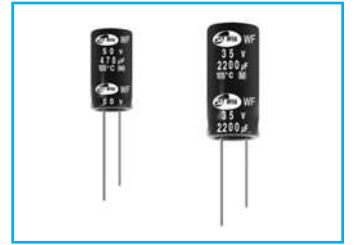


MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS



WF High ripple current, Extremely Low Impedance Series



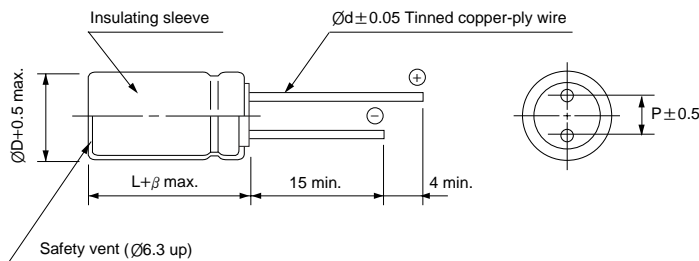
- Operating temperature range of $-40 \sim +105^{\circ}\text{C}$
- Extremely low impedance at high frequency
- High reliability withstanding 10000 hours load life at 105°C (5000 / 7000 hours for smaller case size as specified below)
- Complied to the RoHS directive



Item	Characteristics																	
Operating temperature range	$-40 \sim +105^{\circ}\text{C}$																	
Leakage current max.	$I = 0.03CV$ or $3\mu\text{A}$ whichever is greater (after 2 minutes)																	
Capacitance tolerance	$\pm 20\%$ at 120Hz, 20°C																	
Dissipation factor max. (at 120Hz, 20°C)	Capacitance $> 1000\mu\text{F}$: $\tan\delta$ increases by 0.02 for each $1000\mu\text{F}$ from below value.																	
	<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</td> <td>100</td> </tr> <tr> <td>$\tan\delta$</td> <td>0.22</td> <td>0.19</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> <td>0.10</td> <td>0.09</td> <td>0.08</td> </tr> </table>	WV	6.3	10	16	25	35	50	63	100	$\tan\delta$	0.22	0.19	0.16	0.14	0.12	0.10	0.09
WV	6.3	10	16	25	35	50	63	100										
$\tan\delta$	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08										
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 ~ 100</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>8</td> <td>6</td> <td>4</td> <td>3</td> </tr> </table>	WV	6.3	10	16	25 ~ 100	Z- 40°C /Z+ 20°C	8	6	4	3							
	WV	6.3	10	16	25 ~ 100													
Z- 40°C /Z+ 20°C	8	6	4	3														
Load life (after application of the rated voltage for 10000 hours at 105°C)	Leakage current	Less than specified value																
	Capacitance change	Within $\pm 25\%$ of initial value																
	$\tan\delta$	Less than 200% of specified value																
Shelf life (at 105°C)	<table border="1"> <tr> <td>$\varnothing D$</td> <td>$\varnothing D = 5, 6.3$</td> <td>$\varnothing D = 8, 10$</td> <td>$\varnothing D \geq 12.5$</td> </tr> <tr> <td>Life time</td> <td>5000 hours</td> <td>7000 hours</td> <td>10000 hours</td> </tr> </table>	$\varnothing D$	$\varnothing D = 5, 6.3$	$\varnothing D = 8, 10$	$\varnothing D \geq 12.5$	Life time	5000 hours	7000 hours	10000 hours	After 1000 hours no load test, leakage current, capacitance and $\tan\delta$ are same as load life value.								
	$\varnothing D$	$\varnothing D = 5, 6.3$	$\varnothing D = 8, 10$	$\varnothing D \geq 12.5$														
Life time	5000 hours	7000 hours	10000 hours															

DRAWING

Unit : mm



$\varnothing D$	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
$\varnothing d$	0.5	0.5	0.6	0.6	0.6	0.8	0.8
β	1.5			2.0			

FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

μF \ Frequency(Hz)	120	1k	10k	100k \leq
~ 33	0.40	0.65	0.82	1.00
39 ~ 270	0.50	0.70	0.84	1.00
330 ~ 680	0.55	0.75	0.86	1.00
820 ~ 1800	0.60	0.80	0.88	1.00
2200 ~ 15000	0.70	0.85	0.90	1.00

MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

WF series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV Item μF	6.3			10			16			25		
	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
33										5 × 11	0.90	150
47							5 × 11	0.90	150	5 × 11	0.90	150
100	5 × 11	0.90	150	5 × 11	0.90	150	6.3 × 11	0.40	250	6.3 × 11	0.40	250
220	6.3 × 11	0.40	250	6.3 × 11	0.40	250	8 × 11.5	0.25	400	8 × 11.5	0.25	400
330	6.3 × 11	0.40	250	8 × 11.5	0.25	400	8 × 11.5	0.25	400	10 × 12.5	0.16	580
470	8 × 11.5	0.25	400	8 × 11.5	0.25	400	10 × 12.5	0.16	580	10 × 16	0.120	770
1000	10 × 12.5	0.16	580	10 × 16	0.120	770	10 × 20	0.078	1050	12.5 × 20	0.062	1300
2200	12.5 × 20	0.062	1300	12.5 × 20	0.062	1300	12.5 × 25	0.048	1650	16 × 25	0.034	1850
3300	12.5 × 20	0.062	1300	12.5 × 25	0.048	1650	16 × 25	0.034	1850	16 × 31.5	0.029	2000
4700	16 × 25	0.034	1850	16 × 25	0.034	1850	16 × 31.5	0.029	2000	18 × 35.5	0.025	2200
6800	16 × 25	0.034	1850	16 × 31.5	0.029	2000	18 × 35.5	0.025	2200			
10000	16 × 31.5	0.029	2000	18 × 35.5	0.025	2200						
15000	18 × 35.5	0.025	2200									

WV Item μF	35			50			63			100		
	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
0.47				5 × 11	5.5	17				5 × 11	6.0	15
1.0				5 × 11	4.0	30				5 × 11	4.5	20
2.2				5 × 11	2.5	43				5 × 11	3.0	30
3.3				5 × 11	2.2	53				5 × 11	2.7	40
4.7				5 × 11	1.9	88				5 × 11	2.5	65
10				5 × 11	1.5	100	5 × 11	2.3	87	6.3 × 11	1.2	140
22				5 × 11	0.9	150	6.3 × 11	1.30	140	8 × 11.5	0.63	160
33	5 × 11	0.90	150	6.3 × 11	0.40	250	6.3 × 11	1.20	140	10 × 12.5	0.43	230
47	6.3 × 11	0.40	250	6.3 × 11	0.40	250	8 × 11.5	0.63	210	10 × 16	0.31	290
100	8 × 11.5	0.25	400	8 × 11.5	0.25	400	10 × 12.5	0.43	300	12.5 × 20	0.16	430
220	10 × 12.5	0.16	580	10 × 16	0.12	770	10 × 25	0.210	520	16 × 25	0.073	900
330	10 × 16	0.120	770	10 × 20	0.08	1050	12.5 × 20	0.160	660	16 × 25	0.073	900
470	10 × 20	0.078	1050	12.5 × 20	0.062	1300	12.5 × 25	0.120	750			
1000	12.5 × 25	0.048	1650	16 × 25	0.034	1850	16 × 31.5	0.054	1390			
2200	16 × 31.5	0.029	2000	18 × 35.5	0.025	2200						
3300	18 × 35.5	0.025	2200									