

KMQ Series

- Downsized from current standard KMG series
- Solvent-proof type except 160 to 450V_{dc}
(see PRECAUTIONS AND GUIDELINES)
- Pb-free design

KMQ

↑ downsized
KMG

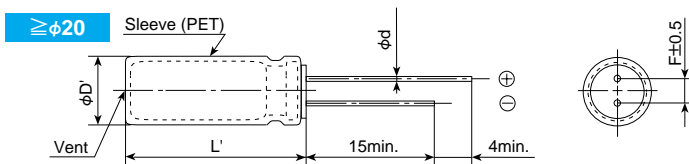
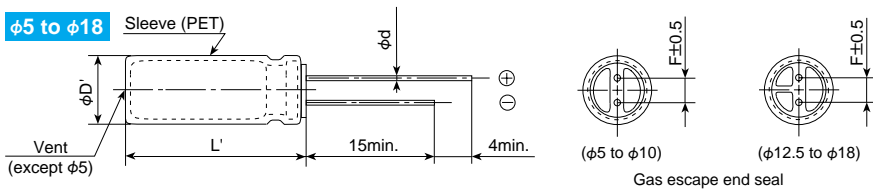


◆ SPECIFICATIONS

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	0.20	0.24	0.24		
When nominal capacitance exceeds 1000µF, add 0.02 to the value above for each 1000µF 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	—	
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 for 1000 hours (2000 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 1000 hours at 105°C without voltage applied.													
	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						

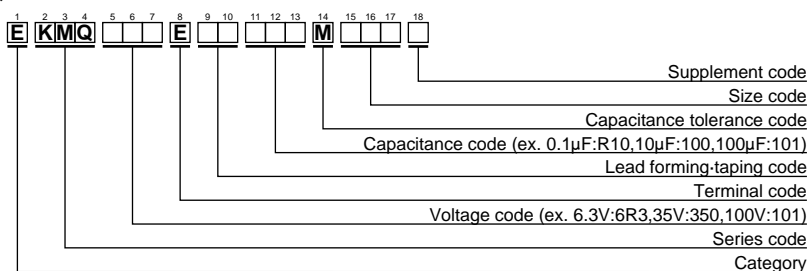
◆ DIMENSIONS [mm]

- 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 "A guide to global code (radial lead type)"

◆STANDARD RATINGS

□ is non solvent-proof.

