

# SURFACE MOUNT ALUMINUM ELECTROLYTIC CAPACITORS



Upgrade

# CM

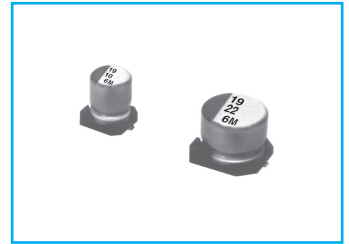
Chip type, Extremely Low Impedance  
Long Life Series



Low Impedance



Solvent Proof



- Chip type, low impedance temperature range up to 105°C
- Designed for surface mounting on high density PC board
- Applicable to automatic insertion machine using carrier tape
- Complied to the RoHS directive



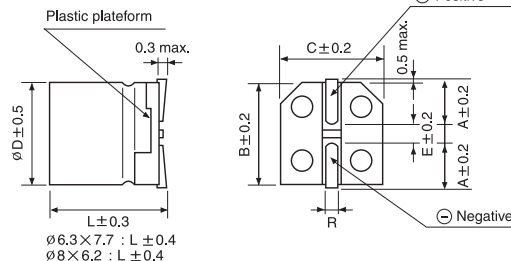
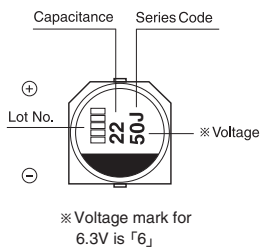
Item	Characteristics																					
Operating temperature range	-55 ~ +105°C																					
Leakage current max.	$I = 0.01CV$ or $3\mu A$ whichever is greater (after 2 minutes)																					
Capacitance tolerance	$\pm 20\%$ at 120Hz, 20°C																					
Dissipation factor max. (at 120Hz, 20°C)	<table border="1"> <tr> <td>WV</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> <td>63 ~ 100</td> </tr> <tr> <td>tan<math>\delta</math></td> <td>0.26</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.13</td> <td>0.12</td> <td>0.10</td> </tr> </table>	WV	6.3	10	16	25	35	50	63 ~ 100	tan $\delta$	0.26	0.19	0.16	0.14	0.13	0.12	0.10					
	WV	6.3	10	16	25	35	50	63 ~ 100														
tan $\delta$	0.26	0.19	0.16	0.14	0.13	0.12	0.10															
Low temperature characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>WV</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50 ~ 100</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-55°C/Z+20°C</td> <td>4</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	WV	6.3	10	16	25	35	50 ~ 100	Z-25°C/Z+20°C	2	2	2	2	2	2	Z-55°C/Z+20°C	4	4	4	3	3	3
	WV	6.3	10	16	25	35	50 ~ 100															
	Z-25°C/Z+20°C	2	2	2	2	2	2															
Z-55°C/Z+20°C	4	4	4	3	3	3																
Load life (after application of the rated voltage for 5000 hours at 105°C)	Leakage current	Less than specified value																				
	Capacitance change	Within $\pm 30\%$ of initial value																				
	tan $\delta$	Less than 250% of specified value																				
	Life time	<table border="1"> <tr> <td><math>\varnothing D</math></td> <td><math>\varnothing D \leq 6.3, \varnothing 8 \times 6.2\text{mmL}</math></td> <td><math>\varnothing D \geq 8</math></td> </tr> <tr> <td>Life time</td> <td>3000 hours</td> <td>5000 hours</td> </tr> </table>	$\varnothing D$	$\varnothing D \leq 6.3, \varnothing 8 \times 6.2\text{mmL}$	$\varnothing D \geq 8$	Life time	3000 hours	5000 hours														
$\varnothing D$	$\varnothing D \leq 6.3, \varnothing 8 \times 6.2\text{mmL}$	$\varnothing D \geq 8$																				
Life time	3000 hours	5000 hours																				
Shelf life (at 105°C)	After 1000 hours no load test, leakage current, capacitance and tan $\delta$ are same as load life value. The measurement shall be performed at 20°C by the KS C IEC 60384 - 4																					
Resistance to soldering heat	Leakage current	Less than specified value																				
	Capacitance change	Within $\pm 10\%$ of initial value																				
	tan $\delta$	Less than specified value																				
		The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 250°C for 10 seconds.																				

