

KMQ Series

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

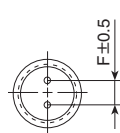
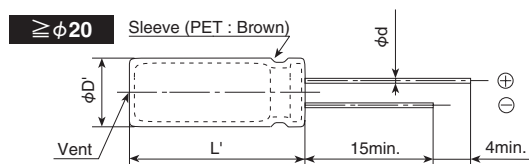
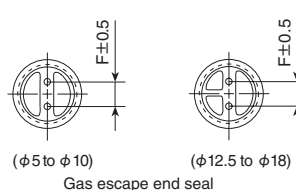
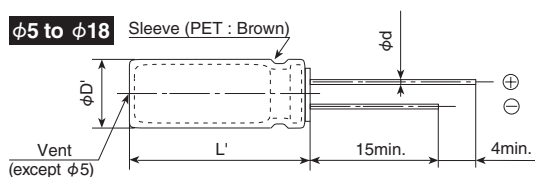


SPECIFICATIONS

Items	Characteristics													
Category														
Temperature Range	-55 to +105℃(6.3 to 100V _{dc}) -40 to +105℃(160 to 400V _{dc}) -25 to +105℃(450V _{dc})													
Rated Voltage Range	6.3 to 450V _{dc}													
Capacitance Tolerance	±20% (M) (at 20℃, 120Hz)													
Leakage Current	6.3 to 100V _{dc}							160 to 450V _{dc}						
	≤φ18	I=0.03CV or 4μA, whichever is greater.							CV \ Time		After 1minute			
									CV≤1,000		I=0.1CV+40 max.			
									CV>1,000		I=0.04CV+100 max.			
	(at 20℃ after 1 minute)							(at 20℃)						
≥φ20	I=0.03CV max.							(at 20℃ after 3 minutes)						
Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)														
Dissipation Factor (tanδ)	Rated voltage (V _{dc})	6.3V	10V	16V	25V	35V	50V	63V	100V	160 to 250V	350 to 400V	450V		
	tanδ (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℃, 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℃)/Z(+20℃)	≤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℃)/Z(+20℃)	≤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℃ 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 φ10 and more at 105℃).													
	Capacitance change	≤±20% of the initial value												
	D.F. (tanδ)	≤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℃ after exposing them for 1,000 hours at 105℃ 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. (tanδ)	≤200% of the initial specified value							≤200% of the initial specified value					
	Leakage current	≤The initial specified value							≤500% of the initial specified value					

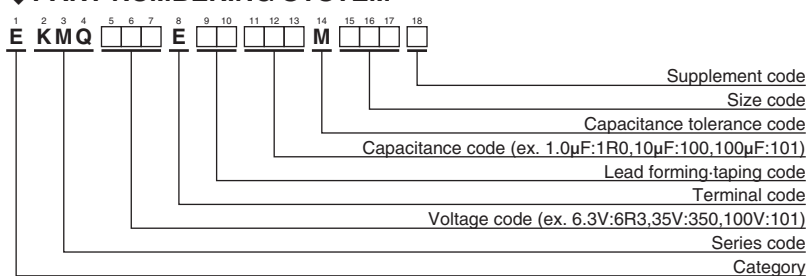
DIMENSIONS [mm]

- Terminal Code : E



φD	5	6.3	8	10	12.5	16	18	20	22
φd	0.5	0.5	0.6	0.6	0.6	0.8	0.8	1.0	1.0
F	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0
φD'	φD+0.5max.							φD+0.5max.	
L'	L+1.5max.							L+2.0max.	

