

# KMS Series Upgrade!

- The lower temperature range of the category temperature range has been expanded.
- For solar power generation
- Endurance with ripple current : 105°C 3,000 hours
- Rated voltage range : 160 to 600V
- Capacitance range : 47 to 3,300μF
- Non solvent resistant type
- RoHS2 Compliant



**600V Lineup!**



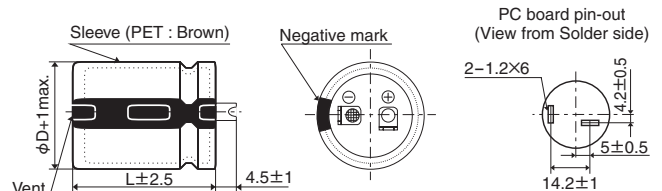
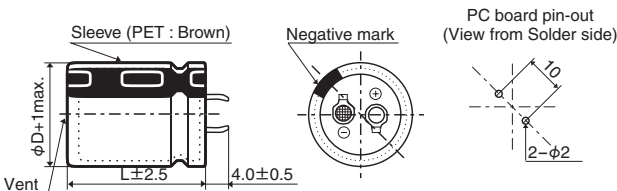
## ◆ SPECIFICATIONS

Items	Characteristics		
<b>Category Temperature Range</b>	-40 to +105°C(160 to 500V <sub>dc</sub> )    -25 to +105°C(550 to 600V <sub>dc</sub> )		
<b>Rated Voltage Range</b>	160 to 600V <sub>dc</sub>		
<b>Capacitance Tolerance</b>	±20% (M) (at 20°C, 120Hz)		
<b>Leakage Current</b>	I ≤ 3√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 400V	420 to 600V
	tan δ (Max.)	0.15	0.20
<b>Low Temperature Characteristics (Max. Impedance Ratio)</b>	Rated voltage (V <sub>dc</sub> )	160 to 400V	420 to 600V
	Z(-25°C)/Z(+20°C)	4	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 3,000 hours at 105°C.		
	Capacitance change	≤ ±20% of the initial value	
	D.F. (tan δ)	≤ 200% of the initial specified value (600V <sub>dc</sub> : ≤ 300%)	
	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]

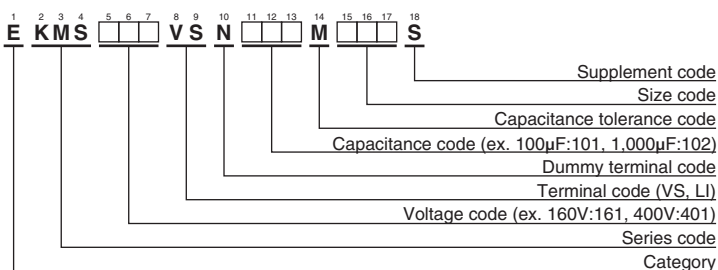
● Terminal Code : VS (φ22 to φ35) : Standard

● Terminal Code : LI (φ35)



The standard design has no plastic disc.

