0.37	EKMM401VSN470MP20S	
	180	22 × 35	0.15	0.92	EKMM3B1VSN181MP35S	56	25.4 × 20	0.15	0.42	EKMM401VSN560MQ20S	
	180	25.4 × 25	0.15	0.92	EKMM3B1VSN181MQ25S	68	22 × 25	0.15	0.50	EKMM401VSN680MP25S	
	180	30 × 25	0.15	0.90	EKMM3B1VSN181MR25S	68	25.4 × 20	0.15	0.46	EKMM401VSN680MQ20S	
	180	35 × 20	0.15	0.85	EKMM3B1VSN181MA20S	82	22 × 25	0.15	0.64	EKMM401VSN820MP25S	
	220	22 × 40	0.15	1.04	EKMM3B1VSN221MP40S	82	30 × 20	0.15	0.55	EKMM401VSN820MR20S	

KMM Series

◆STANDARD RATINGS

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.	
400	100	22 × 30	0.15	0.70	EKMM401VSN101MP30S	420	180	25.4 × 35	0.20	0.95	EKMM421VSN181MQ35S	
	100	25.4 × 25	0.15	0.70	EKMM401VSN101MQ25S		180	30 × 30	0.20	0.95	EKMM421VSN181MR30S	
	100	30 × 20	0.15	0.60	EKMM401VSN101MR20S		180	35 × 25	0.20	0.94	EKMM421VSN181MA25S	
	120	22 × 35	0.15	0.75	EKMM401VSN121MP35S		220	22 × 50	0.20	1.10	EKMM421VSN221MP50S	
	120	25.4 × 25	0.15	0.75	EKMM401VSN121MQ25S		220	25.4 × 45	0.20	1.10	EKMM421VSN221MQ45S	
	120	30 × 25	0.15	0.73	EKMM401VSN121MR25S		220	30 × 35	0.20	1.10	EKMM421VSN221MR35S	
	120	35 × 20	0.15	0.75	EKMM401VSN121MA20S		220	35 × 25	0.20	1.10	EKMM421VSN221MA25S	
	150	22 × 40	0.15	0.88	EKMM401VSN151MP40S		270	25.4 × 50	0.20	1.22	EKMM421VSN271MQ50S	
	150	25.4 × 30	0.15	0.88	EKMM401VSN151MQ30S		270	30 × 40	0.20	1.22	EKMM421VSN271MR40S	
	150	30 × 25	0.15	0.88	EKMM401VSN151MR25S		270	35 × 30	0.20	1.22	EKMM421VSN271MA30S	
	150	35 × 20	0.15	0.80	EKMM401VSN151MA20S		330	25.4 × 60	0.20	1.41	EKMM421VSN331MQ60S	
	180	22 × 45	0.15	0.98	EKMM401VSN181MP45S		330	30 × 45	0.20	1.45	EKMM421VSN331MR45S	
	180	25.4 × 35	0.15	0.98	EKMM401VSN181MQ35S		330	35 × 35	0.20	1.45	EKMM421VSN331MA35S	
	180	30 × 30	0.15	0.98	EKMM401VSN181MR30S		390	30 × 50	0.20	1.55	EKMM421VSN391MR50S	
	180	35 × 25	0.15	0.98	EKMM401VSN181MA25S		390	35 × 40	0.20	1.55	EKMM421VSN391MA40S	
	220	22 × 50	0.15	1.10	EKMM401VSN221MP50S		470	30 × 60	0.20	1.79	EKMM421VSN471MR60S	
	220	25.4 × 40	0.15	1.10	EKMM401VSN221MQ40S		470	35 × 45	0.20	1.90	EKMM421VSN471MA45S	
	220	30 × 30	0.15	1.10	EKMM401VSN221MR30S		560	35 × 50	0.20	2.15	EKMM421VSN561MA50S	
	220	35 × 25	0.15	1.10	EKMM401VSN221MA25S		680	35 × 60	0.20	2.27	EKMM421VSN681MA60S	
	270	25.4 × 45	0.15	1.22	EKMM401VSN271MQ45S		450	56	22 × 25	0.20	0.40	EKMM451VSN560MP25S
	270	30 × 35	0.15	1.22	EKMM401VSN271MR35S			68	22 × 30	0.20	0.53	EKMM451VSN680MP30S
	270	35 × 30	0.15	1.22	EKMM401VSN271MA30S			68	25.4 × 25	0.20	0.50	EKMM451VSN680MQ25S
	330	25.4 × 50	0.15	1.44	EKMM401VSN331MQ50S			82	22 × 30	0.20	0.64	EKMM451VSN820MP30S