PART NUMBERING SYSTEM



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

◆ STANDARD RATINGS

□ is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mA rms/ 105°C, 120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mA rms/ 105°C, 120Hz)	Part No.
6.3	1,000	8×11.5	0.28	390	EKM6R3E□□102MHB5D	50	330	10×16	0.12	410	EKM500E□□331MJ16S
	2,200	10×16	0.30	635	EKM6R3E□□222MJ16S		470	10×20	0.12	540	EKM500E□□471MJ20S
	3,300	10×20	0.32	840	EKM6R3E□□332MJ20S		1,000	12.5×25	0.12	950	EKM500E□□102MK25S
	4,700	12.5×20	0.34	1,090	EKM6R3E□□472MK20S		2,200	16×31.5	0.14	1,410	EKM500E□□222MLN3S
	6,800	12.5×25	0.38	1,350	EKM6R3E□□682MK25S		3,300	18×35.5	0.16	1,770	EKM500E□□332MMP1S
	10,000	16×25	0.46	1,650	EKM6R3E□□103ML25S		4,700	20×40	0.18	2,100	EKM500E□□472MN40S
	15,000	16×31.5	0.56	1,820	EKM6R3E□□153MLN3S		6,800	22×50	0.22	2,500	EKM500E□□682MP50S
	22,000	18×35.5	0.70	2,280	EKM6R3E□□223MMP1S		22	5×11	0.10	71	EKM630E□□220ME11D
	33,000	20×40	0.92	2,500	EKM6R3E□□333MNP40S		33	6.3×11	0.10	100	EKM630E□□330MF11D
10	47,000	22×50	1.20	2,780	EKM6R3E□□473MP50S	63	47	6.3×11	0.10	120	EKM630E□□470MF11D
	220	5×11	0.24	155	EKM100E□□221MF11D		68	8×11.5	0.10	155	EKM630E□□680MHB5D
	330	6.3×11	0.24	210	EKM100E□□331MF11D		100	8×11.5	0.10	200	EKM630E□□101MHB5D
	470	6.3×11	0.24	250	EKM100E□□471MF11D		220	10×16	0.10	335	EKM630E□□221MJ16S
	1,000	10×12.5	0.24	460	EKM100E□□102MJC5S		330	10×20	0.10	510	EKM630E□□331MJ20S
	2,200	10×16	0.26	705	EKM100E□□222MJ16S		470	12.5×20	0.10	640	EKM630E□□471MK20S
	3,300	12.5×20	0.28	1,000	EKM100E□□332MK20S		1,000	16×25	0.10	930	EKM630E□□102ML25S
	4,700	12.5×25	0.30	1,260	EKM100E□□472MK25S		2,200	18×35.5	0.12	1,650	EKM630E□□222MMP1S
	6,800	16×25	0.34	1,570	EKM100E□□682ML25S	100	3,300	20×40	0.14	1,950	EKM630E□□332MN40S
16	10,000	16×31.5	0.42	1,820	EKM100E□□103MLN3S		4,700	22×50	0.16	2,450	EKM630E□□472MP50S
	15,000	16×35.5	0.52	2,050	EKM100E□□153MLP1S		1.0	5×11	0.08	15	EKM101E□□1R0ME11D
	22,000	18×40	0.66	2,420	EKM100E□□223MMP40S		2.2	5×11	0.08	21	EKM101E□□2R2ME11D
	33,000	22×50	0.88	3,210	EKM100E□□333MP50S		3.3	5×11	0.08	29	EKM101E□□3R3ME11D
	220	6.3×11	0.20	190	EKM160E□□221MF11D		4.7	5×11	0.08	32	EKM101E□□4R7ME11D
	330	6.3×11	0.20	225	EKM160E□□331MF11D		10	5×11	0.08	50	EKM101E□□100ME11D
	470	8×11.5	0.20	315	EKM160E□□471MHB5D		22	6.3×11	0.08	93	EKM101E□□220MF11D
	1,000	10×12.5	0.20	500	EKM160E□□102MJC5S		33	8×11.5	0.08	130	EKM101E□□330MHB5D
	2,200	10×20	0.22	710	EKM160E□□222MJ20S	160	47	8×11.5	0.08	140	EKM101E□□470MHB5D
25	3,300	12.5×25	0.24	1,170	EKM160E□□332MK25S		68	10×12.5	0.08	190	EKM101E□□680MJC5S
	4,700	16×25	0.26	1,500	EKM160E□□472ML25S		100	10×16	0.08	240	EKM101E□□101MJ16S
	6,800	16×25	0.30	1,600	EKM160E□□682ML25S		220	12.5×20	0.08	390	EKM101E□□221MK20S
	10,000	16×35.5	0.38	1,930	EKM160E□□103MLP1S		330	12.5×25	0.08	540	EKM101E□□331MK25S