## ◆ 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)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.
160	470	22 × 25	0.15	1.47	EKMS161VSN471MP25S	200	1,800	30 × 45	0.15	3.66	EKMS201VSN182MR45S
	680	22 × 30	0.15	1.86	EKMS161VSN681MP30S		1,800	30 × 50	0.15	3.72	EKMS201VSN182MR50S
	680	25.4 × 25	0.15	1.84	EKMS161VSN681MQ25S		1,800	35 × 40	0.15	3.81	EKMS201VSN182MA40S
	820	22 × 35	0.15	2.09	EKMS161VSN821MP35S		2,200	35 × 45	0.15	4.32	EKMS201VSN222MA45S
	820	25.4 × 30	0.15	2.08	EKMS161VSN821MQ30S		2,700	35 × 50	0.15	4.88	EKMS201VSN272MA50S
	1,000	22 × 40	0.15	2.35	EKMS161VSN102MP40S		250	270	22 × 25	0.15	1.11
	1,000	22 × 45	0.15	2.40	EKMS161VSN102MP45S	330		22 × 30	0.15	1.29	EKMS251VSN331MP30S
	1,000	25.4 × 35	0.15	2.40	EKMS161VSN102MQ35S	390		22 × 35	0.15	1.44	EKMS251VSN391MP35S
	1,000	30 × 25	0.15	2.50	EKMS161VSN102MR25S	390		25.4 × 25	0.15	1.40	EKMS251VSN391MQ25S
	1,200	22 × 50	0.15	2.69	EKMS161VSN122MP50S	470		22 × 40	0.15	1.61	EKMS251VSN471MP40S
	1,200	25.4 × 40	0.15	2.68	EKMS161VSN122MQ40S	470		25.4 × 30	0.15	1.57	EKMS251VSN471MQ30S
	1,200	30 × 30	0.15	2.77	EKMS161VSN122MR30S	560		22 × 45	0.15	1.79	EKMS251VSN561MP45S
	1,200	35 × 25	0.15	2.91	EKMS161VSN122MA25S	560		25.4 × 35	0.15	1.79	EKMS251VSN561MQ35S
	1,500	25.4 × 45	0.15	3.05	EKMS161VSN152MQ45S	560		30 × 25	0.15	1.87	EKMS251VSN561MR25S
	1,500	30 × 35	0.15	3.17	EKMS161VSN152MR35S	680		22 × 50	0.15	2.02	EKMS251VSN681MP50S
	1,800	25.4 × 50	0.15	3.40	EKMS161VSN182MQ50S	680		25.4 × 40	0.15	2.02	EKMS251VSN681MQ40S
	1,800	30 × 40	0.15	3.57	EKMS161VSN182MR40S	680		30 × 30	0.15	2.08	EKMS251VSN681MR30S
	1,800	35 × 30	0.15	3.62	EKMS161VSN182MA30S	680		35 × 25	0.15	2.19	EKMS251VSN681MA25S
	2,200	30 × 45	0.15	4.05	EKMS161VSN222MQ45S	820		25.4 × 45	0.15	2.26	EKMS251VSN821MQ45S
	2,200	35 × 35	0.15	4.07	EKMS161VSN222MA35S	820		30 × 35	0.15	2.34	EKMS251VSN821MR35S
	2,700	30 × 50	0.15	4.56	EKMS161VSN272MR50S	1,000		25.4 × 50	0.15	2.53	EKMS251VSN102MQ50S
