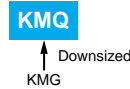


KMQ Series

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

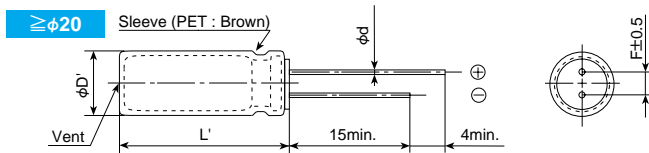
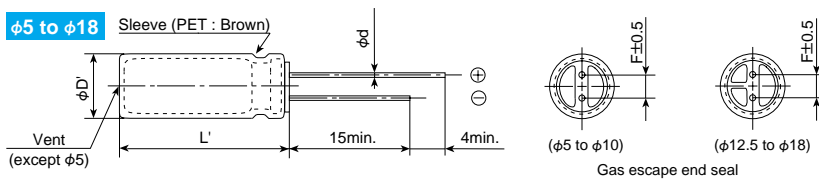


◆ SPECIFICATIONS

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}	160 to 450V _{dc}
	≤φ18	I=0.03CV or 4µA, whichever is greater. CV \ Time After 1 minute CV ≤ 1,000 I=0.1CV+40 max. CV > 1,000 I=0.04CV+100 max. (at 20°C after 1 minute) (at 20°C)
	≥φ20	I=0.03CV max. (at 20°C 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°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 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
	D.F. (tanδ)	≤200% of the initial specified value
	Leakage current	≤500% of the initial specified value

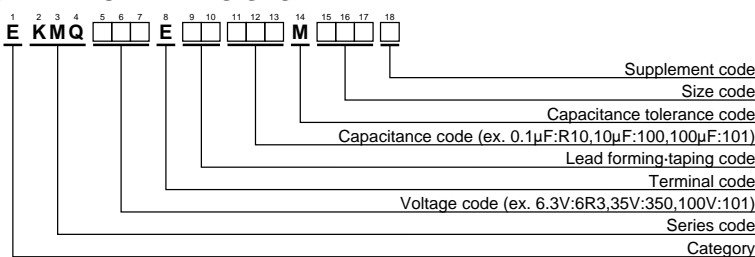
◆ DIMENSIONS [mm]