	15,000	18×40	0.48	2,210	EKM160E□□153MM40S		470	16×25	0.08	715	EKM101E□□471ML25S
	22,000	22×40	0.62	2,710	EKM160E□□223MP40S		1,000	18×35.5	0.08	960	EKM101E□□102MMP1S
	100	5×11	0.16	125	EKM250E□□101ME11D		2,200	22×50	0.10	1,750	EKM101E□□222MP50S
	220	6.3×11	0.16	200	EKM250E□□221MF11D	200	10	8×11.5	0.20	41	EKM201E□□100MHB5D
	330	8×11.5	0.16	310	EKM250E□□331MHB5D		22	10×12.5	0.20	92	EKM201E□□220MJC5S
35	470	10×12.5	0.16	380	EKM250E□□471MJC5S		33	10×16	0.20	125	EKM201E□□330MJ16S
	1,000	10×16	0.16	610	EKM250E□□102MJ16S		47	10×20	0.20	150	EKM201E□□470MJ20S
	2,200	12.5×25	0.18	1,090	EKM250E□□222MK25S		68	12.5×20	0.20	250	EKM201E□□680MK20S
	3,300	16×25	0.20	1,400	EKM250E□□332ML25S		100	12.5×25	0.20	310	EKM201E□□101MK25S
	4,700	16×25	0.22	1,570	EKM250E□□472ML25S		220	16×31.5	0.20	540	EKM201E□□221MLN3S
	6,800	16×35.5	0.26	1,850	EKM250E□□682MLP1S		330	18×35.5	0.20	705	EKM201E□□331MMP1S
	10,000	18×40	0.34	2,000	EKM250E□□103MM40S		470	18×40	0.20	855	EKM201E□□471MM40S
	15,000	22×50	0.44	2,750	EKM250E□□153MP50S	250	1.0	6.3×11	0.20	16	EKM201E□□1R0MF11D
	47	5×11	0.14	93	EKM350E□□470ME11D		2.2	6.3×11	0.20	25	EKM201E□□2R2MF11D
50	68	6.3×11	0.14	110	EKM350E□□680MF11D		3.3	6.3×11	0.20	30	EKM201E□□3R3MF11D
	100	6.3×11	0.14	150	EKM350E□□101MF11D		4.7	6.3×11	0.20	35	EKM201E□□4R7MF11D
	220	8×11.5	0.14	270	EKM350E□□221MHB5D		10	8×11.5	0.20	57	EKM201E□□100MHB5D
	330	10×12.5	0.14	350	EKM350E□□331MJC5S		22	10×16	0.20	105	EKM201E□□220MJ16S
	470	10×16	0.14	460	EKM350E□□471MJ16S		33	10×20	0.20	140	EKM201E□□330MJ20S
	1,000	12.5×20	0.14	810	EKM350E□□102MK20S		47	12.5×20	0.20	195	EKM201E□□470MK20S
	2,200	16×25	0.16	1,260	EKM350E□□222ML25S		68	12.5×25	0.20	250	EKM201E□□680MK25S
	3,300	16×31.5	0.18	1,500	EKM350E□□332MLN3S		100	16×25	0.20	335	EKM201E□□101ML25S
	4,700	16×35.5	0.20	1,780	EKM350E□□472MLP1S	350	220	16×35.5	0.20	500	EKM201E□□221MLP1S
50	6,800	18×40	0.24	2,000	EKM350E□□682MM40S		330	18×40	0.20	675	EKM201E□□331MM40S
	10,000	22×50	0.32	2,650	EKM350E□□103MP50S		3.3	6.3×11	0.20	28	EKM251E□□3R3MF11D
	1.0	5×11	0.12	13	EKM500E□□1R0ME11D		4.7	6.3×11	0.20	35	EKM251E□□4R7MF11D
	2.2	5×11	0.12	20	EKM500E□□2R2ME11D		10	10×12.5	0.20	71	EKM251E□□100MJC5S
	3.3	5×11	0.12	25	EKM500E□□3R3ME11D		22	10×20	0.20	105	EKM251E□□220MJ20S
	4.7	5×11	0.12	30	EKM500E□□4R7ME11D		33	10×20	0.20	140	EKM251E□□330MJ20S
	10	5×11	0.12	46	EKM500E□□100ME11D		47	12.5×20	0.20	190	EKM251E□□470MK20S
	22	5×11	0.12	68	EKM500E□□220ME11D		68	16×25	0.20	270	EKM251E□□680ML25S
	33	5×11	0.12	90	EKM500E□□330ME11D		100	16×25	0.20	310	EKM251E□□101ML25S
50	47	6.3×11	0.12	115	EKM500E□□470MF11D		220	18×35.5	0.20	485	EKM251E□□221MMP1S
	68	6.3×11	0.12	150	EKM500E□□680MF11D		2.2	6.3×11	0.24	21	EKM351E□□2R2MF11D
	100	8×11.5	0.12	190	EKM500E□□101MHB5D		3.3	8×11.5	0.24	30	EKM351E□□3R3MHB5D
	220	10×12.5	0.12	300	EKM500E□□221MJC5S		4.7	8×11.5	0.24	39	EKM351E□□4R7MHB5D