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	1000	8×11.5	0.28	390	EKMQR3E□□102MHB5D	50	47	6.3×11	0.12	115	EKMQR50E□□470MF11D
	2200	10×16	0.30	635	EKMQR3E□□222MJ16S		68	6.3×11	0.12	150	EKMQR50E□□680MF11D
	3300	10×20	0.32	840	EKMQR3E□□332MJ20S		100	8×11.5	0.12	190	EKMQR50E□□101MHB5D
	4700	12.5×20	0.34	1090	EKMQR3E□□472MK20S		220	10×12.5	0.12	300	EKMQR50E□□221MJC5S
	6800	12.5×25	0.38	1350	EKMQR3E□□682MK25S		330	10×16	0.12	410	EKMQR50E□□331MJ16S
	10000	16×25	0.46	1650	EKMQR3E□□103ML25S		470	10×20	0.12	540	EKMQR50E□□471MJ20S
	15000	16×31.5	0.56	1820	EKMQR3E□□153MLN3S		1000	12.5×25	0.12	950	EKMQR50E□□102MK25S
	22000	18×35.5	0.70	2280	EKMQR3E□□223MMP1S		2200	16×31.5	0.14	1410	EKMQR50E□□222MLN3S
	33000	20×40	0.92	2500	EKMQR3E□□333MN40S		3300	18×35.5	0.16	1770	EKMQR50E□□332MMP1S
	47000	22×50	1.20	2780	EKMQR3E□□473MP50S		4700	20×40	0.18	2100	EKMQR50E□□472MN40S
10	220	5×11	0.24	155	EKMQR100E□□221ME11D	6800	22×50	0.22	2500	EKMQR50E□□682MP50S	
	330	6.3×11	0.24	210	EKMQR100E□□331MF11D	63	22	5×11	0.10	71	EKMQR630E□□220ME11D
	470	6.3×11	0.24	250	EKMQR100E□□471MF11D		33	6.3×11	0.10	100	EKMQR630E□□330MF11D
	1000	10×12.5	0.24	460	EKMQR100E□□102MJC5S		47	6.3×11	0.10	120	EKMQR630E□□470MF11D
	2200	10×16	0.26	705	EKMQR100E□□222MJ16S		68	8×11.5	0.10	155	EKMQR630E□□680MHB5D
	3300	12.5×20	0.28	1000	EKMQR100E□□332MK20S		100	8×11.5	0.10	200	EKMQR630E□□101MHB5D
	4700	12.5×25	0.30	1260	EKMQR100E□□472MK25S		220	10×16	0.10	335	EKMQR630E□□221MJ16S
	6800	16×25	0.34	1570	EKMQR100E□□682ML25S		330	10×20	0.10	510	EKMQR630E□□331MJ20S
	10000	16×31.5	0.42	1820	EKMQR100E□□103MLN3S		470	12.5×20	0.10	640	EKMQR630E□□471MK20S
	15000	16×35.5	0.52	2050	EKMQR100E□□153MLP1S		1000	16×25	0.10	930	EKMQR630E□□102ML25S
22000	18×40	0.66	2420	EKMQR100E□□223MMP40S	2200		18×35.5	0.12	1650	EKMQR630E□□222MMP1S	
16	33000	22×50	0.88	3210	EKMQR100E□□333MP50S	3300	20×40	0.14	1950	EKMQR630E□□332MN40S	
	220	6.3×11	0.20	190	EKMQR160E□□221MF11D	4700	22×50	0.16	2450	EKMQR630E□□472MP50S	
	330	6.3×11	0.20	225	EKMQR160E□□331MF11D	100	0.10	5×11	0.08	1.5	EKMQR101E□□R10ME11D
	470	8×11.5	0.20	315	EKMQR160E□□471MHB5D		0.22	5×11	0.08	3.4	EKMQR101E□□R22ME11D
	1000	10×12.5	0.20	500	EKMQR160E□□102MJC5S		0.33	5×11	0.08	5.0	EKMQR101E□□R33ME11D
	2200	10×20	0.22	710	EKMQR160E□□222MJ20S		0.47	5×11	0.08	7.1	EKMQR101E□□R47ME11D
	3300	12.5×25	0.24	1170	EKMQR160E□□332MK25S		1.0	5×11	0.08	15	EKMQR101E□□R10ME11D
	4700	16×25	0.26	1500	EKMQR160E□□472ML25S		2.2	5×11	0.08	21	EKMQR101E□□R22ME11D
	6800	16×25	0.30	1600	EKMQR160E□□682ML25S		3.3	5×11	0.08	29	EKMQR101E□□R33ME11D
	10000	16×35.5	0.38	1930	EKMQR160E□□103MLP1S		4.7	5×11	0.08	32	EKMQR101E□□R47ME11D
15000	18×40	0.48	2210	EKMQR160E□□153MM40S	10		5×11	0.08	50	EKMQR101E□□R100ME11D	
22000	22×40	0.62	2710	EKMQR160E□□223MMP40S	22		6.3×11	0.08	93	EKMQR101E□□R220MF11D	
25	100	5×11	0.16	125	EKMQR250E□□101ME11D	33	8×11.5	0.08	130	EKMQR101E□□R330MHB5D	
	220	6.3×11	0.16	200	EKMQR250E□□221MF11D	47	8×11.5	0.08	140	EKMQR101E□□R470MHB5D	
	330	8×11.5	0.16	310	EKMQR250E□□331MHB5D	68	10×12.5	0.08	190	EKMQR101E□□R680MJC5S	
	470	10×12.5	0.16	380	EKMQR250E□□471MJC5S	100	10×16	0.08	240	EKMQR101E□□R101MJ16S	
	1000	10×16	0.16	610	EKMQR250E□□102MJ16S	220	12.5×20	0.08	390	EKMQR101E□□R221MK20S	
	2200	12.5×25	0.18	1090	EKMQR250E□□222MK25S	330	12.5×25	0.08	540	EKMQR101E□□R331MK25S	
	3300	16×25	0.20	1400	EKMQR250E□□332ML25S	470	16×25	0.08	715	EKMQR101E□□R471ML25S	
	4700	16×25	0.22	1570	EKMQR250E□□472ML25S	1000	18×35.5	0.08	960	EKMQR101E□□R102MMP1S	
	6800	16×35.5	0.26	1850	EKMQR250E□□682MLP1S	2200	22×50	0.10	1750	EKMQR101E□□R222MP50S	
	10000	18×40	0.34	2000	EKMQR250E□□103MM40S	160	10	8×11.5	0.20	41	EKMQR161E□□R100MHB5D
15000	22×50	0.44	2750	EKMQR250E□□153MP50S	22		10×12.5	0.20	92	EKMQR161E□□R220MJC5S	
47	5×11	0.14	93	EKMQR350E□□470ME11D	33		10×16	0.20	125	EKMQR161E□□R330MJ16S	
68	6.3×11	0.14	110	EKMQR350E□□680MF11D	47		10×20	0.20	150	EKMQR161E□□R470MJ20S	
100	6.3×11	0.14	150	EKMQR350E□□101MF11D	68		12.5×20	0.20	250	EKMQR161E□□R680MK20S	
220	8×11.5	0.14	270	EKMQR350E□□221MHB5D	100		12.5×25	0.20	310	EKMQR161E□□R101MK25S	
330	10×12.5	0.14	350	EKMQR350E□□331MJC5S	220		16×31.5	0.20	540	EKMQR161E□□R221MLN3S	
470	10×16	0.14	460	EKMQR350E□□471MJ16S	330		18×35.5	0.20	705	EKMQR161E□□R331MMP1S	
1000	12.5×20	0.14	810	EKMQR350E□□102MK20S	470		18×40	0.20	855	EKMQR161E□□R471MM40S	
2200	16×25	0.16	1260	EKMQR350E□□222ML25S	200		1.0	6.3×11	0.20	16	EKMQR201E□□R10R0MF11D
3300	16×31.5	0.18	1500	EKMQR350E□□332MLN3S		2.2	6.3×11	0.20	25	EKMQR201E□□R22R2MF11D	
4700	16×35.5	0.20	1780	EKMQR350E□□472MLP1S		3.3	6.3×11	0.20	30	EKMQR201E□□R33R3MF11D	
6800	18×40	0.24	2000	EKMQR350E□□682MM40S		4.7	6.3×11	0.20	35	EKMQR201E□□R47R7MF11D	
10000	22×50	0.32	2650	EKMQR350E□□103MP50S		10	8×11.5	0.20	57	EKMQR201E□□R100MHB5D	
50	0.10	5×11	0.12	1.3		EKMQR500E□□R10ME11D	22	10×16	0.20	105	EKMQR201E□□R220MJ16S
	0.22	5×11	0.12	2.9		EKMQR500E□□R22ME11D	33	10×20	0.20	140	EKMQR201E□□R330MJ20S
	0.33	5×11	0.12	4.3		EKMQR500E□□R33ME11D	47	12.5×20	0.20	195	EKMQR201E□□R470MK20S
	0.47	5×11	0.12	7.0		EKMQR500E□□R47ME11D	68	12.5×25	0.20	250	EKMQR201E□□R680MK25S
	1.0	5×11	0.12	13		EKMQR500E□□R10R0ME11D	100	16×25	0.20	335	EKMQR201E□□R101ML25S
	2.2	5×11	0.12	20	EKMQR500E□□R22R2ME11D	220	16×35.5	0.20	500	EKMQR201E□□R221MLP1S	
	3.3	5×11	0.12	25	EKMQR500E□□R33R3ME11D	330	18×40	0.20	675	EKMQR201E□□R331MM40S	
	4.7	5×11	0.12	30	EKMQR500E□□R47R7ME11D	250	3.3	6.3×11	0.20	28	EKMQR251E□□R3R3MF11D
	10	5×11	0.12	46	EKMQR500E□□R100ME11D		4.7	6.3×11	0.20	35	EKMQR251E□□R47R7MF11D
	22	5×11	0.12	68	EKMQR500E□□R220ME11D		10	10×12.5	0.20	71	EKMQR251E□□R100MJC5S
33	5×11	0.12	90	EKMQR500E□□R330ME11D	22		10×20	0.20	105	EKMQR251E□□R220MJ20S	

