

KMQ Series

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

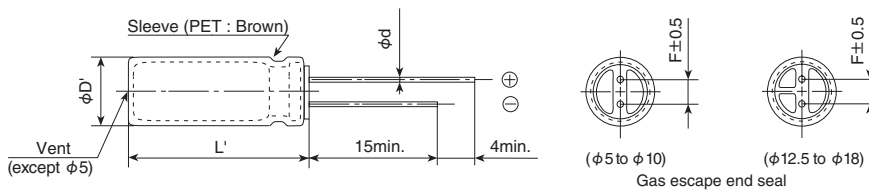


SPECIFICATIONS

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						

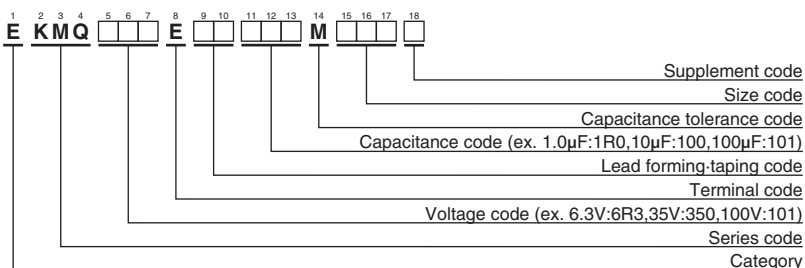
DIMENSIONS [mm]