## ● DRAWING

Unit : mm

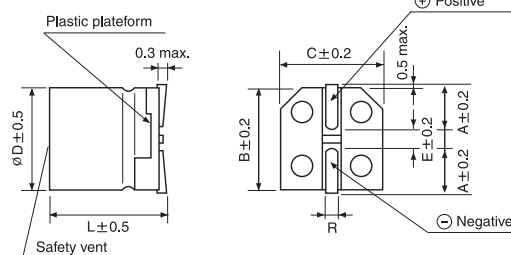
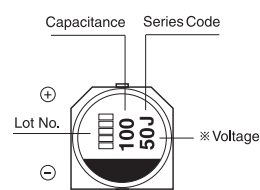
-Series code of CM is "M"

( $\varnothing 6.3, \varnothing 8 \times 6.2$ )

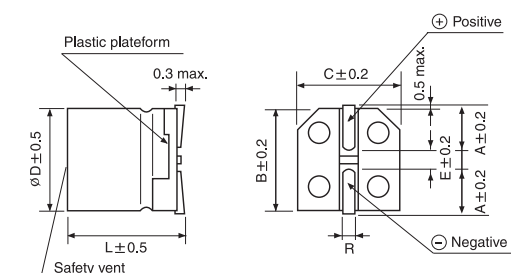
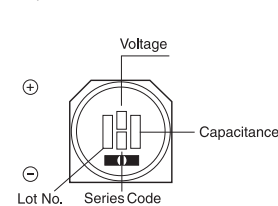


$\varnothing D \times L$	A	B	C	E	R
6.3 × 5.8	2.4	6.6	6.6	2.2	0.5~0.8
6.3 × 7.7	2.4	6.6	6.6	2.2	0.5~0.8
8 × 6.2	3.3	8.3	8.3	2.3	0.5~0.8
8 × 10	2.9	8.3	8.3	3.1	0.8~1.1
10 × 10	3.2	10.3	10.3	4.5	0.8~1.1
12.5 × 13.5	4.6	12.8	12.8	4.5	0.8~1.4

( $\varnothing 8 \times 10, \varnothing 10 \times 10$ )



( $\varnothing 12.5$ )



# SURFACE MOUNT ALUMINUM ELECTROLYTIC CAPACITORS

**CM** series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

$\mu\text{F}$ \diagdown WV	6.3			10			16			25			35			50		
10																6.3×5.8	0.86	170
15																6.3×5.8	0.86	170
22																6.3×5.8	0.86	170
33							6.3×5.8	0.43	240	6.3×5.8	0.43	240	6.3×5.8	0.43	240	6.3×7.7	0.66	280
																8×6.2	0.63	300
47				6.3×5.8	0.43	240	6.3×5.8	0.43	240	6.3×5.8	0.43	240	6.3×5.8	0.43	240	6.3×7.7	0.66	280
																8×6.2	0.63	300
68	6.3×5.8	0.39	240	6.3×5.8	0.39	240	6.3×5.8	0.39	240	6.3×5.8	0.39	240	6.3×7.7	0.32	290	8×10	0.32	350
100	6.3×5.8	0.39	240	6.3×5.8	0.39	240	6.3×5.8	0.39	240	6.3×7.7	0.32	290	8×10	0.16	600	10×10	0.16	700
										8×6.2	0.26	300						
150	6.3×5.8	0.39	240	6.3×5.8	0.39	240	6.3×7.7	0.32	290	8×10	0.16	600	8×10	0.16	600			
220	6.3×5.8	0.39	240	6.3×7.7	0.36	290	6.3×7.7	0.32	290	8×10	0.16	600	10×10	0.08	850			
				8×6.2	0.26	300	8×6.2	0.26	300									
330	6.3×7.7	0.32	290	8×10	0.16	600	8×10	0.16	600	10×10	0.1	850						
	8×6.2	0.26	300															
470	8×10	0.16	600	8×10	0.16	600	10×10	0.08	850	← Ripple current (mA rms) at 105°C, 100kHz								
680	8×10	0.16	600	10×10	0.08	850	↑ Impedance (Ω) at 20°C, 100kHz											
1000	10×10	0.08	850	↑ Case size ØD × L (mm)														

$\mu\text{F}$ \diagdown WV	63			80			100		
10	6.3×7.7	2	80	6.3×7.7	2.4	60	8×10	2	100
22	6.3×7.7	1.2	120	8×10	1.3	130	8×10	2	140
33	8×10	0.65	250	8×10	1.3	130	10×10	0.8	330
47	8×10	0.65	250	10×10	0.7	200	12.5×13.5	0.45	500
68	10×10	0.35	400	12.5×13.5	0.32	500	12.5×13.5	0.45	500
100	10×10	0.35	400	12.5×13.5	0.32	500			
150	12.5×13.5	0.16	800	12.5×13.5	0.32	500			
220	12.5×13.5	0.16	800						

● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

Frequency	50Hz	120Hz	300Hz	1kHz	10kHz $\leq$
Coefficient	0.35	0.5	0.64	0.83	1.00