- 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 φDXL(mm)	tanδ	Rated ripple current (mAmps/105°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Rated ripple current (mAmps/105°C,120Hz)	Part No.
6.3	1,000	8X11.5	0.28	390	EKMQ6R3E□□102MHB5D	50	47	6.3X11	0.12	115	EKMQ500E□□470MF11D
	2,200	10X16	0.30	635	EKMQ6R3E□□222MJ16S		68	6.3X11	0.12	150	EKMQ500E□□680MF11D
	3,300	10X20	0.32	840	EKMQ6R3E□□332MJ20S		100	8X11.5	0.12	190	EKMQ500E□□101MHB5D
	4,700	12.5X20	0.34	1,090	EKMQ6R3E□□472MK20S		220	10X12.5	0.12	300	EKMQ500E□□221MJCS5S
	6,800	12.5X25	0.38	1,350	EKMQ6R3E□□682MK25S		330	10X16	0.12	410	EKMQ500E□□331MJ16S
	10,000	16X25	0.46	1,650	EKMQ6R3E□□103ML25S		470	10X20	0.12	540	EKMQ500E□□471MJ20S
	15,000	16X31.5	0.56	1,820	EKMQ6R3E□□153MLN3S		1,000	12.5X25	0.12	950	EKMQ500E□□102MK25S
	22,000	18X35.5	0.70	2,280	EKMQ6R3E□□223MMP1S		2,200	16X31.5	0.14	1,410	EKMQ500E□□222MLN3S
	33,000	20X40	0.92	2,500	EKMQ6R3E□□333MMN40S		3,300	18X35.5	0.16	1,770	EKMQ500E□□332MMP1S
	47,000	22X50	1.20	2,780	EKMQ6R3E□□473MP50S		4,700	20X40	0.18	2,100	EKMQ500E□□472MN40S
10	220	5X11	0.24	155	EKMQ100E□□221ME11D	63	6,800	22X50	0.22	2,500	EKMQ500E□□682MP50S
	330	6.3X11	0.24	210	EKMQ100E□□331MF11D		22	5X11	0.10	71	EKMQ630E□□220ME11D
	470	6.3X11	0.24	250	EKMQ100E□□471MF11D		33	6.3X11	0.10	100	EKMQ630E□□330MF11D
	1,000	10X12.5	0.24	460	EKMQ100E□□102MJC5S		47	6.3X11	0.10	120	EKMQ630E□□470MF11D
	2,200	10X16	0.26	705	EKMQ100E□□222MJ16S		68	8X11.5	0.10	155	EKMQ630E□□680MHB5D
	3,300	12.5X20	0.28	1,000	EKMQ100E□□332MK20S		100	8X11.5	0.10	200	EKMQ630E□□101MHB5D
	4,700	12.5X25	0.30	1,260	EKMQ100E□□472MK25S		220	10X16	0.10	335	EKMQ630E□□221MJ16S
	6,800	16X25	0.34	1,570	EKMQ100E□□682ML25S		330	10X20	0.10	510	EKMQ630E□□331MJ20S
	10,000	16X31.5	0.42	1,820	EKMQ100E□□103MLN3S		470	12.5X20	0.10	640	EKMQ630E□□471MK20S
	15,000	16X35.5	0.52	2,050	EKMQ100E□□153MLP1S		1,000	16X25	0.10	930	EKMQ630E□□102ML25S
	22,000	18X40	0.66	2,420	EKMQ100E□□223MM40S		2,200	18X35.5	0.12	1,650	EKMQ630E□□222MMP1S
	33,000	22X50	0.88	3,210	EKMQ100E□□333MP50S		3,300	20X40	0.14	1,950	EKMQ630E□□332MN40S
	16	220	6.3X11	0.20	190		EKMQ160E□□221MF11D	4,700	22X50	0.16	2,450
330		6.3X11	0.20	225	EKMQ160E□□331MF11D	0.10	5X11	0.08	1.5	EKMQ101E□□R10ME11D	
470		8X11.5	0.20	315	EKMQ160E□□471MHB5D	0.22	5X11	0.08	3.4	EKMQ101E□□R22ME11D	
1,000		10X12.5	0.20	500	EKMQ160E□□102MJC5S	0.33	5X11	0.08	5.0	EKMQ101E□□R33ME11D	
2,200		10X20	0.22	710	EKMQ160E□□222MJ20S	0.47	5X11	0.08	7.1	EKMQ101E□□R47ME11D	
3,300		12.5X25	0.24	1,170	EKMQ160E□□332MK25S	1.0	5X11	0.08	15	EKMQ101E□□1R0ME11D	
4,700		16X25	0.26	1,500	EKMQ160E□□472ML25S	2.2	5X11	0.08	21	EKMQ101E□□2R2ME11D	
6,800		16X25	0.30	1,600	EKMQ160E□□682ML25S	3.3	5X11	0.08	29	EKMQ101E□□3R3ME11D	
10,000		16X35.5	0.38	1,930	EKMQ160E□□103MLP1S	4.7	5X11	0.08	32	EKMQ101E□□4R7ME11D	
15,000		18X40	0.48	2,210	EKMQ160E□□153MM40S	10	5X11	0.08	50	EKMQ101E□□100ME11D	
22,000		22X40	0.62	2,710	EKMQ160E□□223MP40S	22	6.3X11	0.08	93	EKMQ101E□□220MF11D	
25		100	5X11	0.16	125	EKMQ250E□□101ME11D	33	8X11.5	0.08	130	EKMQ101E□□330MHB5D
		220	6.3X11	0.16	200	EKMQ250E□□221MF11D	47	8X11.5	0.08	140	EKMQ101E□□470MHB5D
	330	8X11.5	0.16	310	EKMQ250E□□331MHB5D	68	10X12.5	0.08	190	EKMQ101E□□680MJC5S	
