

**KMF** Series

- Endurance with ripple current: 105°C 2000 to 5000 hours
- Solvent-proof (6.3 to 100V<sub>dc</sub>) (see PRECAUTIONS AND GUIDELINES)



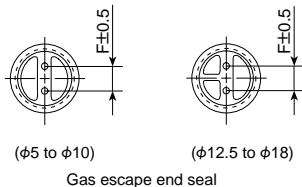
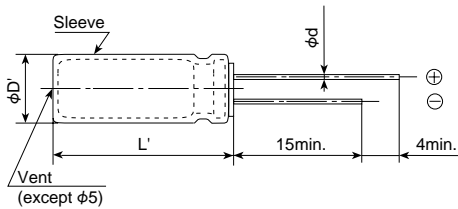
↑ lower Z  
longer life  
KME



◆SPECIFICATIONS

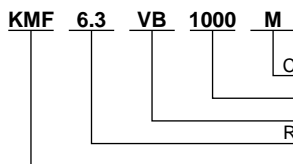
Items	Characteristics	
Category	-55 to +105°C(6.3 to 100V <sub>dc</sub> ) -40 to +105°C(160 to 400V <sub>dc</sub> ) -25 to +105°C(450V <sub>dc</sub> )	
Temperature Range		
Rated Voltage Range	6.3 to 450V <sub>dc</sub>	
Capacitance Tolerance	±20% (M) (at 20°C, 120Hz)	
Leakage Current	6.3 to 100V <sub>dc</sub>	
	I=0.03CV or 4μA, whichever is greater. (at 20°C after 1 minute)	160 to 450V <sub>dc</sub>
	I=0.01CV or 3μA, whichever is greater. (at 20°C after 2 minutes)	
Dissipation Factor (tanδ)	Where, I : Max. leakage current (μA), C : Nominal capacitance (μF), V : Rated voltage (V) (at 20°C)	
	Rated voltage (V <sub>dc</sub> )	6.3V 10V 16V 25V 35V 50V 63V 100V 160 to 250V 400V 450V
	tanδ (Max.)	0.22 0.19 0.16 0.14 0.12 0.10 0.09 0.08 0.20 0.24 0.24
Low Temperature Characteristics (Max. Impedance Ratio)	When nominal capacitance exceeds 1000μF, add 0.02 to the value above for each 1000μF increase. (at 20°C, 120Hz)	
	Rated voltage (V <sub>dc</sub> )	6.3V 10V 16V 25V 35V 50V 63V 100V 160 to 250V 400V 450V
	Z(-25°C)/Z(+20°C)	4 3 2 2 2 2 2 2 3 5 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 the specified period of time at 105°C.	
	Time for 6.3 to 100V <sub>dc</sub>	φ5 & 6.3 : 2000 hours φ8 & 10 : 3000 hours φ12.5 and larger : 5000 hours
	Time for 160 to 450V <sub>dc</sub>	2000 hours
	Capacitance change	≤±20% of the initial value
	D.F. (tanδ)	≤200% of 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 <sub>dc</sub> 160 to 450V <sub>dc</sub>
	Capacitance change	≤±20% of the initial value
	D.F. (tanδ)	≤200% of the initial specified value
	Leakage current	≤The initial specified value

◆DIMENSIONS (Radial Lead Type=VB) [mm]



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



Capacitance	Code
0.47μF	R47
4.7μF	4R7
10μF	10
100μF	100
470μF	470

◆RATED RIPPLE CURRENT MULTIPLIERS

- Frequency Multipliers

Rated Voltage(V <sub>dc</sub> )	Case code	Frequency(Hz)			
		120	1k	10k	100k
6.3 10	φ5 (to 47μF)	0.40	0.75	0.93	1.00
	φ5 (100μF), φ6.3, φ8	0.70	0.86	0.96	1.00
	φ10 to φ18	0.85	0.95	0.98	1.00
16 to 35	φ5 (to 22μF)	0.30	0.68	0.91	1.00
	φ5 (33μF to), φ6.3, φ8	0.50	0.80	0.94	1.00
	φ10 to φ18	0.70	0.88	0.97	1.00
50 63	φ5 (to 3.3μF)	0.20	0.66	0.90	1.00
	φ5 (4.7μF to), φ6.3, φ8	0.40	0.76	0.93	1.00
	φ10 to φ18	0.60	0.84	0.96	1.00
100	φ5 (to 1μF)	0.20	0.60	0.88	1.00
	φ5 (2.2μF to), φ6.3, φ8	0.30	0.65	0.90	1.00
	φ10 to φ18	0.40	0.75	0.93	1.00
160 to 450	φ10	0.25	0.61	0.88	1.00
	φ12.5 to φ18	0.35	0.66	0.89	1.00



