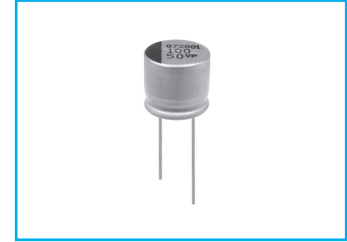


MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Upgrade

VP 135°C, Long Life, Low Impedance Series

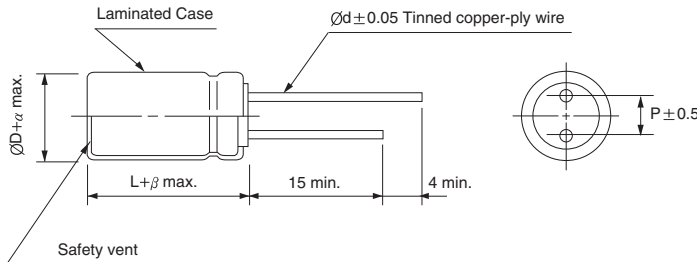
- Applied Laminated case series
- Suited for automobile applications
- Complied to the RoHS directive
- AEC-Q200 compliant. Please contact us for details



Item	Characteristics															
Operating temperature range	-40 ~ +135°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>Rated Voitage(V)</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> </tr> <tr> <td>$\tan\delta$</td> <td>0.20</td> <td>0.16</td> <td>0.14</td> <td>0.12</td> </tr> </table>	Rated Voitage(V)	10	16	25	35	$\tan\delta$	0.20	0.16	0.14	0.12					
Rated Voitage(V)	10	16	25	35												
$\tan\delta$	0.20	0.16	0.14	0.12												
Low temperature characteristics (Impedance ratio at 120Hz)	<table border="1"> <tr> <td>WV</td> <td>10</td> <td>16</td> <td>25</td> <td>35</td> </tr> <tr> <td>Z-25°C/Z+20°C</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z-40°C/Z+20°C</td> <td>6</td> <td>4</td> <td>3</td> <td>3</td> </tr> </table>	WV	10	16	25	35	Z-25°C/Z+20°C	3	2	2	2	Z-40°C/Z+20°C	6	4	3	3
	WV	10	16	25	35											
	Z-25°C/Z+20°C	3	2	2	2											
Z-40°C/Z+20°C	6	4	3	3												
Load life (after application of the rated voltage for 3000 hours at 135°C)	<table border="1"> <tr> <td>Leakage current</td> <td>Less than specified value</td> </tr> <tr> <td>Capacitance change</td> <td>Within $\pm 30\%$ of initial value</td> </tr> <tr> <td>$\tan\delta$</td> <td>Less than 300% of specified value</td> </tr> </table>	Leakage current	Less than specified value	Capacitance change	Within $\pm 30\%$ of initial value	$\tan\delta$	Less than 300% of specified value									
Leakage current	Less than specified value															
Capacitance change	Within $\pm 30\%$ of initial value															
$\tan\delta$	Less than 300% of specified value															
Shelf life (at 135°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

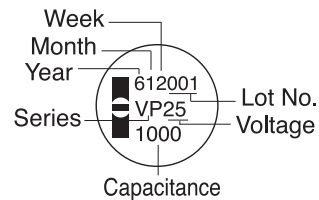
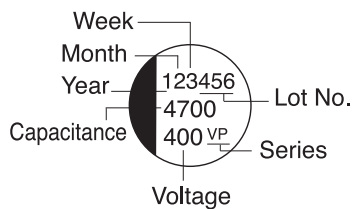
Unit : mm



ØD	10	12.5	16	18
P	5.0	5.0	7.5	7.5
Ød	0.6	0.6	0.8	0.8
α	0.5			
β	2.0			

(Ø10)

(Ø12.5≤)



● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

µF \ Frequency	120Hz	1kHz	10kHz	50kHz	100kHz ≤
~ 330	0.50	0.85	0.95	0.97	1.00
470 ~ 1500	0.55	0.90	0.98	0.99	1.00
2200 ~	0.60	0.95	0.98	0.99	1.00

VP series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV Item μF	10			16		
	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 135°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 135°C 100kHz
470	10 × 12.5	0.15	690	10 × 12.5	0.10	960
1000	10 × 20	0.07	1005	10 × 20	0.060	1150
2200	12.5 × 25	0.050	1280	12.5 × 25	0.060	1430
3300	12.5 × 30	0.050	1900	12.5 × 30	0.050	2300
4700	12.5 × 34.5	0.040	2300	12.5 × 34.5	0.040	2550
	16 × 25	0.035	2200	16 × 25	0.035	2440
5600	18 × 25	0.030	3300	18 × 25	0.030	3660
6800	18 × 31.5	0.028	3600	18 × 31.5	0.028	4000
8200	18 × 35.5	0.027	3800	18 × 35.5	0.027	4100
10000	18 × 40	0.026	4000	18 × 40	0.026	4200

WV Item μF	25			35		
	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 135°C 100kHz	$\varnothing\text{D} \times \text{L}$ (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 135°C 100kHz
220				10 × 12.5	0.15	620
330				10 × 16	0.10	800
470	10 × 20	0.10	1130	10 × 20	0.070	960
1000	12.5 × 25	0.060	1800	12.5 × 30	0.040	1430
1500	12.5 × 30	0.055	2000	16 × 25	0.038	2100
2200	12.5 × 30	0.050	2300	18 × 25	0.035	2500
	16 × 25	0.050	2200			
3300	18 × 25	0.045	3300	18 × 31.5	0.032	3800
4700	18 × 31.5	0.040	3600	18 × 35.5	0.030	4100
5600	18 × 35.5	0.038	3700	18 × 40	0.028	4300
6800	18 × 40	0.037	3800			