

KMQ Series

- Downsized from current standard KMG series
- Solvent resistant type except 160 to 450V_{dc}
(see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant

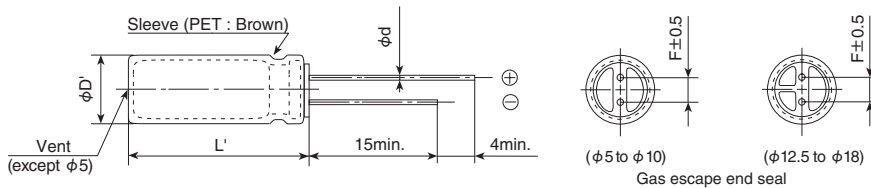


SPECIFICATIONS

Items	Characteristics													
Category	-55 to +105°C(6.3 to 100V _{dc}) -40 to +105°C(160 to 400V _{dc}) -25 to +105°C(450V _{dc})													
Temperature Range														
Rated Voltage Range	6.3 to 450V _{dc}													
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)													
Leakage Current	6.3 to 100V _{dc}												160 to 450V _{dc}	
	I=0.03CV or 4μA, whichever is greater.												CV≤1,000 I=0.1CV+40 max.	
													CV>1,000 I=0.04CV+100 max.	
Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C after 1 minute)														
Dissipation Factor (tan δ)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	350 to 400V	450V		
	tan δ (Max.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.24	0.24		
When nominal capacitance exceeds 1,000μF, add 0.02 to the value above for each 1,000μF increase. (at 20°C, 120Hz)														
Low Temperature Characteristics (Max. Impedance Ratio)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63 to 100V	160 to 200V	250V	350V	400V	450V	
	Z(-25°C)/Z(+20°C)	≤φ8	5	4	3	2	2	2	2	3	3	4	4	6
		≥φ10	5	4	3	2	2	2	2	3	3	4	4	6
	Z(-40°C)/Z(+20°C)	≤φ8	10	8	6	4	3	3	3	8	10	8	8	—
≥φ10		10	8	6	4	3	3	3	4	4	6	6	—	
(at 120Hz)														
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 1,000 hours (2,000 hours for φ 10 and more) 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.													
	Rated voltage	6.3 to 100V _{dc}						160 to 450V _{dc}						
	Capacitance change	≤ ±20% of the initial value						≤ ±20% of the initial value						
	D.F. (tan δ)	≤200% of the initial specified value						≤200% of the initial specified value						
	Leakage current	≤The initial specified value						≤500% of the initial specified value						

DIMENSIONS [mm]

- Terminal Code : E



φD	5	6.3	8	10	12.5	16	18
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φD'	φD+0.5max.						
L'	L+1.5max.						

PART NUMBERING SYSTEM



Please refer to "Product code guide (radial lead type)"



◆ STANDARD RATINGS

is not solvent resistant.