	2,700	35 × 40	0.15	4.67	EKMS161VSN272MA40S	1,000		30 × 40	0.15	2.66	EKMS251VSN102MR40S
	2,700	35 × 45	0.15	4.78	EKMS161VSN272MA45S	1,000		35 × 30	0.15	2.70	EKMS251VSN102MA30S
	3,300	35 × 50	0.15	5.40	EKMS161VSN332MA50S	1,200		30 × 45	0.15	2.99	EKMS251VSN122MR45S
180	390	22 × 25	0.15	1.34	EKMS181VSN391MP25S	1,200		30 × 50	0.15	3.04	EKMS251VSN122MR50S
	560	22 × 30	0.15	1.68	EKMS181VSN561MP30S	1,200		35 × 35	0.15	3.00	EKMS251VSN122MA35S
	560	25.4 × 25	0.15	1.67	EKMS181VSN561MQ25S	1,500		35 × 40	0.15	3.48	EKMS251VSN152MA40S
	680	22 × 35	0.15	1.90	EKMS181VSN681MP35S	1,500		35 × 45	0.15	3.56	EKMS251VSN152MA45S
	820	22 × 40	0.15	2.13	EKMS181VSN821MP40S	1,800		35 × 50	0.15	3.98	EKMS251VSN182MA50S
	820	25.4 × 30	0.15	2.08	EKMS181VSN821MQ30S	315	180	22 × 25	0.15	0.95	EKMS3B1VSN181MP25S
	820	30 × 25	0.15	2.26	EKMS181VSN821MR25S		220	22 × 30	0.15	1.10	EKMS3B1VSN221MP30S
	1,000	22 × 45	0.15	2.40	EKMS181VSN102MP45S		220	25.4 × 25	0.15	1.10	EKMS3B1VSN221MQ25S
	1,000	22 × 50	0.15	2.45	EKMS181VSN102MP50S		270	22 × 35	0.15	1.24	EKMS3B1VSN271MP35S
	1,000	25.4 × 35	0.15	2.40	EKMS181VSN102MQ35S		330	22 × 40	0.15	1.40	EKMS3B1VSN331MP40S
	1,000	25.4 × 40	0.15	2.45	EKMS181VSN102MQ40S		330	25.4 × 30	0.15	1.38	EKMS3B1VSN331MQ30S
	1,000	30 × 30	0.15	2.52	EKMS181VSN102MR30S		330	30 × 25	0.15	1.43	EKMS3B1VSN331MR25S
	1,200	25.4 × 45	0.15	2.73	EKMS181VSN122MQ45S		390	22 × 45	0.15	1.56	EKMS3B1VSN391MP45S
	1,200	30 × 35	0.15	2.83	EKMS181VSN122MR35S		390	22 × 50	0.15	1.59	EKMS3B1VSN391MP50S
	1,200	35 × 25	0.15	2.91	EKMS181VSN122MA25S		390	25.4 × 35	0.15	1.57	EKMS3B1VSN391MQ35S
	1,500	25.4 × 50	0.15	3.10	EKMS181VSN152MQ50S		470	25.4 × 40	0.15	1.76	EKMS3B1VSN471MQ40S
	1,500	30 × 40	0.15	3.26	EKMS181VSN152MR40S		470	30 × 30	0.15	1.73	EKMS3B1VSN471MR30S
	1,500	35 × 30	0.15	3.31	EKMS181VSN152MA30S		470	35 × 25	0.15	1.82	EKMS3B1VSN471MA25S
	1,800	30 × 45	0.15	3.66	EKMS181VSN182MR45S		560	25.4 × 45	0.15	1.96	EKMS3B1VSN561MQ45S
	1,800	35 × 35	0.15	3.68	EKMS181VSN182MA35S		560	25.4 × 50	0.15	1.99	EKMS3B1VSN561MQ50S
