



# Miniature Aluminum Electrolytic Capacitors

Series

CRS

## FEATURES

- 1、Extremely low and stable leakage current characteristics
- 2、Close capacitance tolerance  $\pm 20\% (\pm 10\%)$

## SPECIFICATIONS

Item	Performance Characteristics																																		
Operating Temperature Range	-40 to +105°C																																		
Rated Working voltage Range	6.3 to 50V																																		
Nominal Capacitance Range	0.1 to 220(uF)																																		
Capacitance Tolerance	$\pm 20\% (120Hz, +20^\circ C)$																																		
Leakage Current	$I \leq 0.002CV$ or $0.4(\mu A)$ Whichever is greater measured after 2 minutes of rated working voltage at $+20^\circ C$																																		
Dissipation Factor $\tan \delta$ (120Hz+20°C)	<table border="1"> <tr> <td>Working voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td><math>\tan \delta</math> (max.)</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> </tr> </table>							Working voltage(V)	6.3	10	16	25	35	50	$\tan \delta$ (max.)	0.24	0.20	0.16	0.14	0.12	0.10														
Working voltage(V)	6.3	10	16	25	35	50																													
$\tan \delta$ (max.)	0.24	0.20	0.16	0.14	0.12	0.10																													
Low Temperature Characteristics	Impedance ratio max. at 120Hz																																		
	<table border="1"> <tr> <td>Working voltage(V)</td> <td>6.3</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> <td>50</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>							Working voltage(V)	6.3	10	16	25	35	50	Z-25°C/Z+20°C	4	3	2	2	2	2	Z-40°C/Z+20°C	8	6	4	4	3	3							
Working voltage(V)	6.3	10	16	25	35	50																													
Z-25°C/Z+20°C	4	3	2	2	2	2																													
Z-40°C/Z+20°C	8	6	4	4	3	3																													
<table border="1"> <tr> <td>CAP(uF)\Hz</td> <td>60(50)</td> <td>120</td> <td>400</td> <td>1K</td> <td>10K</td> <td>50K-100K</td> </tr> <tr> <td rowspan="3">Multiplier</td> <td>CAP≤10</td> <td>0.8</td> <td>1</td> <td>1.30</td> <td>1.45</td> <td>1.65</td> <td>1.70</td> </tr> <tr> <td>10&lt;CAP≤100</td> <td>0.8</td> <td>1</td> <td>1.23</td> <td>1.36</td> <td>1.48</td> <td>1.53</td> </tr> <tr> <td>100&lt;CAP≤1000</td> <td>0.8</td> <td>1</td> <td>1.16</td> <td>1.25</td> <td>1.35</td> <td>1.38</td> </tr> </table>							CAP(uF)\Hz	60(50)	120	400	1K	10K	50K-100K	Multiplier	CAP≤10	0.8	1	1.30	1.45	1.65	1.70	10<CAP≤100	0.8	1	1.23	1.36	1.48	1.53	100<CAP≤1000	0.8	1	1.16	1.25	1.35	1.38
CAP(uF)\Hz	60(50)	120	400	1K	10K	50K-100K																													
Multiplier	CAP≤10	0.8	1	1.30	1.45	1.65	1.70																												
	10<CAP≤100	0.8	1	1.23	1.36	1.48	1.53																												
	100<CAP≤1000	0.8	1	1.16	1.25	1.35	1.38																												
<table border="1"> <tr> <td>Temperature °C</td> <td>45</td> <td>60</td> <td>70</td> <td>85</td> <td>105</td> <td></td> </tr> <tr> <td>Multiplier</td> <td>2.10</td> <td>1.90</td> <td>1.65</td> <td>1.4</td> <td>1.00</td> <td></td> </tr> </table>							Temperature °C	45	60	70	85	105		Multiplier	2.10	1.90	1.65	1.4	1.00																
Temperature °C	45	60	70	85	105																														
Multiplier	2.10	1.90	1.65	1.4	1.00																														
High temperature Loading	Test conditions Duration : 2000 hours Ambient temperature : +105°C Applied voltage : Rated DC working voltage																																		
	Post test requirements at $+20^\circ C$ Leakage current : $\leq$ Initial specified value Capacitance change : $\leq \pm 20\%$ of initial measured $\tan \delta$ : $\leq 200\%$ of initial specified value																																		
Shelf life	Test conditions Duration : 1000 hours Ambient temperature : +105°C Applied voltage : (None)																																		
	Post test requirements at $+20^\circ C$ Leakage current : $\leq$ Initial specified value Capacitance change : $\leq \pm 20\%$ of initial measured value $\tan \delta$ : $\leq 200\%$ of initial specified value Pre-treatment for measurements Measurements shall be conducted after application of DC working Voltage for 30 minutes																																		



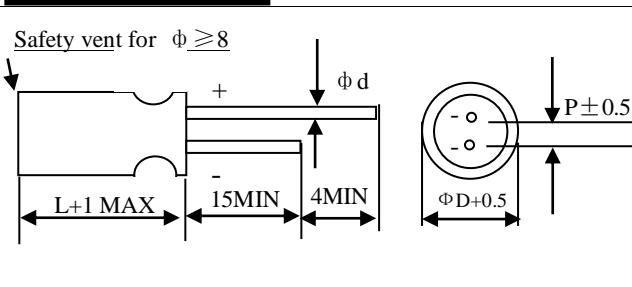
# Miniature Aluminum Electrolytic Capacitors

Others

JIS C-5141 JIS C-5102

## CASE SIZE TABLE

Unit:mm



$D\phi$	4	5	6.3	8
P	1.5	2.0	2.5	3.5
$d\phi (\pm 0.05)$	0.45	0.45	0.45	0.5

## DIMENSIONS

 $\Phi D \times L$ (mm)

Cap.(uF)	Code	WV(SV)		6.3V(8)		10V(13)		16V(20)	
		0J	1A	4x7	32	5x7	49	5x7	63
10	106					4x7		32	
22	226	4x7	38	5x7	44	5x7		49	
33	336	5x7	47	5x7	53	5x7		63	
47	476	5x7	55	5x7	64	5x7		73	
100	107	5x7	83	6.3x7	102	6.3x7		112	
220	227	6.3x7	135			Case Size		Allowable ripple	

Allowable Ripple (mA rms) at 105°C 120Hz

 $\Phi D \times L$ (mm)

Cap.(uF)	Code	WV(SV)		25V(32)		35V(44)		50V(63)	
		1E	1V	4x7	28	4x7	35	4x7	2.0
0.1	104							4x7	
0.22	224							4x7	
0.33	334							4x7	
0.47	474							4x7	
1	105							4x7	
2.2	225							4x7	
3.3	335							4x7	
4.7	475			4x7	28	4x7	35		
10	106	4x7	32	4x7	36	5x7	43		
22	226	5x7	53	6.3x7	57	6.3x7	63		
33	336	6.3x7	62	6.3x7	69	8x7(9)	80(90)		
47	476	6.3x7	75	8x7(9)	90(100)	8x9	106		
100	107	8x7(9)	120(130)	8x9	145	Case Size	Allowable ripple		

Allowable Ripple (mA rms) at 105°C 120Hz