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA rms/105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA rms/105°C, 120Hz)	Part No.
6.3	1,000	8 × 11.5	0.28	390	EKMQ6R3E <input type="checkbox"/> 102MHB5D	63	33	6.3 × 11	0.10	100	EKMQ630E <input type="checkbox"/> 330MF11D
	2,200	10 × 16	0.30	635	EKMQ6R3E <input type="checkbox"/> 222MJ16S		47	6.3 × 11	0.10	120	EKMQ630E <input type="checkbox"/> 470MF11D
	3,300	10 × 20	0.32	840	EKMQ6R3E <input type="checkbox"/> 332MJ20S		68	8 × 11.5	0.10	155	EKMQ630E <input type="checkbox"/> 680MHB5D
	4,700	12.5 × 20	0.34	1,090	EKMQ6R3E <input type="checkbox"/> 472MK20S		100	8 × 11.5	0.10	200	EKMQ630E <input type="checkbox"/> 101MHB5D
	6,800	12.5 × 25	0.38	1,350	EKMQ6R3E <input type="checkbox"/> 682MK25S		220	10 × 16	0.10	335	EKMQ630E <input type="checkbox"/> 221MJ16S
	10,000	16 × 25	0.46	1,650	EKMQ6R3E <input type="checkbox"/> 103ML25S		330	10 × 20	0.10	510	EKMQ630E <input type="checkbox"/> 331MJ20S
	15,000	16 × 31.5	0.56	1,820	EKMQ6R3E <input type="checkbox"/> 153MLN3S		470	12.5 × 20	0.10	640	EKMQ630E <input type="checkbox"/> 471MK20S
	22,000	18 × 35.5	0.70	2,280	EKMQ6R3E <input type="checkbox"/> 223MMP1S	1,000	16 × 25	0.10	930	EKMQ630E <input type="checkbox"/> 102ML25S	
						2,200	18 × 35.5	0.12	1,650	EKMQ630E <input type="checkbox"/> 222MMP1S	
10	220	5 × 11	0.24	155	EKMQ100E <input type="checkbox"/> 221ME11D	100	1.0	5 × 11	0.08	15	EKMQ101E <input type="checkbox"/> 1R0ME11D
	330	6.3 × 11	0.24	210	EKMQ100E <input type="checkbox"/> 331MF11D		2.2	5 × 11	0.08	21	EKMQ101E <input type="checkbox"/> 2R2ME11D
	470	6.3 × 11	0.24	250	EKMQ100E <input type="checkbox"/> 471MF11D		3.3	5 × 11	0.08	29	EKMQ101E <input type="checkbox"/> 3R3ME11D
	1,000	10 × 12.5	0.24	460	EKMQ100E <input type="checkbox"/> 102MJC5S		4.7	5 × 11	0.08	32	EKMQ101E <input type="checkbox"/> 4R7ME11D
	2,200	10 × 16	0.26	705	EKMQ100E <input type="checkbox"/> 222MJ16S		10	5 × 11	0.08	50	EKMQ101E <input type="checkbox"/> 100ME11D
	3,300	12.5 × 20	0.28	1,000	EKMQ100E <input type="checkbox"/> 332MK20S		22	6.3 × 11	0.08	93	EKMQ101E <input type="checkbox"/> 220MF11D
	4,700	12.5 × 25	0.30	1,260	EKMQ100E <input type="checkbox"/> 472MK25S		33	8 × 11.5	0.08	130	EKMQ101E <input type="checkbox"/> 330MHB5D
	6,800	16 × 25	0.34	1,570	EKMQ100E <input type="checkbox"/> 682ML25S		47	8 × 11.5	0.08	140	EKMQ101E <input type="checkbox"/> 470MHB5D
	10,000	16 × 31.5	0.42	1,820	EKMQ100E <input type="checkbox"/> 103MLN3S		68	10 × 12.5	0.08	190	EKMQ101E <input type="checkbox"/> 680MJC5S
15,000	16 × 35.5	0.52	2,050	EKMQ100E <input type="checkbox"/> 153MLP1S	100	10 × 16	0.08	240	EKMQ101E <input type="checkbox"/> 101MJ16S		
	22,000	18 × 40	0.66	2,420	EKMQ100E <input type="checkbox"/> 223MM40S	220	12.5 × 20	0.08	390	EKMQ101E <input type="checkbox"/> 221MK20S	
16	220	6.3 × 11	0.20	190	EKMQ160E <input type="checkbox"/> 221MF11D	330	12.5 × 25	0.08	540	EKMQ101E <input type="checkbox"/> 331MK25S	
	330	6.3 × 11	0.20	225	EKMQ160E <input type="checkbox"/> 331MF11D	470	16 × 25	0.08	715	EKMQ101E <input type="checkbox"/> 471ML25S	