	2,200	30 × 50	0.15	4.11	EKMS181VSN222MR50S		560	30 × 35	0.15	1.93	EKMS3B1VSN561MR35S
	2,200	35 × 40	0.15	4.22	EKMS181VSN222MA40S		560	35 × 30	0.15	2.02	EKMS3B1VSN561MA30S
	2,700	35 × 45	0.15	4.78	EKMS181VSN272MA45S		680	30 × 40	0.15	2.19	EKMS3B1VSN681MR40S
	2,700	35 × 50	0.15	4.88	EKMS181VSN272MA50S		680	35 × 35	0.15	2.26	EKMS3B1VSN681MA35S
200	390	22 × 25	0.15	1.34	EKMS201VSN391MP25S		820	30 × 45	0.15	2.47	EKMS3B1VSN821MR45S
	470	22 × 30	0.15	1.54	EKMS201VSN471MP30S		820	30 × 50	0.15	2.51	EKMS3B1VSN821MR50S
	560	22 × 35	0.15	1.72	EKMS201VSN561MP35S		820	35 × 40	0.15	2.57	EKMS3B1VSN821MA40S
	560	25.4 × 25	0.15	1.67	EKMS201VSN561MQ25S		1,000	35 × 45	0.15	2.91	EKMS3B1VSN102MA45S
	680	22 × 40	0.15	1.94	EKMS201VSN681MP40S		1,200	35 × 50	0.15	3.25	EKMS3B1VSN122MA50S
	680	25.4 × 30	0.15	1.89	EKMS201VSN681MQ30S	400	120	22 × 25	0.15	0.77	EKMS401VSN121MP25S
	820	22 × 45	0.15	2.17	EKMS201VSN821MP45S		150	22 × 30	0.15	0.90	EKMS401VSN151MP30S
	820	25.4 × 35	0.15	2.17	EKMS201VSN821MQ35S		180	22 × 35	0.15	1.02	EKMS401VSN181MP35S
	820	30 × 25	0.15	2.26	EKMS201VSN821MR25S		180	25.4 × 25	0.15	0.99	EKMS401VSN181MQ25S
	1,000	22 × 50	0.15	2.45	EKMS201VSN102MP50S		220	22 × 40	0.15	1.15	EKMS401VSN221MP40S
	1,000	25.4 × 40	0.15	2.45	EKMS201VSN102MQ40S		220	25.4 × 30	0.15	1.13	EKMS401VSN221MQ30S
	1,000	30 × 30	0.15	2.52	EKMS201VSN102MR30S		270	22 × 45	0.15	1.29	EKMS401VSN271MP45S
	1,000	35 × 25	0.15	2.66	EKMS201VSN102MA25S		270	25.4 × 35	0.15	1.30	EKMS401VSN271MQ35S
	1,200	25.4 × 45	0.15	2.73	EKMS201VSN122MQ45S		270	30 × 25	0.15	1.29	EKMS401VSN271MR25S
	1,200	25.4 × 50	0.15	2.78	EKMS201VSN122MQ50S		330	22 × 50	0.15	1.47	EKMS401VSN331MP50S
	1,200	30 × 35	0.15	2.83	EKMS201VSN122MR35S		330	25.4 × 40	0.15	1.47	EKMS401VSN331MQ40S
	1,200	35 × 30	0.15	2.96	EKMS201VSN122MA30S		330	30 × 30	0.15	1.45	EKMS401VSN331MR30S
	1,500	30 × 40	0.15	3.26	EKMS201VSN152MR40S		330	35 × 25	0.15	1.52	EKMS401VSN331MA25S
	1,500	35 × 35	0.15	3.36	EKMS201VSN152MA35S		390	25.4 × 45	0.15	1.63	EKMS401VSN391MQ45S

