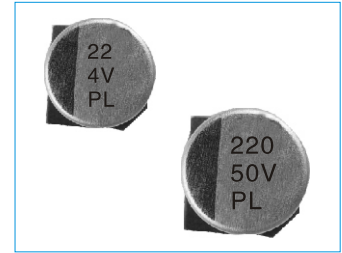
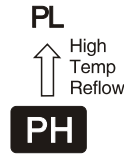


Chip Type Aluminum Electrolytic Capacitors

PL Chip Type Series



- Case diameter: $\Phi 4\text{mm} \sim \Phi 10\text{mm}$
- Corresponding with 260°C peak reflow soldering
- Available for high density surface mounting
- Operating over wide High Temperature range($-55^{\circ}\text{C} \sim +105^{\circ}\text{C}$)
- Load life of 2000 hours at $+105^{\circ}\text{C}$
- Adapted to the RoHS directive (2002/95/EC)

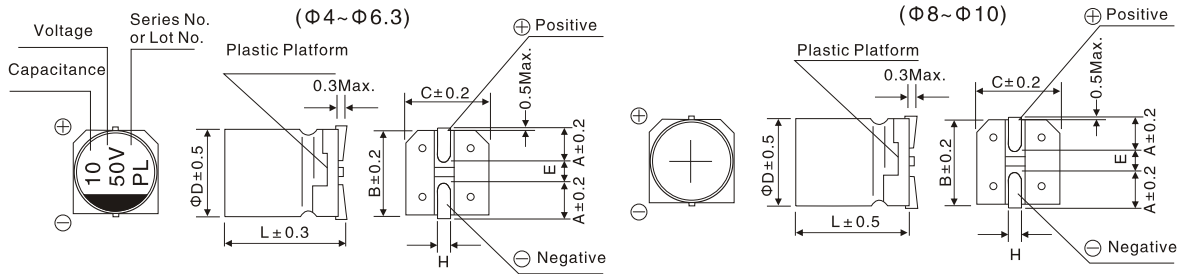
■ Specifications

Item	Characteristics																								
Operating Temperature Range	$-55^{\circ}\text{C} \sim +105^{\circ}\text{C}$																								
Rated Voltage Range	4V ~ 50V																								
Nominal Capacitance Range	0.1 μF ~ 1500 μF																								
Capacitance Tolerance	M ($\pm 20\%$) (20 $^{\circ}\text{C}$, 120Hz)																								
Leakage Current	$I \leq 0.01CV$ or $3(\mu\text{A})$, whichever is greater. C:Nominal capacitance (μF) V:Rated voltage(V) (20 $^{\circ}\text{C}$, after 2 minutes)																								
Dissipation Factor (Max)	<table border="1"> <thead> <tr> <th>WV</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>tan δ</td> <td>0.40</td> <td>0.30</td> <td>0.24</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.14</td> </tr> </tbody> </table> <p>(20$^{\circ}\text{C}$, 120Hz)</p>	WV	4	6.3	10	16	25	35	50	tan δ	0.40	0.30	0.24	0.20	0.16	0.14	0.14								
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Low Temperature Stability (Impedance Ratio)	<table border="1"> <thead> <tr> <th>WV</th> <th>4</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> </tr> </thead> <tbody> <tr> <td>Z(-25$^{\circ}\text{C}$)/Z(+20$^{\circ}\text{C}$)</td> <td>7</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40$^{\circ}\text{C}$)/Z(+20$^{\circ}\text{C}$)</td> <td>15</td> <td>8</td> <td>8</td> <td>4</td> <td>4</td> <td>3</td> <td>3</td> </tr> </tbody> </table> <p>(120Hz)</p>	WV	4	6.3	10	16	25	35	50	Z(-25 $^{\circ}\text{C}$)/Z(+20 $^{\circ}\text{C}$)	7	4	3	2	2	2	2	Z(-40 $^{\circ}\text{C}$)/Z(+20 $^{\circ}\text{C}$)	15	8	8	4	4	3	3
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Load Life	<p>After 2000 hours' application of rated voltage at 105°C, the capacitors shall meet the following requirement:</p> <table border="1"> <tbody> <tr> <td>Capacitance change</td> <td>Within $\pm 20\%$ of the initial value ($\leq 16\text{V}$: Within $\pm 25\%$ of the initial value).</td> </tr> <tr> <td>Dissipation factor</td> <td>Not more than 200% of the initial specified value.</td> </tr> <tr> <td>Leakage current</td> <td>Not more than the initial specified value.</td> </tr> </tbody> </table>	Capacitance change	Within $\pm 20\%$ of the initial value ($\leq 16\text{V}$: Within $\pm 25\%$ of the initial value).	Dissipation factor	Not more than 200% of the initial specified value.	Leakage current	Not more than the initial specified value.																		
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Shelf Life	After storage for 1000 hours at $+105^{\circ}\text{C}$, the capacitors shall meet the requirement of load life above .																								
Rated Ripple Current & Frequency Multipliers	<table border="1"> <tbody> <tr> <td>Frequency</td> <td>50Hz</td> <td>120Hz</td> <td>300Hz</td> <td>1kHz</td> <td>$\geq 10\text{kHz}$</td> </tr> <tr> <td>Multiplier</td> <td>0.70</td> <td>1.00</td> <td>1.17</td> <td>1.36</td> <td>1.50</td> </tr> </tbody> </table>	Frequency	50Hz	120Hz	300Hz	1kHz	$\geq 10\text{kHz}$	Multiplier	0.70	1.00	1.17	1.36	1.50												
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■ Dimensions