	470	8 × 11.5	0.20	315	EKMQ160E <input type="checkbox"/> 471MHB5D	1,000	18 × 35.5	0.08	960	EKMQ101E <input type="checkbox"/> 102MMP1S	
	1,000	10 × 12.5	0.20	500	EKMQ160E <input type="checkbox"/> 102MJC5S	10	8 × 11.5	0.20	41	EKMQ161E <input type="checkbox"/> 100MHB5D	
	2,200	10 × 20	0.22	710	EKMQ160E <input type="checkbox"/> 222MJ20S	22	10 × 12.5	0.20	92	EKMQ161E <input type="checkbox"/> 220MJC5S	
	3,300	12.5 × 25	0.24	1,170	EKMQ160E <input type="checkbox"/> 332MK25S	33	10 × 16	0.20	125	EKMQ161E <input type="checkbox"/> 330MJ16S	
	4,700	16 × 25	0.26	1,500	EKMQ160E <input type="checkbox"/> 472ML25S	47	10 × 20	0.20	150	EKMQ161E <input type="checkbox"/> 470MJ20S	
	6,800	16 × 25	0.30	1,600	EKMQ160E <input type="checkbox"/> 682ML25S	68	12.5 × 20	0.20	250	EKMQ161E <input type="checkbox"/> 680MK20S	
	10,000	16 × 35.5	0.38	1,930	EKMQ160E <input type="checkbox"/> 103MLP1S	100	12.5 × 25	0.20	310	EKMQ161E <input type="checkbox"/> 101MK25S	
	15,000	18 × 40	0.48	2,210	EKMQ160E <input type="checkbox"/> 153MM40S	220	16 × 31.5	0.20	540	EKMQ161E <input type="checkbox"/> 221MLN3S	
25	100	5 × 11	0.16	125	EKMQ250E <input type="checkbox"/> 101ME11D	330	18 × 35.5	0.20	705	EKMQ161E <input type="checkbox"/> 331MMP1S	
	220	6.3 × 11	0.16	200	EKMQ250E <input type="checkbox"/> 221MF11D	470	18 × 40	0.20	855	EKMQ161E <input type="checkbox"/> 471MM40S	
	330	8 × 11.5	0.16	310	EKMQ250E <input type="checkbox"/> 331MHB5D	1.0	6.3 × 11	0.20	16	EKMQ201E <input type="checkbox"/> 1R0MF11D	
	470	10 × 12.5	0.16	380	EKMQ250E <input type="checkbox"/> 471MJC5S	2.2	6.3 × 11	0.20	25	EKMQ201E <input type="checkbox"/> 2R2MF11D	
	1,000	10 × 16	0.16	610	EKMQ250E <input type="checkbox"/> 102MJ16S	3.3	6.3 × 11	0.20	30	EKMQ201E <input type="checkbox"/> 3R3MF11D	
	2,200	12.5 × 25	0.18	1,090	EKMQ250E <input type="checkbox"/> 222MK25S	4.7	6.3 × 11	0.20	35	EKMQ201E <input type="checkbox"/> 4R7MF11D	
	3,300	16 × 25	0.20	1,400	EKMQ250E <input type="checkbox"/> 332ML25S	10	8 × 11.5	0.20	57	EKMQ201E <input type="checkbox"/> 100MHB5D	
	4,700	16 × 25	0.22	1,570	EKMQ250E <input type="checkbox"/> 472ML25S	22	10 × 16	0.20	105	EKMQ201E <input type="checkbox"/> 220MJ16S	
	6,800	16 × 35.5	0.26	1,850	EKMQ250E <input type="checkbox"/> 682MLP1S	33	10 × 20	0.20	140	EKMQ201E <input type="checkbox"/> 330MJ20S	
	10,000	18 × 40	0.34	2,000	EKMQ250E <input type="checkbox"/> 103MM40S	47	12.5 × 20	0.20	195	EKMQ201E <input type="checkbox"/> 470MK20S	
35	47	5 × 11	0.14	93	EKMQ350E <input type="checkbox"/> 470ME11D	68	12.5 × 25	0.20	250	EKMQ201E <input type="checkbox"/> 680MK25S	
	68	6.3 × 11	0.14	110	EKMQ350E <input type="checkbox"/> 680MF11D	100	16 × 25	0.20	335	EKMQ201E <input type="checkbox"/> 101ML25S	
	100	6.3 × 11	0.14	150	EKMQ350E <input type="checkbox"/> 101MF11D	220	16 × 35.5	0.20	500	EKMQ201E <input type="checkbox"/> 221MLP1S	
	220	8 × 11.5	0.14	270	EKMQ350E <input type="checkbox"/> 221MHB5D	330	18 × 40	0.20	675	EKMQ201E <input type="checkbox"/> 331MM40S	
	330	10 × 12.5	0.14	350	EKMQ350E <input type="checkbox"/> 331MJC5S	3.3	6.3 × 11	0.20	28	EKMQ251E <input type="checkbox"/> 3R3MF11D	