□ : Enter the appropriate lead forming or taping code.

◆STANDARD RATINGS

□ is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tan δ	Rated ripple current (mA _{rms} /105°C, 120Hz)	Part No.
350	10	10×12.5	0.24	64	EKM351E□□100MJC5S	450	2.2	8×11.5	0.24	20	EKM451E□□2R2MHB5D
	22	12.5×20	0.24	130	EKM351E□□220MK20S		3.3	10×12.5	0.24	28	EKM451E□□3R3MJC5S
	33	12.5×25	0.24	170	EKM351E□□330MK25S		4.7	10×12.5	0.24	32	EKM451E□□4R7MJC5S
	47	16×25	0.24	230	EKM351E□□470ML25S		10	10×20	0.24	56	EKM451E□□100MJ20S
	68	16×25	0.24	285	EKM351E□□680ML25S		22	12.5×25	0.24	100	EKM451E□□220MK25S
	100	18×31.5	0.24	375	EKM351E□□101MMN3S		33	16×25	0.24	125	EKM451E□□330ML25S
400	1.0	6.3×11	0.24	15	EKM401E□□1R0MF11D		47	16×31.5	0.24	155	EKM451E□□470MLN3S
	2.2	8×11.5	0.24	27	EKM401E□□2R2MHB5D		68	18×35.5	0.24	185	EKM451E□□680MMP1S
	3.3	8×11.5	0.24	34	EKM401E□□3R3MHB5D		100	18×40	0.24	200	EKM451E□□101MM40S
	4.7	10×12.5	0.24	42	EKM401E□□4R7MJC5S						
	10	10×16	0.24	64	EKM401E□□100MJ16S						
	22	12.5×25	0.24	145	EKM401E□□220MK25S						
	33	16×25	0.24	195	EKM401E□□330ML25S						
	47	16×25	0.24	200	EKM401E□□470ML25S						
	68	16×31.5	0.24	240	EKM401E□□680MLN3S						
	100	18×35.5	0.24	310	EKM401E□□101MMP1S						

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

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(φ5 to φ18)

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

(φ20 to φ22)

Rated Voltage (V _{dc})	Frequency (Hz)	50	120	300	1k	10k	100k
6.3 to 50		0.95	1.00	1.03	1.05	1.08	1.08
63 to 100		0.92	1.00	1.07	1.13	1.19	1.20

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.