

KMQ Series



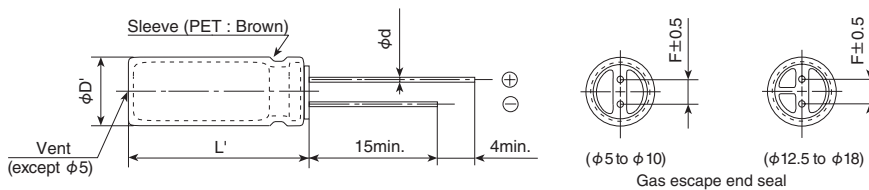
- Downsized from current standard KMG series
- Solvent resistant type except 160 to 450V_{dc}
(see PRECAUTIONS AND GUIDELINES)
- RoHS2 Compliant

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								

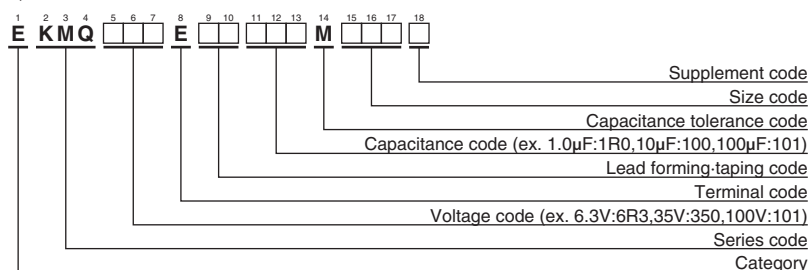
DIMENSIONS [mm]