	470	10 × 16	0.14	460	EKMQ350E <input type="checkbox"/> 471MJ16S	4.7	6.3 × 11	0.20	35	EKMQ251E <input type="checkbox"/> 4R7MF11D	
	1,000	12.5 × 20	0.14	810	EKMQ350E <input type="checkbox"/> 102MK20S	10	10 × 12.5	0.20	71	EKMQ251E <input type="checkbox"/> 100MJC5S	
	2,200	16 × 25	0.16	1,260	EKMQ350E <input type="checkbox"/> 222ML25S	22	10 × 20	0.20	105	EKMQ251E <input type="checkbox"/> 220MJ20S	
	3,300	16 × 31.5	0.18	1,500	EKMQ350E <input type="checkbox"/> 332MLN3S	33	10 × 20	0.20	140	EKMQ251E <input type="checkbox"/> 330MJ20S	
4,700	16 × 35.5	0.20	1,780	EKMQ350E <input type="checkbox"/> 472MLP1S	47	12.5 × 20	0.20	190	EKMQ251E <input type="checkbox"/> 470MK20S		
	6,800	18 × 40	0.24	2,000	EKMQ350E <input type="checkbox"/> 682MM40S	68	16 × 25	0.20	270	EKMQ251E <input type="checkbox"/> 680ML25S	
50	1.0	5 × 11	0.12	13	EKMQ500E <input type="checkbox"/> 1R0ME11D	100	16 × 25	0.20	310	EKMQ251E <input type="checkbox"/> 101ML25S	
	2.2	5 × 11	0.12	20	EKMQ500E <input type="checkbox"/> 2R2ME11D	220	18 × 35.5	0.20	485	EKMQ251E <input type="checkbox"/> 221MMP1S	
	3.3	5 × 11	0.12	25	EKMQ500E <input type="checkbox"/> 3R3ME11D	2.2	6.3 × 11	0.24	21	EKMQ351E <input type="checkbox"/> 2R2MF11D	
	4.7	5 × 11	0.12	30	EKMQ500E <input type="checkbox"/> 4R7ME11D	3.3	8 × 11.5	0.24	30	EKMQ351E <input type="checkbox"/> 3R3MHB5D	
	10	5 × 11	0.12	46	EKMQ500E <input type="checkbox"/> 100ME11D	4.7	8 × 11.5	0.24	39	EKMQ351E <input type="checkbox"/> 4R7MHB5D	
	22	5 × 11	0.12	68	EKMQ500E <input type="checkbox"/> 220ME11D	10	10 × 12.5	0.24	64	EKMQ351E <input type="checkbox"/> 100MJC5S	
	33	5 × 11	0.12	90	EKMQ500E <input type="checkbox"/> 330ME11D	22	12.5 × 20	0.24	130	EKMQ351E <input type="checkbox"/> 220MK20S	
	47	6.3 × 11	0.12	115	EKMQ500E <input type="checkbox"/> 470MF11D	33	12.5 × 25	0.24	170	EKMQ351E <input type="checkbox"/> 330MK25S	
	68	6.3 × 11	0.12	150	EKMQ500E <input type="checkbox"/> 680MF11D	47	16 × 25	0.24	230	EKMQ351E <input type="checkbox"/> 470ML25S	
	100	8 × 11.5	0.12	190	EKMQ500E <input type="checkbox"/> 101MHB5D	68	16 × 25	0.24	285	EKMQ351E <input type="checkbox"/> 680ML25S	
	220	10 × 12.5	0.12	300	EKMQ500E <input type="checkbox"/> 221MJC5S	100	18 × 31.5	0.24	375	EKMQ351E <input type="checkbox"/> 101MMN3S	
330	10 × 16	0.12	410	EKMQ500E <input type="checkbox"/> 331MJ16S	1.0	6.3 × 11	0.24	15	EKMQ401E <input type="checkbox"/> 1R0MF11D		
470	10 × 20	0.12	540	EKMQ500E <input type="checkbox"/> 471MJ20S	2.2	8 × 11.5	0.24	27	EKMQ401E <input type="checkbox"/> 2R2MHB5D		
1,000	12.5 × 25	0.12	950	EKMQ500E <input type="checkbox"/> 102MK25S	3.3	8 × 11.5	0.24	34	EKMQ401E <input type="checkbox"/> 3R3MHB5D		
2,200	16 × 31.5	0.14	1,410	EKMQ500E <input type="checkbox"/> 222MLN3S	4.7	10 × 12.5	0.24	42	EKMQ401E <input type="checkbox"/> 4R7MJC5S		
3,300	18 × 35.5	0.16	1,770	EKMQ500E <input type="checkbox"/> 332MMP1S	10	10 × 16	0.24	64	EKMQ401E <input type="checkbox"/> 100MJ16S		
63	22	5 × 11	0.10	71	EKMQ630E <input type="checkbox"/> 220ME11D						

