

KMQ Series

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

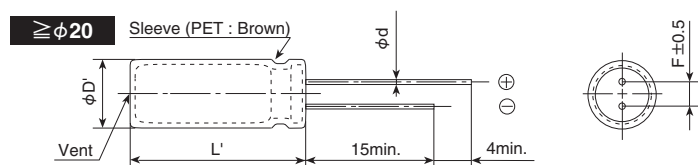
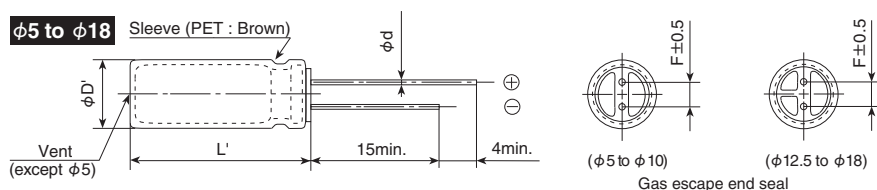


SPECIFICATIONS

Items	Characteristics													
Category Temperature Range	-55 to +105°C(6.3 to 100V _{dc}) -40 to +105°C(160 to 400V _{dc}) -25 to +105°C(450V _{dc})													
Rated Voltage Range	6.3 to 450V _{dc}													
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)													
Leakage Current	6.3 to 100V _{dc}													
	≤φ18	I=0.03CV or 4μA, whichever is greater.											160 to 450V _{dc}	
		(at 20°C after 1 minute)											CV \ Time After 1 minute	
≥φ20	I=0.03CV max.											(at 20°C after 3 minutes)		
Dissipation Factor (tanδ)	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V)													
	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	0.08	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
	Z(-40°C)/Z(+20°C)	≤φ8	10	8	6	4	3	3	3	8	10	8	8	—
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 φ10 and more at 105°C).													
	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°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. (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						

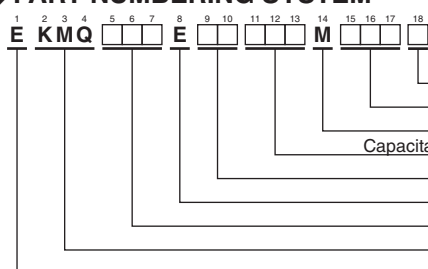
DIMENSIONS [mm]

- 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



Supplement code
 Size code
 Capacitance tolerance code
 Capacitance code (ex. 1.0μF:1R0,10μF:100,100μF:101)
 Lead forming-taping code
 Terminal code
 Voltage code (ex. 6.3V:6R3,35V:350,100V:101)
 Series code
 Category