	4 × 5.8	5 × 5.8	6.3 × 5.8	6.3 × 7.7	8 × 10	10 × 10
A	1.8	2.1	2.4	2.4	2.9	3.2
B	4.3	5.3	6.6	6.6	8.3	10.3
C	4.3	5.3	6.6	6.6	8.3	10.3
E	1.0	1.3	2.2	2.2	3.1	4.5
L	5.8	5.8	5.8	7.7	10	10
H	0.5 ~ 0.8				0.8 ~ 1.1	

■ Nominal capacitance, rated voltage, rated ripple current and case size table

WV Item μF	4		6.3		10		16		25		35		50	
	D × L mm	I~	D × L mm	I~	D × L mm	I~	D × L mm	I~	D × L mm	I~	D × L mm	I~	D × L mm	I~
0.1													4 × 5.8	1.0
0.22													4 × 5.8	2.6
0.33													4 × 5.8	3.2
0.47													4 × 5.8	3.8
1.0													4 × 5.8	6.3
2.2											4 × 5.8	7.5	4 × 5.8	11
3.3											4 × 5.8	9	4 × 5.8	14
4.7									4 × 5.8	13	4 × 5.8	15	5 × 5.8	19
10							4 × 5.8	18	5 × 5.8	23	5 × 5.8	25	6.3 × 5.8	31
22	4 × 5.8	22	4 × 5.8	22	5 × 5.8	27	5 × 5.8	31	6.3 × 5.8	39	6.3 × 5.8	43	6.3 × 7.7	51
33	5 × 5.8	31	5 × 5.8	31	5 × 5.8	36	6.3 × 5.8	41	6.3 × 5.8	49	6.3 × 7.7	59	6.3 × 7.7	60
47	5 × 5.8	37	5 × 5.8	37	6.3 × 5.8	47	6.3 × 5.8	51	6.3 × 7.7	66	6.3 × 7.7	63	6.3 × 7.7	63
100	6.3 × 5.8	62	6.3 × 5.8	62	6.3 × 5.8	62	6.3 × 5.8	62	6.3 × 7.7	91	6.3 × 7.7	84	8 × 10	140
150	6.3 × 7.7	86	6.3 × 7.7	86	6.3 × 7.7	86	6.3 × 7.7	95	8 × 10	140	8 × 10	155	10 × 10	180
220	6.3 × 7.7	102	6.3 × 7.7	102	6.3 × 7.7	105	6.3 × 7.7	105	8 × 10	155	8 × 10	190	10 × 10	220
330	6.3 × 7.7	105	6.3 × 7.7	105	8 × 10	195	8 × 10	195	8 × 10	190	10 × 10	300		
470	8 × 10	210	8 × 10	210	8 × 10	210	8 × 10	230	10 × 10	300				
680	8 × 10	210	8 × 10	210	10 × 10	310	10 × 10	310						
1000	8 × 10	230	8 × 10	230	10 × 10	310								
1500	10 × 10	310	10 × 10	310										

Rated ripple current (mA rms) (105°C, 120Hz)