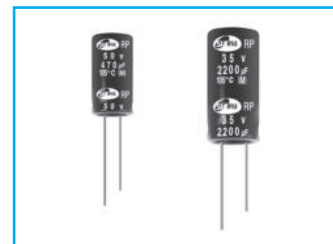


# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

**RP** Low Impedance Series

**IZI** Low Impedance    **LL** Long Life    **S** Solvent Proof



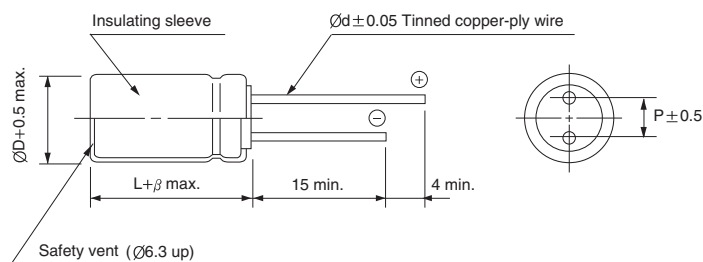
- High reliability long life(10000 hours)
- Operating temperature  $-55 \sim +105^{\circ}\text{C}$
- Enabled high ripple current by a reduction of impedance at high frequency
- Ideally suited for use in switching power supply, main board
- Complied to the RoHS directive

**RZ**  $\rightarrow$  **RP**  
Long life

Item	Characteristics													
Operating temperature range	$-55 \sim +105^{\circ}\text{C}$													
Leakage current max.	$I = 0.01\text{CV}$ or $3\mu\text{A}$ whichever is greater (after 2 minutes)													
Capacitance tolerance	$\pm 20\%$ at 120Hz, $20^{\circ}\text{C}$													
Dissipation factor max. (at 120Hz, $20^{\circ}\text{C}$ )	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> </tr> <tr> <td><math>\tan\delta</math></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> </tr> </table>	WV	6.3	10	16	25	35	50	$\tan\delta$	0.22	0.19	0.16	0.14	0.12
WV	6.3	10	16	25	35	50								
$\tan\delta$	0.22	0.19	0.16	0.14	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 ~ 25</td> <td>35 ~ 50</td> </tr> <tr> <td>Z-<math>55^{\circ}\text{C}</math>/Z+<math>20^{\circ}\text{C}</math></td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </table>	WV	6.3	10	16 ~ 25	35 ~ 50	Z- $55^{\circ}\text{C}$ /Z+ $20^{\circ}\text{C}$	3	3	3	3			
	WV	6.3	10	16 ~ 25	35 ~ 50									
Z- $55^{\circ}\text{C}$ /Z+ $20^{\circ}\text{C}$	3	3	3	3										
Load life	After an application of DC bias voltage plus the rated AC ripple current for 10000 hours at $105^{\circ}\text{C}$ . The measurement shall meet the following limits. The DC voltage plus the peak AC voltage combined must not exceed the rated voltage.													
	<table border="1"> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within <math>\pm 20\%</math> of initial value</td> </tr> <tr> <td><math>\tan\delta</math></td> <td>Less than 200% of specified value</td> </tr> </table>	Leakage current	Less than specified value	Capacitance change	Within $\pm 20\%$ of initial value	$\tan\delta$	Less than 200% of specified value							
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<table border="1"> <tr> <td><math>\varnothing\text{D}</math></td> <td><math>\varnothing\text{D} = 5, 6.3</math></td> <td><math>\varnothing\text{D} = 8</math></td> <td><math>\varnothing\text{D} = 10</math></td> <td><math>\varnothing\text{D} \geq 12.5</math></td> </tr> <tr> <td>Life time</td> <td>4000 hours</td> <td>6000 hours</td> <td>7000 hours</td> <td>10000 hours</td> </tr> </table>	$\varnothing\text{D}$	$\varnothing\text{D} = 5, 6.3$	$\varnothing\text{D} = 8$	$\varnothing\text{D} = 10$	$\varnothing\text{D} \geq 12.5$	Life time	4000 hours	6000 hours	7000 hours	10000 hours				
$\varnothing\text{D}$	$\varnothing\text{D} = 5, 6.3$	$\varnothing\text{D} = 8$	$\varnothing\text{D} = 10$	$\varnothing\text{D} \geq 12.5$										
Life time	4000 hours	6000 hours	7000 hours	10000 hours										
Shelf life (at $105^{\circ}\text{C}$ )	After 1000 hours no load test, leakage current, capacitance and $\tan\delta$ are same as load life value. The measurement shall be performed at $20^{\circ}\text{C}$ by the KS C IEC 60384 - 4													