	470	10X12.5	0.16	380	EKMQ250E□□471MJC5S	100	10X16	0.08	240	EKMQ101E□□101MJ16S	
	1,000	10X16	0.16	610	EKMQ250E□□102MJ16S	220	12.5X20	0.08	390	EKMQ101E□□221MK20S	
	2,200	12.5X25	0.18	1,090	EKMQ250E□□222MK25S	330	12.5X25	0.08	540	EKMQ101E□□331MK25S	
	3,300	16X25	0.20	1,400	EKMQ250E□□332ML25S	470	16X25	0.08	715	EKMQ101E□□471ML25S	
	4,700	16X25	0.22	1,570	EKMQ250E□□472ML25S	1,000	18X35.5	0.08	960	EKMQ101E□□102MMP1S	
	6,800	16X35.5	0.26	1,850	EKMQ250E□□682MLP1S	2,200	22X50	0.10	1,750	EKMQ101E□□222MP50S	
	10,000	18X40	0.34	2,000	EKMQ250E□□103MM40S	10	8X11.5	0.20	41	EKMQ161E□□100MHB5D	
	15,000	22X40	0.44	2,750	EKMQ250E□□153MP50S	22	10X12.5	0.20	92	EKMQ161E□□220MJC5S	
	35	47	5X11	0.14	93	EKMQ350E□□470ME11D	33	10X16	0.20	125	EKMQ161E□□330MJ16S
		68	6.3X11	0.14	110	EKMQ350E□□680MF11D	47	10X20	0.20	150	EKMQ161E□□470MJ20S
100		6.3X11	0.14	150	EKMQ350E□□101MF11D	68	12.5X20	0.20	250	EKMQ161E□□680MK20S	
220		8X11.5	0.14	270	EKMQ350E□□221MHB5D	100	12.5X25	0.20	310	EKMQ161E□□101MK25S	
330		10X12.5	0.14	350	EKMQ350E□□331MJC5S	220	16X31.5	0.20	540	EKMQ161E□□221MLN3S	
470		10X16	0.14	460	EKMQ350E□□471MJ16S	330	18X35.5	0.20	705	EKMQ161E□□331MMP1S	
1,000		12.5X20	0.14	810	EKMQ350E□□102MK20S	470	18X40	0.20	855	EKMQ161E□□471MM40S	
2,200		16X25	0.16	1,260	EKMQ350E□□222ML25S	1.0	6.3X11	0.20	16	EKMQ201E□□1R0MF11D	
3,300		16X31.5	0.18	1,500	EKMQ350E□□332MLN3S	2.2	6.3X11	0.20	25	EKMQ201E□□2R2MF11D	
4,700		16X35.5	0.20	1,780	EKMQ350E□□472MLP1S	3.3	6.3X11	0.20	30	EKMQ201E□□3R3MF11D	
6,800		18X40	0.24	2,000	EKMQ350E□□682MM40S	4.7	6.3X11	0.20	35	EKMQ201E□□4R7MF11D	
10,000		22X50	0.32	2,650	EKMQ350E□□103MP50S	10	8X11.5	0.20	57	EKMQ201E□□100MHB5D	
50		0.10	5X11	0.12	1.3	EKMQ500E□□R10ME11D	22	10X16	0.20	105	EKMQ201E□□220MJ16S
	0.22	5X11	0.12	2.9	EKMQ500E□□R22ME11D	33	10X20	0.20	140	EKMQ201E□□330MJ20S	
	0.33	5X11	0.12	4.3	EKMQ500E□□R33ME11D	47	12.5X20	0.20	195	EKMQ201E□□470MK20S	
	0.47	5X11	0.12	7.0	EKMQ500E□□R47ME11D	68	12.5X25	0.20	250	EKMQ201E□□680MK25S	
	1.0	5X11	0.12	13	EKMQ500E□□1R0ME11D	100	16X25	0.20	335	EKMQ201E□□101ML25S	
	2.2	5X11	0.12	20	EKMQ500E□□2R2ME11D	220	16X35.5	0.20	500	EKMQ201E□□221MLP1S	
	3.3	5X11	0.12	25	EKMQ500E□□3R3ME11D	330	18X40	0.20	675	EKMQ201E□□331MM40S	
	4.7	5X11	0.12	30	EKMQ500E□□4R7ME11D	3.3	6.3X11	0.20	28	EKMQ251E□□3R3MF11D	
	10	5X11	0.12	46	EKMQ500E□□100ME11D	4.7	6.3X11	0.20	35	EKMQ251E□□4R7MF11D	
	22	5X11	0.12	68	EKMQ500E□□220ME11D	10	10X12.5	0.20	71	EKMQ251E□□100MJC5S	
	33	5X11	0.12	90	EKMQ500E□□330ME11D	22	10X20	0.20	105	EKMQ251E□□220MJ20S	

□ : Enter the appropriate lead forming or taping code.

◆STANDARD RATINGS

□□ is not solvent resistant.

WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Rated ripple current (mA _{rms} /105°C,120Hz)	Part No.	WV (Vdc)	Cap (μF)	Case size φDXL(mm)	tanδ	Rated ripple current (mA _{rms} /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	450	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		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	

□□ : 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
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 (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.