

**KMG Series**

● 105°C 1,000~2,000Hrs assured.

- General
- RoHS compliant.
- Halogen-free capacitors are also available.

Solvent-proof

WV ≤ 100V<sub>DC</sub>

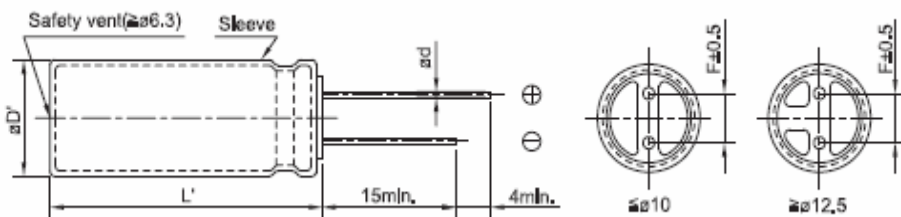


**SPECCIFICATIONS**

Item	Characteristics																																														
Rated Voltage Range	6.3 ~ 100 V <sub>DC</sub>	160 ~ 400 V <sub>DC</sub>	450 V <sub>DC</sub>																																												
Operating Temperature Range	-55 ~ +105 °C	-40 ~ +105 °C	-25 ~ +105 °C																																												
Capacitance Tolerance	±20% (M) (at 20 °C, 120Hz)																																														
Leakage Current	After 1 minute : I = 0.03CV or 4 μA, whichever is greater.	<table border="1"> <tr> <th>Time</th> <th>After 1 minute</th> <th>After 5 minute</th> </tr> <tr> <td>C-V</td> <td></td> <td></td> </tr> <tr> <td>≤ 1000</td> <td>I = 0.1CV + 40</td> <td>I = 0.03CV + 15</td> </tr> <tr> <td>&gt; 1000</td> <td>I = 0.04CV + 100</td> <td>I = 0.02CV + 25</td> </tr> </table>		Time	After 1 minute	After 5 minute	C-V			≤ 1000	I = 0.1CV + 40	I = 0.03CV + 15	> 1000	I = 0.04CV + 100	I = 0.02CV + 25																																
	Time			After 1 minute	After 5 minute																																										
C-V																																															
≤ 1000	I = 0.1CV + 40	I = 0.03CV + 15																																													
> 1000	I = 0.04CV + 100	I = 0.02CV + 25																																													
	After 2 minute : I = 0.01CV or 3 μA, whichever is greater.																																														
Where, I : Max. Leakage current(μA) C : Nominal capacitance(μF) V : Rated voltage(V <sub>DC</sub> ) (at 20 °C)																																															
Dissipation Factor ( tan δ )	<table border="1"> <tr> <th>Rated Voltage(V<sub>DC</sub>)</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63</td> <td>100</td> <td>160~250</td> <td>350~450</td> </tr> <tr> <th>Tanδ(Max.)</th> <td>0.34</td> <td>0.24</td> <td>0.2</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.20</td> <td>0.24</td> </tr> </table>											Rated Voltage(V <sub>DC</sub> )	6.3	10	16	25	35	50	63	100	160~250	350~450	Tanδ(Max.)	0.34	0.24	0.2	0.16	0.14	0.12	0.10	0.09	0.20	0.24														
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	(at 20 °C, 120Hz)																																														
Temperature Characteristics (Capacitance change ratio)	<table border="1"> <tr> <th>Rated Voltage(V<sub>DC</sub>)</th> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63~100</td> <td>160</td> <td>200~250</td> <td>350~400</td> <td>450</td> </tr> <tr> <th>Z(-25°C) / Z(+20°C)</th> <td>5</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>3</td> <td>3</td> <td>3</td> <td>6</td> <td>6</td> </tr> <tr> <th>Z(-40°C) / Z(+20°C)</th> <td>12</td> <td>10</td> <td>8</td> <td>5</td> <td>4</td> <td>3</td> <td>4</td> <td>4</td> <td>5</td> <td>6</td> <td>-</td> </tr> </table>											Rated Voltage(V <sub>DC</sub> )	6.3	10	16	25	35	50	63~100	160	200~250	350~400	450	Z(-25°C) / Z(+20°C)	5	4	3	2	2	2	3	3	3	6	6	Z(-40°C) / Z(+20°C)	12	10	8	5	4	3	4	4	5	6	-
	Rated Voltage(V <sub>DC</sub> )	6.3	10	16	25	35	50	63~100	160	200~250	350~400	450																																			
Z(-25°C) / Z(+20°C)	5	4	3	2	2	2	3	3	3	6	6																																				
Z(-40°C) / Z(+20°C)	12	10	8	5	4	3	4	4	5	6	-																																				
	(at 120Hz)																																														
Load Life	<p>The following specifications shall be satisfied when the capacitors are restored to 20 °C after the rated voltage is applied for 2,000 hours at 105 °C. (Where, 1,000 hours ≤ Φ8)</p> <p>Capacitance change ≤ ±20 % of the initial value                      tan δ ≤ 200 % of the initial specified value                      Leakage current ≤ The initial specified value</p>																																														
Shelf Life	<p>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. The rated voltage shall be applied to the capacitors for a minimum of 30 minutes, at least 24 hours and not more than 48 hours before the measurements. (Where, 500 hours ≤ Φ8)</p> <p>Capacitance change ≤ ±20 % of the initial value                      tan δ ≤ 200 % of the initial specified value                      Leakage current ≤ The initial specified value (Where, 200% for ≥ WV 160V<sub>DC</sub>)</p>																																														
Others	Satisfied characteristics KS C IEC 60384-4																																														

\* Please refer each approval sheet for detail specification.