	330	30 × 40	0.15	1.44	EKMM401VSN331MR40S			82	25.4 × 25	0.20	0.64	EKMM451VSN820MQ25S
	330	35 × 30	0.15	1.44	EKMM401VSN331MA30S			100	22 × 35	0.20	0.69	EKMM451VSN101MP35S
	390	25.4 × 60	0.15	1.51	EKMM401VSN391MQ60S			100	25.4 × 30	0.20	0.69	EKMM451VSN101MQ30S
	390	30 × 45	0.15	1.60	EKMM401VSN391MR45S			100	30 × 25	0.20	0.64	EKMM451VSN101MR25S
	390	35 × 35	0.15	1.60	EKMM401VSN391MA35S			120	22 × 40	0.20	0.80	EKMM451VSN121MP40S
470	30 × 50	0.15	1.90	EKMM401VSN471MR50S	120	25.4 × 30		0.20	0.80	EKMM451VSN121MQ30S		
470	35 × 40	0.15	1.90	EKMM401VSN471MA40S	120	30 × 25		0.20	0.80	EKMM451VSN121MR25S		
560	30 × 60	0.15	2.10	EKMM401VSN561MR60S	120	35 × 25		0.20	0.73	EKMM451VSN121MA25S		
560	35 × 45	0.15	2.12	EKMM401VSN561MA45S	150	22 × 45		0.20	0.88	EKMM451VSN151MP45S		
680	35 × 60	0.15	2.27	EKMM401VSN681MA60S	150	25.4 × 35		0.20	0.88	EKMM451VSN151MQ35S		
47	22 × 20	0.20	0.37	EKMM421VSN470MP20S	150	30 × 30		0.20	0.88	EKMM451VSN151MR30S		
56	25.4 × 20	0.20	0.42	EKMM421VSN560MQ20S	150	35 × 25		0.20	0.75	EKMM451VSN151MA25S		
68	22 × 25	0.20	0.50	EKMM421VSN680MP25S	180	22 × 50		0.20	1.00	EKMM451VSN181MP50S		
68	25.4 × 20	0.20	0.46	EKMM421VSN680MQ20S	180	25.4 × 40		0.20	1.00	EKMM451VSN181MQ40S		
82	22 × 25	0.20	0.64	EKMM421VSN820MP25S	180	30 × 30		0.20	1.00	EKMM451VSN181MR30S		
82	25.4 × 25	0.20	0.58	EKMM421VSN820MQ25S	220	25.4 × 45		0.20	1.12	EKMM451VSN221MQ45S		
82	30 × 20	0.20	0.53	EKMM421VSN820MR20S	220	30 × 35		0.20	1.12	EKMM451VSN221MR35S		
100	22 × 30	0.20	0.70	EKMM421VSN101MP30S	220	35 × 30		0.20	1.12	EKMM451VSN221MA30S		
100	25.4 × 25	0.20	0.70	EKMM421VSN101MQ25S	270	25.4 × 60		0.20	1.18	EKMM451VSN271MQ60S		
100	30 × 20	0.20	0.59	EKMM421VSN101MR20S	270	30 × 40		0.20	1.28	EKMM451VSN271MR40S		
120	22 × 35	0.20	0.75	EKMM421VSN121MP35S	270	35 × 35		0.20	1.28	EKMM451VSN271MA35S		
120	25.4 × 30	0.20	0.75	EKMM421VSN121MQ30S	330	30 × 50		0.20	1.45	EKMM451VSN331MR50S		
120	30 × 25	0.20	0.73	EKMM421VSN121MR25S	330	35 × 40		0.20	1.45	EKMM451VSN331MA40S		
120	35 × 20	0.20	0.67	EKMM421VSN121MA20S	390	30 × 60		0.20	1.51	EKMM451VSN391MR60S		
150	22 × 40	0.20	0.88	EKMM421VSN151MP40S	390	35 × 40	0.20	1.55	EKMM451VSN391MA40S			
150	25.4 × 35	0.20	0.88	EKMM421VSN151MQ35S	470	35 × 50	0.20	1.85	EKMM451VSN471MA50S			
150	30 × 25	0.20	0.88	EKMM421VSN151MR25S	560	35 × 60	0.20	1.91	EKMM451VSN561MA60S			
180	22 × 45	0.20	0.95	EKMM421VSN181MP45S								

◆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 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.