◆STANDARD RATINGS

WV (V <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.	WV (V <sub>dc</sub> )	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (Arms/105°C, 120Hz)	Part No.
400	390	25.4 × 50	0.15	1.66	EKMS401VSN391MQ50S	500	47	22 × 25	0.20	0.51	EKMS501VSN470MP25S
	390	30 × 35	0.15	1.61	EKMS401VSN391MR35S		56	22 × 30	0.20	0.58	EKMS501VSN560MP30S
	470	30 × 40	0.15	1.82	EKMS401VSN471MR40S		68	25.4 × 25	0.20	0.65	EKMS501VSN680MQ25S
	470	35 × 30	0.15	1.85	EKMS401VSN471MA30S		82	22 × 35	0.20	0.72	EKMS501VSN820MP35S
	560	30 × 45	0.15	2.04	EKMS401VSN561MR45S		82	25.4 × 30	0.20	0.74	EKMS501VSN820MQ30S
	560	30 × 50	0.15	2.07	EKMS401VSN561MR50S		100	22 × 45	0.20	0.83	EKMS501VSN101MP45S
	560	35 × 35	0.15	2.05	EKMS401VSN561MA35S		100	30 × 25	0.20	0.82	EKMS501VSN101MR25S
	680	35 × 40	0.15	2.34	EKMS401VSN681MA40S		120	22 × 50	0.20	0.93	EKMS501VSN121MP50S
	680	35 × 45	0.15	2.40	EKMS401VSN681MA45S		120	25.4 × 35	0.20	0.93	EKMS501VSN121MQ35S
	820	35 × 50	0.15	2.69	EKMS401VSN821MA50S		120	30 × 30	0.20	0.91	EKMS501VSN121MR30S
420	100	22 × 25	0.20	0.70	EKMS421VSN101MP25S	150	25.4 × 45	0.20	1.08	EKMS501VSN151MQ45S	
	120	22 × 30	0.20	0.81	EKMS421VSN121MP30S	150	30 × 35	0.20	1.04	EKMS501VSN151MR35S	
	120	25.4 × 25	0.20	0.81	EKMS421VSN121MQ25S	150	35 × 25	0.20	0.99	EKMS501VSN151MA25S	
	150	22 × 35	0.20	0.93	EKMS421VSN151MP35S	180	25.4 × 50	0.20	1.20	EKMS501VSN181MQ50S	
	180	22 × 40	0.20	1.04	EKMS421VSN181MP40S	180	30 × 40	0.20	1.17	EKMS501VSN181MR40S	
	180	25.4 × 30	0.20	1.02	EKMS421VSN181MQ30S	180	35 × 30	0.20	1.10	EKMS501VSN181MA30S	
	180	30 × 25	0.20	1.06	EKMS421VSN181MR25S	220	30 × 45	0.20	1.33	EKMS501VSN221MR45S	
	220	22 × 45	0.20	1.17	EKMS421VSN221MP45S	220	35 × 35	0.20	1.23	EKMS501VSN221MA35S	
	220	22 × 50	0.20	1.20	EKMS421VSN221MP50S	270	30 × 50	0.20	1.50	EKMS501VSN271MR50S	
	220	25.4 × 35	0.20	1.18	EKMS421VSN221MQ35S	270	35 × 40	0.20	1.42	EKMS501VSN271MA40S	
	220	30 × 30	0.20	1.18	EKMS421VSN221MR30S	330	35 × 45	0.20	1.60	EKMS501VSN331MA45S	
	270	25.4 × 40	0.20	1.33	EKMS421VSN271MQ40S	390	35 × 50	0.20	1.78	EKMS501VSN391MA50S	
	270	25.4 × 45	0.20	1.36	EKMS421VSN271MQ45S	470	35 × 60	0.20	2.03	EKMS501VSN471MA60S	
	270	35 × 25	0.20	1.38	EKMS421VSN271MA25S	550	82	22 × 35	0.20	0.72	EKMS551VSN820MP35S
	330	25.4 × 50	0.20	1.52	EKMS421VSN331MQ50S		82	25.4 × 30	0.20	0.74	EKMS551VSN820MQ30S
	330	30 × 35	0.20	1.48	EKMS421VSN331MR35S		100	22 × 45	0.20	0.83	EKMS551VSN101MP45S
	330	30 × 40	0.20	1.52	EKMS421VSN331MR40S		100	25.4 × 35	0.20	0.85	EKMS551VSN101MQ35S
	330	35 × 30	0.20	1.55	EKMS421VSN331MA30S		100	30 × 25	0.20	0.82	EKMS551VSN101MR25S