◆STANDARD RATINGS

Cap (μF) Items	V <sub>dc</sub>	6.3			10			16			25						
		Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple				
4.7											5×11	3.0	9.0	100			
10								5×11	2.0	6.0	124	5×11	2.0	6.0	124		
22					5×11	1.3	3.9	154	5×11	1.3	3.9	154	5×11	1.3	3.9	154	
33		5×11	1.3	3.9	154	5×11	1.3	3.9	154	5×11	1.3	3.9	154	5×11	1.3	3.9	154
47		5×11	1.3	3.9	154	5×11	1.3	3.9	154	5×11	1.3	3.9	154	5×11	1.3	3.9	154
100		5×11	1.3	3.9	154	5×11	1.3	3.9	154	6.3×11	0.60	1.8	260	6.3×11	0.60	1.8	260
220		6.3×11	0.60	1.8	260	6.3×11	0.60	1.8	260	8×11.5	0.33	0.99	400	8×11.5	0.33	0.99	400
330		6.3×11	0.60	1.8	260	8×11.5	0.33	0.99	400	8×11.5	0.33	0.99	400	10×12.5	0.25	0.75	510
470		8×11.5	0.33	0.99	400	8×11.5	0.33	0.99	400	10×12.5	0.25	0.75	510	10×16	0.19	0.57	635
1,000		10×12.5	0.25	0.75	510	10×16	0.19	0.57	635	10×20	0.14	0.42	860	12.5×20	0.085	0.26	1,120
2,200		12.5×20	0.085	0.26	1,120	12.5×20	0.085	0.26	1,120	12.5×25	0.070	0.21	1,320	16×25	0.060	0.18	1,570
3,300		12.5×20	0.085	0.26	1,120	12.5×25	0.070	0.21	1,320	16×25	0.060	0.18	1,570	16×31.5	0.048	0.14	1,810
4,700		16×25	0.060	0.18	1,570	16×25	0.060	0.18	1,570	16×31.5	0.048	0.14	1,810	18×35.5	0.037	0.11	2,240
6,800		16×25	0.060	0.18	1,570	16×31.5	0.048	0.14	1,810	18×35.5	0.037	0.11	2,240	18×40	0.034	0.10	2,460
10,000		16×31.5	0.048	0.14	1,810	18×35.5	0.037	0.11	2,240	18×40	0.034	0.10	2,460				
15,000		18×35.5	0.037	0.11	2,240												

Cap (μF) Items	V <sub>dc</sub>	35			50			63			100						
		Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple				
0.47					5×11	7.0	21.0	66				5×11	10.0	35.0	55		
1.0					5×11	5.0	15.0	78				5×11	7.0	25.0	66		
2.2					5×11	4.0	12.0	88				5×11	6.0	21.0	72		
3.3					5×11	3.5	11.0	94				5×11	5.0	18.0	78		
4.7		5×11	3.0	9.0	100	5×11	3.0	9.0	100	5×11	4.0	14.0	88	5×11	4.0	14.0	88
10		5×11	2.0	6.0	124	5×11	2.0	6.0	124	5×11	2.5	8.8	124	6.3×11	1.2	4.2	180
22		5×11	1.3	3.9	154	5×11	1.3	3.9	154	6.3×11	1.2	4.2	180	8×11.5	0.66	2.3	282
33		5×11	1.3	3.9	154	6.3×11	0.60	1.8	260	6.3×11	1.2	4.2	180	10×12.5	0.50	1.8	380
47		6.3×11	0.60	1.8	260	6.3×11	0.60	1.8	260	8×11.5	0.56	2.0	305	10×16	0.32	1.1	500
100		8×11.5	0.33	0.99	400	8×11.5	0.33	0.99	400	10×12.5	0.50	1.8	380	12.5×20	0.16	0.56	890
220		10×12.5	0.25	0.75	510	10×16	0.19	0.57	635	10×20	0.27	0.95	620	16×25	0.090	0.32	1,440
330		10×16	0.19	0.57	635	10×20	0.14	0.42	860	12.5×20	0.16	0.56	890	16×25	0.090	0.32	1,440
470		10×20	0.14	0.42	860	12.5×20	0.085	0.26	1,120	12.5×25	0.14	0.49	1,040	16×31.5	0.060	0.21	1,790
1,000		12.5×25	0.070	0.21	1,320	16×25	0.060	0.18	1,570	16×31.5	0.060	0.21	1,790				
2,200		16×31.5	0.048	0.14	1,810	18×35.5	0.037	0.11	2,240								
3,300		18×35.5	0.037	0.11	2,240												
4,700		18×40	0.034	0.10	2,460												
6,800																	

(mArms/105°C, 100kHz)  
 (Ω<sub>max</sub>/-10°C, 100kHz)  
 (Ω<sub>max</sub>/20°C, 100kHz)  
 φD×L (mm)

Non solvent-proof										
Cap (μF) Items	V <sub>dc</sub>	160			200			250		
		Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple
4.7								10×16	3.5	165
10		10×16	1.5	250	10×16	1.5	250	10×20	2.8	230
22		10×20	1.1	350	10×20	1.1	350	12.5×25	1.2	360
33		12.5×20	0.71	440	12.5×20	0.71	440	12.5×25	1.2	360
47		12.5×25	0.46	600	12.5×25	0.46	600	16×25	0.60	570
100		16×25	0.24	910	16×31.5	0.17	1,160	18×35.5	0.30	935
220		18×35.5	0.14	1,370	18×35.5	0.14	1,370	18×40	0.27	1,000

Non solvent-proof							
Cap (μF) Items	V <sub>dc</sub>	400			450		
		Case size	Impedance	Rated ripple	Case size	Impedance	Rated ripple
2.2					10×16	7.9	110
3.3		10×20	2.9	195	10×20	6.2	135
4.7		10×25	2.3	220	12.5×20	3.7	190
10		12.5×25	1.2	360	12.5×25	2.6	250
22		16×25	0.61	570	16×31.5	1.0	480
33		16×31.5	0.46	700	18×35.5	0.62	650
47		18×31.5	0.33	860			

(mArms/105°C, 100kHz)  
 (Ω<sub>max</sub>/20°C, 100kHz)  
 φD×L (mm)