

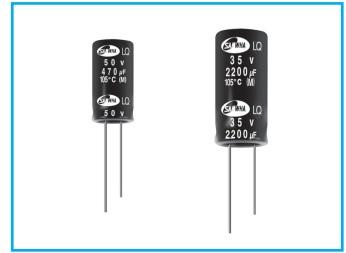
MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS



LQ

Low Imp., High Ripple Current Series

I Low Impedance **M** Miniaturized **S** Solvent Proof

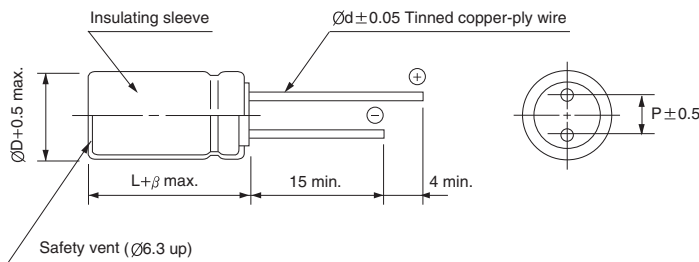


- For LED Lighting
- High reliability withstanding 10000 hours load life at 105°C (6000 ~ 9000 hours for smaller case sizes as specified below)
- Complied to the RoHS directive

Item	Characteristics																														
Operating temperature range	-40 ~ +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)	Capacitance > 1000 μF : $\tan\delta$ increases by 0.02 for each 1000 μF 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>80</td> <td>100</td> <td>120</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> <td>0.08</td> <td>0.08</td> </tr> </table>	WV	6.3	10	16	25	35	50	63	80	100	120	$\tan\delta$	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.08	0.08								
WV	6.3	10	16	25	35	50	63	80	100	120																					
$\tan\delta$	0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	0.08	0.08																					
Low temperature characteristics (Impedance ratio at 120Hz)	Z-25°C / Z+20°C	2																													
	Z-40°C / Z+20°C	3																													
Load life	After an application of DC bias voltage plus the rated AC ripple current for 10000 hours at 105°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>Rated voltage (Vdc)</td> <td>6.3 ~ 10</td> <td>16 ~ 120</td> </tr> <tr> <td>Capacitance change</td> <td>Within $\pm 30\%$ of initial value</td> <td>Within $\pm 25\%$ of initial value</td> </tr> <tr> <td>$\tan\delta$</td> <td colspan="2">Less than 200% of specified value</td> </tr> <tr> <td>Leakage current</td> <td colspan="2">Less than specified value</td> </tr> </table>	Rated voltage (Vdc)	6.3 ~ 10	16 ~ 120	Capacitance change	Within $\pm 30\%$ of initial value	Within $\pm 25\%$ of initial value	$\tan\delta$	Less than 200% of specified value		Leakage current	Less than specified value																			
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<table border="1"> <tr> <td rowspan="2">$\varnothing D$</td> <td colspan="3">Life time (hrs)</td> </tr> <tr> <td>6.3Vdc</td> <td>10 ~ 50Vdc</td> <td>63 ~ 120Vdc</td> </tr> <tr> <td>$\varnothing 5 \sim \varnothing 6.3$</td> <td>6000</td> <td>7000</td> <td>6000</td> </tr> <tr> <td>$\varnothing 8 \times 11.5L$</td> <td>8000</td> <td>9000</td> <td>8000</td> </tr> <tr> <td>$\varnothing 8 \times 15L \sim 20L$</td> <td>9000</td> <td>10000</td> <td>9000</td> </tr> <tr> <td>$\varnothing 10 \times 12.5L$</td> <td colspan="3">9000</td> </tr> <tr> <td>$\varnothing 10 \times 16L \sim 25L$</td> <td colspan="3">10000</td> </tr> <tr> <td>$\varnothing 12.5 \sim$</td> <td colspan="3">10000</td> </tr> </table>	$\varnothing D$	Life time (hrs)			6.3Vdc	10 ~ 50Vdc	63 ~ 120Vdc	$\varnothing 5 \sim \varnothing 6.3$	6000	7000	6000	$\varnothing 8 \times 11.5L$	8000	9000	8000	$\varnothing 8 \times 15L \sim 20L$	9000	10000	9000	$\varnothing 10 \times 12.5L$	9000			$\varnothing 10 \times 16L \sim 25L$	10000			$\varnothing 12.5 \sim$	10000		
$\varnothing D$		Life time (hrs)																													
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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																														

● 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			

MINIATURE TYPES

● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

Frequency μF	120Hz	1kHz	10kHz	50kHz	100kHz \leq
~ 33	0.42	0.70	0.90	0.95	1.00
47 ~ 270	0.50	0.73	0.92	0.96	1.00
330 ~ 680	0.55	0.77	0.94	0.97	1.00
820 ~ 1800	0.60	0.80	0.96	0.98	1.00
2200 ~	0.70	0.85	0.98	0.99	1.00

MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

LQ series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV Item μF	6.3			10			16			25			35		
	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
100										5×11	0.400	450	6.3×11	0.170	700
120							5×11	0.400	450						
150				5×11	0.400	450				6.3×11	0.170	700			
180													8×11.5	0.075	1200
220	5×11	0.400	345										8×15	0.065	1600
270													10×12.5	0.053	1700
330				6.3×11	0.170	700				8×11.5	0.090	1200	8×20	0.041	1960
390										8×15	0.065	1600	10×16	0.038	2000
470	6.3×11	0.170	540							10×12.5	0.053	1700	10×16	0.038	2100
560				8×11.5	0.110	1200	8×15	0.059	1600	8×20	0.041	1960	10×20	0.030	2500
680				8×15	0.059	1600	10×12.5	0.053	1700	10×16	0.039	2000	10×25	0.027	2900
820	8×11.5	0.075	945	10×12.5	0.053	1700	8×20	0.041	1960				12.5×20	0.025	2600
1000	8×15	0.059	1250	10×16	0.041	1960	10×16	0.036	2000	10×20	0.030	2500	12.5×20	0.025	2800
1200	10×12.5	0.053	1500	10×16	0.036	2000				10×25	0.028	2900	12.5×25	0.022	3200
1500	8×20	0.041	1500				10×20	0.027	2500	12.5×20	0.026	2600	12.5×30	0.018	3660
1800	10×16	0.036	1760	10×20	0.027	2500	10×25	0.024	2600	12.5×25	0.024	3200	16×20	0.021	3330
2200				10×25	0.027	2900	12.5×20	0.023	2900	12.5×30	0.017	3660	16×25	0.017	3810
2700	10×20	0.027	1960	10×20	0.024	2600	12.5×25	0.018	3200	16×20	0.020	3330			
3300	10×25	0.023	2250	12.5×25	0.018	3200	12.5×30	0.017	3660	16×25	0.016	3810			
3900	12.5×20	0.024	2480				16×20	0.020	3300						
4700	12.5×25	0.018	2900	12.5×30	0.018	3660	12.5×34.5	0.015	4120						
5600	12.5×30	0.017	3450	16×25	0.016	3810	16×25	0.016	3810						
6800	12.5×34.5	0.015	3570												
8200	16×25	0.016	3630												

WV Item μF	50			63			80			100			120		
	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz	ØD×L (mm)	IMP. (Ω)max. 20°C 100kHz	Ripple current (mA rms) 105°C 100kHz
27	5×11	0.480	310				6.3×11	0.460	370						
33										8×11.5	0.450	620	8×15	0.200	780
47	6.3×11	0.380	400	6.3×11	0.350	420	8×11.5	0.290	620	8×15	0.350	780	8×20	0.160	1040
56	6.3×11	0.220	500							10×12.5	0.250	780	10×16	0.110	1040
68							8×15	0.200	780	10×12.5	0.250	780			
82							10×12.5	0.170	780	8×20	0.250	1040	10×20	0.084	1430
100	8×11.5	0.120	950	8×15	0.180	990	10×16	0.140	1040	10×16	0.130	1040	12.5×16	0.110	1430
120	8×15	0.082	1230	10×12.5	0.110	990				10×16	0.130	1140			
150	10×12.5	0.073	1280	8×20	0.096	1200	10×16	0.140	1040	10×20	0.105	1430	10×25	0.069	1620
180	8×20	0.065	1580	10×16	0.076	1200	12.5×16	0.110	1430	12.5×16	0.105	1430	12.5×20	0.062	1750
220	10×16	0.050	1650				10×25	0.069	1620	10×25	0.075	1620	12.5×25	0.047	2210
270							12.5×20	0.062	1750	12.5×20	0.070	1750	12.5×30	0.042	2400
330	10×20	0.036	2060	10×25	0.060	1990	12.5×25	0.047	2210	12.5×25	0.060	2210	16×20	0.048	1950
390	10×25	0.030	2240	12.5×20	0.050	1990	12.5×30	0.042	2400	12.5×34.5	0.038	2600	16×25	0.038	2430
470	12.5×20	0.030	2300	12.5×25	0.039	2460	16×20	0.048	1950	16×20	0.046	1950	18×25	0.036	2500
560							12.5×30	0.035	2760	12.5×34.5	0.030	2860	16×35.5	0.029	2860
680	12.5×25	0.024	2800	12.5×34.5	0.024	3040	16×20	0.045	2270	16×31.5	0.030	2640	18×25	0.036	2500
820	12.5×30	0.022	3370	16×25	0.025	2890	16×31.5	0.032	2860	16×35.5	0.028	2860	18×35.5	0.026	3510
1000	16×20	0.025	3070				18×20	0.045	2270	18×25	0.034	2500	18×31.5	0.030	2860
1200	12.5×34.5	0.020	3810	16×31.5	0.023	2950	18×25	0.036	2500	18×35.5	0.026	3510			
1500	16×25	0.021	3510				18×31.5	0.030	2860	18×40	0.025	3860			
2200				18×40	0.020	3200									