- 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	EKMQR3E□□102MHB5D	50	220	10 × 12.5	0.12	300	EKMQ500E□□221MJC5S	
	2,200	10 × 16	0.30	635	EKMQR3E□□222MJ16S		330	10 × 16	0.12	410	EKMQ500E□□331MJ16S	
	3,300	10 × 20	0.32	840	EKMQR3E□□332MJ20S		470	10 × 20	0.12	540	EKMQ500E□□471MJ20S	
	4,700	12.5 × 20	0.34	1,090	EKMQR3E□□472MK20S		1,000	12.5 × 25	0.12	950	EKMQ500E□□102MK25S	
	6,800	12.5 × 25	0.38	1,350	EKMQR3E□□682MK25S		2,200	16 × 31.5	0.14	1,410	EKMQ500E□□222MLN3S	
	10,000	16 × 25	0.46	1,650	EKMQR3E□□103ML25S		3,300	18 × 35.5	0.16	1,770	EKMQ500E□□332MMP1S	
	15,000	16 × 31.5	0.56	1,820	EKMQR3E□□153MLN3S		63	22	5 × 11	0.10	71	EKMQ630E□□220ME11D
	22,000	18 × 35.5	0.70	2,280	EKMQR3E□□223MMP1S			33	6.3 × 11	0.10	100	EKMQ630E□□330MF11D
10	220	5 × 11	0.24	155	EKMQ100E□□221ME11D	47		6.3 × 11	0.10	120	EKMQ630E□□470MF11D	
	330	6.3 × 11	0.24	210	EKMQ100E□□331MF11D	68		8 × 11.5	0.10	155	EKMQ630E□□680MHB5D	
	470	6.3 × 11	0.24	250	EKMQ100E□□471MF11D	100		8 × 11.5	0.10	200	EKMQ630E□□101MHB5D	
	1,000	10 × 12.5	0.24	460	EKMQ100E□□102MJC5S	220		10 × 16	0.10	335	EKMQ630E□□221MJ16S	
	2,200	10 × 16	0.26	705	EKMQ100E□□222MJ16S	330		10 × 20	0.10	510	EKMQ630E□□331MJ20S	
	3,300	12.5 × 20	0.28	1,000	EKMQ100E□□332MK20S	470		12.5 × 20	0.10	640	EKMQ630E□□471MK20S	
	4,700	12.5 × 25	0.30	1,260	EKMQ100E□□472MK25S	1,000	16 × 25	0.10	930	EKMQ630E□□102ML25S		
	6,800	16 × 25	0.34	1,570	EKMQ100E□□682ML25S	2,200	18 × 35.5	0.12	1,650	EKMQ630E□□222MMP1S		
16	10,000	16 × 31.5	0.42	1,820	EKMQ100E□□103MLN3S	100	1.0	5 × 11	0.08	15	EKMQ101E□□1R0ME11D	
	15,000	16 × 35.5	0.52	2,050	EKMQ100E□□153MLP1S		2.2	5 × 11	0.08	21	EKMQ101E□□2R2ME11D	
	22,000	18 × 40	0.66	2,420	EKMQ100E□□223MM40S		3.3	5 × 11	0.08	29	EKMQ101E□□3R3ME11D	
	220	6.3 × 11	0.20	190	EKMQ160E□□221MF11D		4.7	5 × 11	0.08	32	EKMQ101E□□4R7ME11D	
	330	6.3 × 11	0.20	225	EKMQ160E□□331MF11D		10	5 × 11	0.08	50	EKMQ101E□□100ME11D	
	470	8 × 11.5	0.20	315	EKMQ160E□□471MHB5D		22	6.3 × 11	0.08	93	EKMQ101E□□220MF11D	
	1,000	10 × 12.5	0.20	500	EKMQ160E□□102MJC5S		33	8 × 11.5	0.08	130	EKMQ101E□□330MHB5D	
	2,200	10 × 20	0.22	710	EKMQ160E□□222MJ20S		47	8 × 11.5	0.08	140	EKMQ101E□□470MHB5D	
25	3,300	12.5 × 25	0.24	1,170	EKMQ160E□□332MK25S	68	10 × 12.5	0.08	190	EKMQ101E□□680MJC5S		
	4,700	16 × 25	0.26	1,500	EKMQ160E□□472ML25S	100	10 × 16	0.08	240	EKMQ101E□□101MJ16S		
	6,800	16 × 25	0.30	1,600	EKMQ160E□□682ML25S	220	12.5 × 20	0.08	390	EKMQ101E□□221MK20S		
	10,000	16 × 35.5	0.38	1,930	EKMQ160E□□103MLP1S	330	12.5 × 25	0.08	540	EKMQ101E□□331MK25S		
	15,000	18 × 40	0.48	2,210	EKMQ160E□□153MM40S	470	16 × 25	0.08	715	EKMQ101E□□471ML25S		
	100	5 × 11	0.16	125	EKMQ250E□□101ME11D	1,000	18 × 35.5	0.08	960	EKMQ101E□□102MMP1S		
	220	6.3 × 11	0.16	200	EKMQ250E□□221MF11D	160	68	12.5 × 20	0.20	250	EKMQ161E□□680MK20S	
	330	8 × 11.5	0.16	310	EKMQ250E□□331MHB5D		100	12.5 × 25	0.20	310	EKMQ161E□□101MK25S	
470	10 × 12.5	0.16	380	EKMQ250E□□471MJC5S	220		16 × 31.5	0.20	540	EKMQ161E□□221MLN3S		
1,000	10 × 16	0.16	610	EKMQ250E□□102MJ16S	330		18 × 35.5	0.20	705	EKMQ161E□□331MMP1S		
2,200	12.5 × 25	0.18	1,090	EKMQ250E□□222MK25S	470		18 × 40	0.20	855	EKMQ161E□□471MM40S		
3,300	16 × 25	0.20	1,400	EKMQ250E□□332ML25S	200		47	12.5 × 20	0.20	195	EKMQ201E□□470MK20S	
4,700	16 × 25	0.22	1,570	EKMQ250E□□472ML25S			68	12.5 × 25	0.20	250	EKMQ201E□□680MK25S	
6,800	16 × 35.5	0.26	1,850	EKMQ250E□□682MLP1S			100	16 × 25	0.20	335	EKMQ201E□□101ML25S	
10,000	18 × 40	0.34	2,000	EKMQ250E□□103MM40S		220	16 × 35.5	0.20	500	EKMQ201E□□221MLP1S		
35	47	5 × 11	0.14	93		EKMQ350E□□470ME11D	330	18 × 40	0.20	675	EKMQ201E□□331MM40S	
	68	6.3 × 11	0.14	110		EKMQ350E□□680MF11D	250	47	12.5 × 20	0.20	190	EKMQ251E□□470MK20S
	100	6.3 × 11	0.14	150		EKMQ350E□□101MF11D		68	16 × 25	0.20	270	EKMQ251E□□680ML25S
	220	8 × 11.5	0.14	270		EKMQ350E□□221MHB5D		100	16 × 25	0.20	310	EKMQ251E□□101ML25S
	330	10 × 12.5	0.14	350	EKMQ350E□□331MJC5S	220		18 × 35.5	0.20	485	EKMQ251E□□221MMP1S	
	470	10 × 16	0.14	460	EKMQ350E□□471MJ16S	350		22	12.5 × 20	0.24	130	EKMQ351E□□220MK20S
	1,000	12.5 × 20	0.14	810	EKMQ350E□□102MK20S			33	12.5 × 25	0.24	170	EKMQ351E□□330MK25S
	2,200	16 × 25	0.16	1,260	EKMQ350E□□222ML25S			47	16 × 25	0.24	230	EKMQ351E□□470ML25S
3,300	16 × 31.5	0.18	1,500	EKMQ350E□□332MLN3S	68			16 × 25	0.24	285	EKMQ351E□□680ML25S	
4,700	16 × 35.5	0.20	1,780	EKMQ350E□□472MLP1S	100		18 × 31.5	0.24	375	EKMQ351E□□101MMN3S		
6,800	18 × 40	0.24	2,000	EKMQ350E□□682MM40S	400		22	12.5 × 25	0.24	145	EKMQ401E□□220MK25S	
50	1.0	5 × 11	0.12	13			EKMQ500E□□1R0ME11D	33	16 × 25	0.24	195	EKMQ401E□□330ML25S
	2.2	5 × 11	0.12	20			EKMQ500E□□2R2ME11D	47	16 × 25	0.24	200	EKMQ401E□□470ML25S
	3.3	5 × 11	0.12	25		EKMQ500E□□3R3ME11D	68	16 × 31.5	0.24	240	EKMQ401E□□680MLN3S	
	4.7	5 × 11	0.12	30		EKMQ500E□□4R7ME11D	100	18 × 35.5	0.24	310	EKMQ401E□□101MMP1S	
	10	5 × 11	0.12	46		EKMQ500E□□100ME11D	450	22	12.5 × 25	0.24	100	EKMQ451E□□220MK25S
	22	5 × 11	0.12	68		EKMQ500E□□220ME11D		33	16 × 25	0.24	125	EKMQ451E□□330ML25S
	33	5 × 11	0.12	90		EKMQ500E□□330ME11D		47	16 × 31.5	0.24	155	EKMQ451E□□470MLN3S
	47	6.3 × 11	0.12	115	EKMQ500E□□470MF11D	68		18 × 35.5	0.24	185	EKMQ451E□□680MMP1S	
68	6.3 × 11	0.12	150	EKMQ500E□□680MF11D	100	18 × 40		0.24	200	EKMQ451E□□101MM40S		
100	8 × 11.5	0.12	190	EKMQ500E□□101MHB5D								

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



KMQ Series

◆ 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.