: Enter the appropriate lead forming or taping code.

◆ STANDARD RATINGS

is not solvent resistant.

WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part No.	WV (V _{dc})	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part No.
400	22	12.5 × 25	0.24	145	EKMQ401E□□220MK25S	450	4.7	10 × 12.5	0.24	32	EKMQ451E□□4R7MJC5S
	33	16 × 25	0.24	195	EKMQ401E□□330ML25S		10	10 × 20	0.24	56	EKMQ451E□□100MJ20S
	47	16 × 25	0.24	200	EKMQ401E□□470ML25S		22	12.5 × 25	0.24	100	EKMQ451E□□220MK25S
	68	16 × 31.5	0.24	240	EKMQ401E□□680MLN3S		33	16 × 25	0.24	125	EKMQ451E□□330ML25S
	100	18 × 35.5	0.24	310	EKMQ401E□□101MMP1S		47	16 × 31.5	0.24	155	EKMQ451E□□470MLN3S
450	2.2	8 × 11.5	0.24	20	EKMQ451E□□2R2MHB5D	68	18 × 35.5	0.24	185	EKMQ451E□□680MMP1S	
	3.3	10 × 12.5	0.24	28	EKMQ451E□□3R3MJC5S	100	18 × 40	0.24	200	EKMQ451E□□101MM40S	

□□ : Enter the appropriate lead forming or taping code.

◆ RATED RIPPLE CURRENT MULTIPLIERS

● Frequency Multipliers

Capacitance(μF)	Frequency(Hz)	50	120	300	1k	10k	100k
1.0 to 4.7		0.65	1.00	1.35	1.75	2.30	2.50
10 to 68		0.75	1.00	1.25	1.50	1.75	1.80
100 to 1,000		0.80	1.00	1.15	1.30	1.40	1.50
2,200 to		0.85	1.00	1.03	1.05	1.08	1.08

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.