390	30 × 45	0.20	1.70	EKMS421VSN391MR45S	120		22 × 50	0.20	0.93	EKMS551VSN121MP50S	
390	35 × 35	0.20	1.71	EKMS421VSN391MA35S	120		25.4 × 40	0.20	0.95	EKMS551VSN121MQ40S	
470	30 × 50	0.20	1.90	EKMS421VSN471MR50S	120		30 × 30	0.20	0.91	EKMS551VSN121MR30S	
470	35 × 40	0.20	1.95	EKMS421VSN471MA40S	120		35 × 25	0.20	0.88	EKMS551VSN121MA25S	
560	35 × 45	0.20	2.17	EKMS421VSN561MA45S	150		25.4 × 45	0.20	1.08	EKMS551VSN151MQ45S	
680	35 × 50	0.20	2.45	EKMS421VSN681MA50S	150		30 × 35	0.20	1.04	EKMS551VSN151MR35S	
450	82	22 × 25	0.20	0.64	EKMS451VSN820MP25S		180	25.4 × 50	0.20	1.20	EKMS551VSN181MQ50S
	120	22 × 30	0.20	0.81	EKMS451VSN121MP30S		180	30 × 40	0.20	1.17	EKMS551VSN181MR40S
	120	22 × 35	0.20	0.83	EKMS451VSN121MP35S		180	35 × 30	0.20	1.10	EKMS551VSN181MA30S
	120	25.4 × 25	0.20	0.81	EKMS451VSN121MQ25S		220	30 × 45	0.20	1.33	EKMS551VSN221MR45S
	150	22 × 40	0.20	0.94	EKMS451VSN151MP40S		220	35 × 35	0.20	1.23	EKMS551VSN221MA35S
	150	25.4 × 30	0.20	0.93	EKMS451VSN151MQ30S		270	30 × 50	0.20	1.50	EKMS551VSN271MR50S
	180	22 × 45	0.20	1.06	EKMS451VSN181MP45S		270	35 × 40	0.20	1.42	EKMS551VSN271MA40S
	180	25.4 × 35	0.20	1.06	EKMS451VSN181MQ35S	330	35 × 45	0.20	1.60	EKMS551VSN331MA45S	
	180	30 × 25	0.20	1.06	EKMS451VSN181MR25S	330	35 × 50	0.20	1.64	EKMS551VSN331MA50S	
	220	22 × 50	0.20	1.20	EKMS451VSN221MP50S	470	35 × 60	0.20	2.03	EKMS551VSN471MA60S	
	220	25.4 × 40	0.20	1.20	EKMS451VSN221MQ40S	600	100	30 × 30	0.20	0.83	EKMS601VSN101MR30S
	220	30 × 30	0.20	1.18	EKMS451VSN221MR30S		100	35 × 25	0.20	0.85	EKMS601VSN101MA25S
	220	35 × 25	0.20	1.24	EKMS451VSN221MA25S		120	30 × 35	0.20	0.93	EKMS601VSN121MR35S
	270	25.4 × 45	0.20	1.36	EKMS451VSN271MQ45S		150	30 × 40	0.20	1.07	EKMS601VSN151MR40S
	270	25.4 × 50	0.20	1.38	EKMS451VSN271MQ50S		150	35 × 30	0.20	1.06	EKMS601VSN151MA30S
	270	30 × 35	0.20	1.34	EKMS451VSN271MR35S		180	30 × 45	0.20	1.20	EKMS601VSN181MR45S
	270	35 × 30	0.20	1.40	EKMS451VSN271MA30S		180	30 × 50	0.20	1.22	EKMS601VSN181MR50S
	330	30 × 40	0.20	1.52	EKMS451VSN331MR40S		180	35 × 35	0.20	1.18	EKMS601VSN181MA35S
390	30 × 45	0.20	1.70	EKMS451VSN391MR45S	220		30 × 60	0.20	1.40	EKMS601VSN221MR60S	
390	30 × 50	0.20	1.73	EKMS451VSN391MR50S	220		35 × 40	0.20	1.35	EKMS601VSN221MA40S	
390	35 × 35	0.20	1.71	EKMS451VSN391MA35S	220		35 × 45	0.20	1.38	EKMS601VSN221MA45S	
470	35 × 40	0.20	1.95	EKMS451VSN471MA40S	270		35 × 50	0.20	1.56	EKMS601VSN271MA50S	
470	35 × 45	0.20	1.99	EKMS451VSN471MA45S	330		35 × 60	0.20	1.79	EKMS601VSN331MA60S	
560	35 × 50	0.20	2.22	EKMS451VSN561MA50S							

◆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
500 to 600V <sub>dc</sub>	0.70	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.