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 (mArms/105°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mArms/105°C,120Hz)	Part No.		
6.3	1,000	8×11.5	0.28	390	EKMQ6R3E□□102MHB5D	50	330	10×16	0.12	410	EKMQ500E□□331MJ16S		
	2,200	10×16	0.30	635	EKMQ6R3E□□222MJ16S		470	10×20	0.12	540	EKMQ500E□□471MJ20S		
	3,300	10×20	0.32	840	EKMQ6R3E□□332MJ20S		1,000	12.5×25	0.12	950	EKMQ500E□□102MK25S		
	4,700	12.5×20	0.34	1,090	EKMQ6R3E□□472MK20S		2,200	16×31.5	0.14	1,410	EKMQ500E□□222MLN3S		
	6,800	12.5×25	0.38	1,350	EKMQ6R3E□□682MK25S		3,300	18×35.5	0.16	1,770	EKMQ500E□□332MMP1S		
	10,000	16×25	0.46	1,650	EKMQ6R3E□□103ML25S		4,700	20×40	0.18	2,100	EKMQ500E□□472MN40S		
	15,000	16×31.5	0.56	1,820	EKMQ6R3E□□153MLN3S		6,800	22×50	0.22	2,500	EKMQ500E□□682MP50S		
	22,000	18×35.5	0.70	2,280	EKMQ6R3E□□223MMP1S		63	22	5×11	0.10	71	EKMQ630E□□220ME11D	
	33,000	20×40	0.92	2,500	EKMQ6R3E□□333MN40S			33	6.3×11	0.10	100	EKMQ630E□□330MF11D	
47,000	22×50	1.20	2,780	EKMQ6R3E□□473MP50S	47	6.3×11		0.10	120	EKMQ630E□□470MF11D			
10	220	5×11	0.24	155	EKMQ100E□□221MF11D	68		8×11.5	0.10	155	EKMQ630E□□680MHB5D		
	330	6.3×11	0.24	210	EKMQ100E□□331MF11D	100		8×11.5	0.10	200	EKMQ630E□□101MHB5D		
	470	6.3×11	0.24	250	EKMQ100E□□471MF11D	220		10×16	0.10	335	EKMQ630E□□221MJ16S		
	1,000	10×12.5	0.24	460	EKMQ100E□□102MJC5S	330		10×20	0.10	510	EKMQ630E□□331MJ20S		
	2,200	10×16	0.26	705	EKMQ100E□□222MJ16S	470		12.5×20	0.10	640	EKMQ630E□□471MK20S		
	3,300	12.5×20	0.28	1,000	EKMQ100E□□332MK20S	1,000		16×25	0.10	930	EKMQ630E□□102ML25S		
	4,700	12.5×25	0.30	1,260	EKMQ100E□□472MK25S	2,200		18×35.5	0.12	1,650	EKMQ630E□□222MMP1S		
	6,800	16×25	0.34	1,570	EKMQ100E□□682ML25S	3,300		20×40	0.14	1,950	EKMQ630E□□332MN40S		
	10,000	16×31.5	0.42	1,820	EKMQ100E□□103MLN3S	4,700		22×50	0.16	2,450	EKMQ630E□□472MP50S		
	15,000	16×35.5	0.52	2,050	EKMQ100E□□153MLP1S	100		1.0	5×11	0.08	15	EKMQ101E□□1R0ME11D	
	22,000	18×40	0.66	2,420	EKMQ100E□□223MM40S			2.2	5×11	0.08	21	EKMQ101E□□2R2ME11D	
	33,000	22×50	0.88	3,210	EKMQ100E□□333MP50S			3.3	5×11	0.08	29	EKMQ101E□□3R3ME11D	
	16	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		
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		
22,000		22×40	0.62	2,710	EKMQ160E□□223MP40S		1,000	18×35.5	0.08	960	EKMQ101E□□102MMP1S		
25		100	5×11	0.16	125		EKMQ250E□□101ME11D	2,200	22×50	0.10	1,750	EKMQ101E□□222MP50S	
		220	6.3×11	0.16	200	EKMQ250E□□221MF11D	160	10	8×11.5	0.20	41	EKMQ161E□□100MHB5D	
		330	8×11.5	0.16	310	EKMQ250E□□331MHB5D		22	10×12.5	0.20	92	EKMQ161E□□220MJC5S	
		470	10×12.5	0.16	380	EKMQ250E□□471MJC5S		33	10×16	0.20	125	EKMQ161E□□330MJ16S	
	1,000	10×16	0.16	610	EKMQ250E□□102MJ16S	47		10×20	0.20	150	EKMQ161E□□470MJ20S		
	2,200	12.5×25	0.18	1,090	EKMQ250E□□222MK25S	68		12.5×20	0.20	250	EKMQ161E□□680MK20S		
	3,300	16×25	0.20	1,400	EKMQ250E□□332ML25S	100		12.5×25	0.20	310	EKMQ161E□□101MK25S		
	4,700	16×25	0.22	1,570	EKMQ250E□□472ML25S	220		16×31.5	0.20	540	EKMQ161E□□221MLN3S		
	6,800	16×35.5	0.26	1,850	EKMQ250E□□682MLP1S	330		18×35.5	0.20	705	EKMQ161E□□331MMP1S		
	10,000	18×40	0.34	2,000	EKMQ250E□□103MM40S	470		18×40	0.20	855	EKMQ161E□□471MM40S		