- 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		22	5 × 11	0.10	71	EKMQR3E□□220ME11D
	22,000	18 × 35.5	0.70	2,280	EKMQR3E□□223MMP1S		33	6.3 × 11	0.10	100	EKMQR3E□□330MF11D
10	220	5 × 11	0.24	155	EKMQR3E□□221ME11D	47	6.3 × 11	0.10	120	EKMQR3E□□470MF11D	
	330	6.3 × 11	0.24	210	EKMQR3E□□331MF11D	68	8 × 11.5	0.10	155	EKMQR3E□□680MHB5D	
	470	6.3 × 11	0.24	250	EKMQR3E□□471MF11D	100	8 × 11.5	0.10	200	EKMQR3E□□101MH5D	
	1,000	10 × 12.5	0.24	460	EKMQR3E□□102MJC5S	220	10 × 16	0.10	335	EKMQR3E□□221MJ16S	
	2,200	10 × 16	0.26	705	EKMQR3E□□222MJ16S	330	10 × 20	0.10	510	EKMQR3E□□331MJ20S	
	3,300	12.5 × 20	0.28	1,000	EKMQR3E□□332MK20S	470	12.5 × 20	0.10	640	EKMQR3E□□471MK20S	
	4,700	12.5 × 25	0.30	1,260	EKMQR3E□□472MK25S	1,000	16 × 25	0.10	930	EKMQR3E□□101MK25S	
	6,800	16 × 25	0.34	1,570	EKMQR3E□□682ML25S	2,200	18 × 35.5	0.12	1,650	EKMQR3E□□222MMP1S	
	10,000	16 × 31.5	0.42	1,820	EKMQR3E□□103MLN3S	1.0	5 × 11	0.08	15	EKMQR3E□□1R0ME11D	
	15,000	16 × 35.5	0.52	2,050	EKMQR3E□□153MLP1S	2.2	5 × 11	0.08	21	EKMQR3E□□2R2ME11D	
22,000	18 × 40	0.66	2,420	EKMQR3E□□223MM40S	3.3	5 × 11	0.08	29	EKMQR3E□□3R3ME11D		
16	220	6.3 × 11	0.20	190	EKMQR3E□□221MF11D	4.7	5 × 11	0.08	32	EKMQR3E□□4R7ME11D	
	330	6.3 × 11	0.20	225	EKMQR3E□□331MF11D	10	5 × 11	0.08	50	EKMQR3E□□100ME11D	
	470	8 × 11.5	0.20	315	EKMQR3E□□471MHB5D	22	6.3 × 11	0.08	93	EKMQR3E□□220MF11D	
	1,000	10 × 12.5	0.20	500	EKMQR3E□□102MJC5S	33	8 × 11.5	0.08	130	EKMQR3E□□330MHB5D	
	2,200	10 × 20	0.22	710	EKMQR3E□□222MJ20S	47	8 × 11.5	0.08	140	EKMQR3E□□470MHB5D	
	3,300	12.5 × 25	0.24	1,170	EKMQR3E□□332MK25S	68	10 × 12.5	0.08	190	EKMQR3E□□680MJC5S	
	4,700	16 × 25	0.26	1,500	EKMQR3E□□472ML25S	100	10 × 16	0.08	240	EKMQR3E□□101MJ16S	
	6,800	16 × 25	0.30	1,600	EKMQR3E□□682ML25S	220	12.5 × 20	0.08	390	EKMQR3E□□221MK20S	
	10,000	16 × 35.5	0.38	1,930	EKMQR3E□□103MLP1S	330	12.5 × 25	0.08	540	EKMQR3E□□331MK25S	
	15,000	18 × 40	0.48	2,210	EKMQR3E□□153MM40S	470	16 × 25	0.08	715	EKMQR3E□□471ML25S	
25	100	5 × 11	0.16	125	EKMQR3E□□101ME11D	1,000	18 × 35.5	0.08	960	EKMQR3E□□102MMP1S	
	220	6.3 × 11	0.16	200	EKMQR3E□□221MF11D	68	12.5 × 20	0.20	250	EKMQR3E□□680MK20S	
	330	8 × 11.5	0.16	310	EKMQR3E□□331MHB5D	100	12.5 × 25	0.20	310	EKMQR3E□□101MK25S	
	470	10 × 12.5	0.16	380	EKMQR3E□□471MJC5S	220	16 × 31.5	0.20	540	EKMQR3E□□221MLN3S	
	1,000	10 × 16	0.16	610	EKMQR3E□□102MJ16S	330	18 × 35.5	0.20	705	EKMQR3E□□331MMP1S	
	2,200	12.5 × 25	0.18	1,090	EKMQR3E□□222MK25S	470	18 × 40	0.20	855	EKMQR3E□□471MM40S	
	3,300	16 × 25	0.20	1,400	EKMQR3E□□332ML25S	47	12.5 × 20	0.20	195	EKMQR3E□□470MK20S	
	4,700	16 × 25	0.22	1,570	EKMQR3E□□472ML25S	68	12.5 × 25	0.20	250	EKMQR3E□□680MK25S	
	6,800	16 × 35.5	0.26	1,850	EKMQR3E□□682MLP1S	100	16 × 25	0.20	335	EKMQR3E□□101ML25S	
	10,000	18 × 40	0.34	2,000	EKMQR3E□□103MM40S	220	16 × 35.5	0.20	500	EKMQR3E□□221MLP1S	
35	47	5 × 11	0.14	93	EKMQR3E□□470ME11D	330	18 × 40	0.20	675	EKMQR3E□□331MM40S	
	68	6.3 × 11	0.14	110	EKMQR3E□□680MF11D	47	12.5 × 20	0.20	190	EKMQR3E□□470MK20S	
	100	6.3 × 11	0.14	150	EKMQR3E□□101MF11D	68	16 × 25	0.20	270	EKMQR3E□□680ML25S	
	220	8 × 11.5	0.14	270	EKMQR3E□□221MHB5D	100	16 × 25	0.20	310	EKMQR3E□□101ML25S	
	330	10 × 12.5	0.14	350	EKMQR3E□□331MJC5S	220	18 × 35.5	0.20	485	EKMQR3E□□221MMP1S	
	470	10 × 16	0.14	460	EKMQR3E□□471MJ16S	22	12.5 × 20	0.24	130	EKMQR3E□□220MK20S	
	1,000	12.5 × 20	0.14	810	EKMQR3E□□102MK20S	33	12.5 × 25	0.24	170	EKMQR3E□□330MK25S	
	2,200	16 × 25	0.16	1,260	EKMQR3E□□222ML25S	47	16 × 25	0.24	230	EKMQR3E□□470ML25S	
50	3,300	16 × 31.5	0.18	1,500	EKMQR3E□□332MLN3S	68	16 × 25	0.24	285	EKMQR3E□□680ML25S	
	4,700	16 × 35.5	0.20	1,780	EKMQR3E□□472MLP1S	100	18 × 31.5	0.24	375	EKMQR3E□□101MMN3S	
	6,800	18 × 40	0.24	2,000	EKMQR3E□□682MM40S	22	12.5 × 25	0.24	145	EKMQR3E□□220MK25S	
	1.0	5 × 11	0.12	13	EKMQR3E□□1R0ME11D	33	16 × 25	0.24	195	EKMQR3E□□330ML25S	
	2.2	5 × 11	0.12	20	EKMQR3E□□2R2ME11D	47	16 × 25	0.24	200	EKMQR3E□□470ML25S	
	3.3	5 × 11	0.12	25	EKMQR3E□□3R3ME11D	68	16 × 31.5	0.24	240	EKMQR3E□□680MLN3S	
50	4.7	5 × 11	0.12	30	EKMQR3E□□4R7ME11D	100	18 × 35.5	0.24	310	EKMQR3E□□101MMP1S	
	10	5 × 11	0.12	46	EKMQR3E□□100ME11D	22	12.5 × 25	0.24	100	EKMQR3E□□220MK25S	
	22	5 × 11	0.12	68	EKMQR3E□□220ME11D	33	16 × 25	0.24	125	EKMQR3E□□330ML25S	
	33	5 × 11	0.12	90	EKMQR3E□□330ME11D	47	16 × 31.5	0.24	155	EKMQR3E□□470MLN3S	
	47	6.3 × 11	0.12	115	EKMQR3E□□470MF11D	68	18 × 35.5	0.24	185	EKMQR3E□□680MMP1S	
	68	6.3 × 11	0.12	150	EKMQR3E□□680MF11D	100	18 × 40	0.24	200	EKMQR3E□□101MM40S	
	100	8 × 11.5	0.12	190	EKMQR3E□□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.