## ● DRAWING

Unit : mm



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

## ● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

$\mu\text{F}$ \ Frequency	120Hz	1kHz	10kHz	50kHz	100kHz $\leq$
$\sim 33$	0.40	0.65	0.82	0.91	1.00
39 ~ 270	0.50	0.70	0.84	0.92	1.00
330 ~ 680	0.55	0.75	0.86	0.93	1.00
820 ~ 1800	0.60	0.80	0.88	0.94	1.00
2200 ~	0.70	0.85	0.90	0.95	1.00

**RP** series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV Item μF	6.3			10			16		
	ØD×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
47							5 × 11	0.65	180
68				5 × 11	0.65	180	6.3 × 11	0.30	280
100	5 × 11	0.65	180	5 × 11	0.65	180	6.3 × 11	0.30	280
150	5 × 11	0.65	280	6.3 × 11	0.30	280	6.3 × 11	0.30	280
220	6.3 × 11	0.30	280	6.3 × 11	0.30	280	8 × 11.5	0.14	450
330	6.3 × 11	0.30	280	8 × 11.5	0.14	450	8 × 11.5	0.14	450
470	8 × 11.5	0.14	450	8 × 11.5	0.14	450	10 × 12.5	0.10	660
680	10 × 12.5	0.10	660	10 × 12.5	0.10	660	10 × 16	0.08	850
1000	10 × 12.5	0.10	660	10 × 16	0.08	850	10 × 20	0.054	1100
1500	10 × 20	0.054	1100	10 × 20	0.054	1100	12.5 × 20	0.050	1400
2200	12.5 × 20	0.050	1400	12.5 × 20	0.050	1400	12.5 × 25	0.038	1700
3300	12.5 × 20	0.050	1400	12.5 × 25	0.038	1700	16 × 25	0.030	2100
4700	16 × 25	0.030	2100	16 × 31.5	0.030	2100	16 × 25	0.025	2600
6800	16 × 25	0.030	2100	16 × 31.5	0.025	2600	16 × 35.5	0.022	3000
10000	16 × 31.5	0.025	2600	18 × 35.5	0.022	3000			
15000	18 × 35.5	0.022	3000						

WV Item μF	25			35			50		
	ØD×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
1.0							5 × 11	3.5	40
2.2							5 × 11	3.0	55
3.3							5 × 11	2.6	65
4.7							5 × 11	2.3	90
6.8							5 × 11	1.4	120
10							5 × 11	1.4	120
22				5 × 11	0.70	180	5 × 11	1.2	150
33	5 × 11	0.70	180	5 × 11	0.65	180	6.3 × 11	0.85	200
47	5 × 11	0.65	180	6.3 × 11	0.30	280	6.3 × 11	0.70	250
68	6.3 × 11	0.30	280	8 × 11.5	0.14	450	8 × 11.5	0.24	340
100	6.3 × 11	0.30	280	8 × 11.5	0.14	450	8 × 11.5	0.24	340
150	8 × 11.5	0.14	450	8 × 11.5	0.14	450	10 × 12.5	0.17	490
220	8 × 11.5	0.14	450	10 × 12.5	0.10	660	10 × 16	0.12	650
330	10 × 12.5	0.10	660	10 × 16	0.080	850	10 × 20	0.10	810
470	10 × 16	0.080	850	10 × 20	0.054	1100	12.5 × 20	0.085	1100
680	10 × 20	0.054	1100	12.5 × 20	0.050	1400	12.5 × 25	0.065	1200
1000	12.5 × 20	0.050	1400	12.5 × 25	0.038	1700	16 × 31.5	0.043	1600
1500	16 × 25	0.030	1400	16 × 31.5	0.030	2100	16 × 31.5	0.038	2000
2200	16 × 25	0.030	2100	16 × 31.5	0.025	2600	18 × 35.5	0.034	2300
3300	16 × 31.5	0.025	2600	18 × 35.5	0.022	3000			
4700	18 × 35.5	0.022	3000						

MINIATURE TYPES