**DIMENSIONS OF KMG Series**



Unit (mm)

Marking : BROWN SLEEVE , WHITE INK

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.			L + 2.0max.			



**RATINGS OF KMG Series**

$\mu F$ \ $V_{DC}$	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
0.1						5x11 2.1	5x11 3.2	5x11 3.6						
0.22						5x11 3.2	5x11 4.3	5x11 4.8						
0.33						5x11 6.3	5x11 7.2	5x11 7.8						
0.47						5x11 10	5x11 11	5x11 12	6.3x11 12	6.3x11 12	6.3x11 12	6.3x11 12		
0.68						5x11 12	5x11 13	5x11 14	6.3x11 14	6.3x11 15	6.3x11 15	6.3x11 15		
1						5x11 13	5x11 15	5x11 16	6.3x11 16	6.3x11 17	6.3x11 17	6.3x11 18	6.3x11 19	8x11.5 16
2.2						5x11 18	5x11 19	5x11 21	6.3x11 22	6.3x11 24	6.3x11 27	8x11.5 29	8x11.5 30	10x12.5 28
3.3						5x11 30	5x11 33	1 34	6.3x11 35	6.3x11 36	8x11.5 37	8x11.5 38	10x12.5 41	10x16 38
4.7				5x11 25	5x11 27	5x11 37	5x11 39	5x11 40	6.3x11 41	8x11.5 42	8x11.5 45	10x12.5 47	10x16 49	10x20 45
6.8				5x11 31	5x11 33	5x11 44	5x11 48	5x11 49	8x11.5 52	10x12.5 59	10x12.5 60	10x16 62	10x16 65	12.5x16 59
10			5x11 35	5x11 37	5x11 40	5x11 54	5x11 59	6.3x11 61	10x12.5 71	10x12.5 72	10x16 74	10x20 79	10x20 86	12.5x20 84
22		5x11 48	5x11 53	5x11 56	5x11 57	5x11 79	5x11 87	6.3x11 100	10x20 117	10x20 119	10x20 127	12.5x20 150	12.5x25 163	16x25 151
33	5x11 52	5x11 56	5x11 60	5x11 75	5x11 80	5x11 97	6.3x11 122	8x11.5 144	10x20 156	10x20 158	12.5x20 184	16x25 200	16x25 222	16x31.5 203
47	5x11 61	5x11 66	5x11 77	5x11 80	5x11 101	6.3x11 133	6.3x11 146	10x12.5 199	12.5x20 218	12.5x20 220	12.5x25 238	16x25 265	16x31.5 290	16x35.5 254
68	5x11 69	5x11 83	5x11 92	5x11 113	6.3x11 138	8x11.5 189	8x11.5 207	10x16 264	12.5x25 287	16x20 293	16x25 318	16x31.5 348	18x35.5 392	
100	5x11 90	5x11 100	5x11 119	6.3x11 159	6.3x11 168	8x11.5 229	10x12.5 251	10x20 349	12.5x25 360	16x25 386	16x31.5 422	18x31.5 450		
220	5x11 153	5x11 170	6.3x11 213	8x11.5 277	8x11.5 294	10x12.5 395	10x16 474	12.5x25 662	16x31.5 680	18x35.5 705	18x40 730			
330	6.3x11 216	6.3x11 239	8x11.5 308	8x11.5 340	10x12.5 419	10x16 529	10x20 633	16x20 810	18x35.5 863					
470	6.3x11 258	6.3x11 286	8x11.5 366	10x12.5 471	10x16 547	10x20 690	12.5x20 886	16x25 1072						
680	8x11.5 365	10x12.5 472	10x12.5 480	10x16 620	12.5x16 777	12.5x20 973	12.5x25 1160	18x31.5 1410						
1000	8x11.5 443	10x12.5 571	10x16 680	10x20 821	12.5x20 1023	12.5x25 1287	16x25 1565	18x40 2020						
2200	10x20 817	10x20 886	10x30 1170	12.5x25 1297	16x25 1497	16x35.5 1884								
3300	10x20 1032	12.5x20 1205	12.5x25 1389	16x25 1646	16x35.5 1950	18x35.5 2260								
4700	12.5x20 1280	12.5x25 1492	16x25 1740	16x31.5 2012	18x35.5 2335									
6800	12.5x25 1554	16x25 1824	16x31.5 2081	18x35.5 2452										
10000	16x25 1897	16x35.5 2201	18x35.5 2527											
15000	16x35.5 2344	18x35.5 2606												
22000	18x40 2787	← Case Size $\varnothing D \times L$ (mm) ← Rated Ripple Current (mA rms/105°C, 120Hz)												

**RIPPLE CURRENT MULTIPLIERS**

**Frequency Multipliers**

Cap. ( $\mu F$ ) \ Freq. (Hz)	120	1k	10k	50k	100k
0.1 ~ 6.8	1.00	1.75	2.30	2.40	2.50
10 ~ 68	1.00	1.50	1.75	1.77	1.80
100 ~ 1000	1.00	1.30	1.40	1.45	1.50
2200 ~ 22000	1.00	1.05	1.08	1.09	1.10

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