	15,000	22×50	0.44	2,750	EKMQ250E□□153MP50S	200		1.0	6.3×11	0.20	16	EKMQ201E□□1R0MF11D	
	35	47	5×11	0.14	93			EKMQ350E□□470ME11D	2.2	6.3×11	0.20	25	EKMQ201E□□2R2MF11D
		68	6.3×11	0.14	110			EKMQ350E□□680MF11D	3.3	6.3×11	0.20	30	EKMQ201E□□3R3MF11D
		100	6.3×11	0.14	150			EKMQ350E□□101MF11D	4.7	6.3×11	0.20	35	EKMQ201E□□4R7MF11D
		220	8×11.5	0.14	270			EKMQ350E□□221MHB5D	10	8×11.5	0.20	57	EKMQ201E□□103MHB5D
330		10×12.5	0.14	350	EKMQ350E□□331MJC5S			22	10×16	0.20	105	EKMQ201E□□220MJ16S	
470		10×16	0.14	460	EKMQ350E□□471MJ16S		33	10×20	0.20	140	EKMQ201E□□330MJ20S		
1,000		12.5×20	0.14	810	EKMQ350E□□102MK20S		47	12.5×20	0.20	195	EKMQ201E□□470MK20S		
2,200		16×25	0.16	1,260	EKMQ350E□□222ML25S		68	12.5×25	0.20	250	EKMQ201E□□680MK25S		
3,300		16×31.5	0.18	1,500	EKMQ350E□□332MLN3S		100	16×25	0.20	335	EKMQ201E□□101ML25S		
4,700		16×35.5	0.20	1,780	EKMQ350E□□472MLP1S		220	16×35.5	0.20	500	EKMQ201E□□221MLP1S		
6,800		18×40	0.24	2,000	EKMQ350E□□682MM40S		330	18×40	0.20	675	EKMQ201E□□331MM40S		
10,000		22×50	0.32	2,650	EKMQ350E□□103MP50S		250	3.3	6.3×11	0.20	28	EKMQ251E□□1R0MF11D	
50		1.0	5×11	0.12	13			EKMQ500E□□1R0ME11D	4.7	6.3×11	0.20	35	EKMQ251E□□4R7MF11D
		2.2	5×11	0.12	20			EKMQ500E□□2R2ME11D	10	10×12.5	0.20	71	EKMQ251E□□100MJC5S
		3.3	5×11	0.12	25	EKMQ500E□□3R3ME11D		22	10×20	0.20	105	EKMQ251E□□220MJ20S	
	4.7	5×11	0.12	30	EKMQ500E□□4R7ME11D	33		10×20	0.20	140	EKMQ251E□□330MJ20S		
	10	5×11	0.12	46	EKMQ500E□□100ME11D	47		12.5×20	0.20	190	EKMQ251E□□470MK20S		
	22	5×11	0.12	68	EKMQ500E□□220ME11D	68		16×25	0.20	270	EKMQ251E□□680ML25S		
	33	5×11	0.12	90	EKMQ500E□□330ME11D	100		16×25	0.20	310	EKMQ251E□□101ML25S		
	47	6.3×11	0.12	115	EKMQ500E□□470MF11D	220		18×35.5	0.20	485	EKMQ251E□□221MMP1S		
	68	6.3×11	0.12	150	EKMQ500E□□680MF11D	350		2.2	6.3×11	0.24	21	EKMQ351E□□2R2MF11D	
	100	8×11.5	0.12	190	EKMQ500E□□101MHB5D			3.3	8×11.5	0.24	30	EKMQ351E□□3R3MHB5D	
	220	10×12.5	0.12	300	EKMQ500E□□221MJC5S			4.7	8×11.5	0.24	39	EKMQ351E□□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	EKMQ351E□□100MJC5S	450	2.2	8×11.5	0.24	20	EKMQ451E□□2R2MHB5D
	22	12.5×20	0.24	130	EKMQ351E□□220MK20S		3.3	10×12.5	0.24	28	EKMQ451E□□3R3MJC5S
	33	12.5×25	0.24	170	EKMQ351E□□330MK25S		4.7	10×12.5	0.24	32	EKMQ451E□□4R7MJC5S
	47	16×25	0.24	230	EKMQ351E□□470ML25S		10	10×20	0.24	56	EKMQ451E□□100MJ20S
	68	16×25	0.24	285	EKMQ351E□□680ML25S		22	12.5×25	0.24	100	EKMQ451E□□220MK25S
	100	18×31.5	0.24	375	EKMQ351E□□101MMN3S		33	16×25	0.24	125	EKMQ451E□□330ML25S
400	1.0	6.3×11	0.24	15	EKMQ401E□□1R0MF11D		47	16×31.5	0.24	155	EKMQ451E□□470MLN3S
	2.2	8×11.5	0.24	27	EKMQ401E□□2R2MHB5D		68	18×35.5	0.24	185	EKMQ451E□□680MMP1S
	3.3	8×11.5	0.24	34	EKMQ401E□□3R3MHB5D		100	18×40	0.24	200	EKMQ451E□□101MM40S
	4.7	10×12.5	0.24	42	EKMQ401E□□4R7MJC5S						
	10	10×16	0.24	64	EKMQ401E□□100MJ16S						
	22	12.5×25	0.24	145	EKMQ401E□□220MK25S						
	33	16×25	0.24	195	EKMQ401E□□330ML25S						
	47	16×25	0.24	200	EKMQ401E□□470ML25S						
	68	16×31.5	0.24	240	EKMQ401E□□680MLN3S						
	100	18×35.5	0.24	310	EKMQ401E□□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.