□ : Lead forming / Taping code

◆STANDARD RATINGS

□ is non solvent-proof.

WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mAmps/105°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φD×L(mm)	tanδ	Rated ripple current (mAmps/105°C,120Hz)	Part No.	
250	33	10×20	0.20	140	EKMQ251E□□330MJ20S	400	3.3	8×11.5	0.24	34	EKMQ401E□□3R3MHB5D	
	47	12.5×20	0.20	190	EKMQ251E□□470MK20S		4.7	10×12.5	0.24	42	EKMQ401E□□4R7MJC5S	
	68	16×25	0.20	270	EKMQ251E□□680ML25S		10	10×16	0.24	64	EKMQ401E□□100MJ16S	
	100	16×25	0.20	310	EKMQ251E□□101ML25S		22	12.5×25	0.24	145	EKMQ401E□□220MK25S	
	220	18×35.5	0.20	485	EKMQ251E□□221MMP1S		33	16×25	0.24	195	EKMQ401E□□330ML25S	
350	2.2	6.3×11	0.24	21	EKMQ351E□□2R2MF11D		47	16×25	0.24	200	EKMQ401E□□470ML25S	
	3.3	8×11.5	0.24	30	EKMQ351E□□3R3MHB5D		68	16×31.5	0.24	240	EKMQ401E□□680MLN3S	
	4.7	8×11.5	0.24	39	EKMQ351E□□4R7MHB5D		100	18×35.5	0.24	310	EKMQ401E□□101MMP1S	
	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	0.47	6.3×11	0.24	8.5	EKMQ401E□□R47MF11D	47		16×31.5	0.24	155	EKMQ451E□□470MLN3S	
	1.0	6.3×11	0.24	15	EKMQ401E□□1R0MF11D	68		18×35.5	0.24	185	EKMQ451E□□680MMP1S	
	2.2	8×11.5	0.24	27	EKMQ401E□□2R2MHB5D	100	18×40	0.24	200	EKMQ451E□□101MM40S		

□ : Lead forming / Taping code

◆RATED RIPPLE CURRENT MULTIPLIERS

●Frequency Multipliers

(φ5 to φ18)

Capacitance (μF)	Frequency (Hz)					
	50	120	300	1k	10k	100k
0.1 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 (Vdc)	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