

# MINIATURE ALUMINUM ELECTROLYTIC CAPACITORS

Upgrade

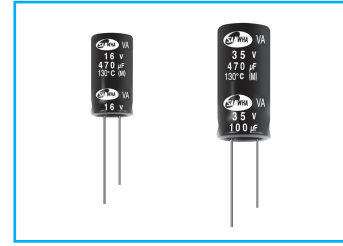
**VA**

130°C, Long Life, Low Impedance Series

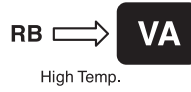
**IZI**  
Low Impedance

**LL**  
Long Life

**S**  
Solvent Proof



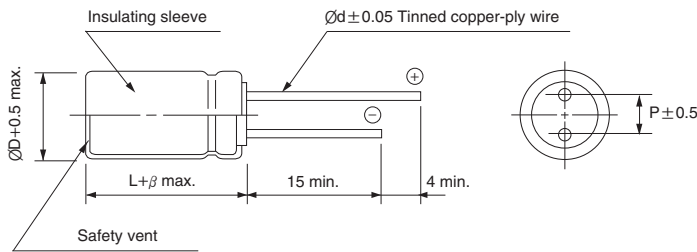
- Load life of 4000 hours at 130°C
- Low impedance at high frequency
- For Electronic Control Unit and other high temperature applications
- Complied to the RoHS directive



Item	Characteristics				
Operating temperature range	-40 ~ +130°C				
Leakage current max.	I = 0.01CV or 3µA whichever is greater (after 2 minutes)				
Capacitance tolerance	±20% at 120Hz, 20°C				
Dissipation factor max. (at 120Hz, 20°C)	When the capacitance exceeds 1000µF, 0.02 for each 1000µF increase.				
	Rated Voltage(V)	10	16	25	35
	tanδ	0.20	0.16	0.14	0.12
Low temperature characteristics (Impedance ratio at 120Hz)	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 4000 hours at 130°C)	Leakage current	Less than specified value			
	Capacitance change	Within ±30% of initial value			
	tanδ	Less than 300% of specified value			
	Ø8 and Ø10 products are for 2000 hours				
Shelf life (at 130°C)	After 1000 hours no load test, leakage current, capacitance and tanδ are same as load life value. The measurement shall be performed at 20°C by the KS C 6503 clause 5.1.				

● DRAWING

Unit : mm



ØD	8	10	12.5	16	18
P	3.5	5.0	5.0	7.5	7.5
Ød	0.6	0.6	0.6	0.8	0.8
β	1.5	2.0			

● FREQUENCY COEFFICIENT OF PERMISSIBLE RIPPLE CURRENT

µF \ Frequency	60Hz	120Hz	1kHz	10kHz	50kHz	100kHz ≤
~ 330	0.60	0.70	0.85	0.95	0.97	1.00
470 ~ 1500	0.65	0.75	0.90	0.98	0.99	1.00
2200 ~	0.75	0.80	0.95	1.00	1.00	1.00

**VA** series

● DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT

WV Item μF	10			16		
	∅D×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 130°C 100kHz	∅D×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 130°C 100kHz
220						
330	8×11.5	0.22	360	8×11.5	0.22	360
470	10×12.5	0.15	620	10×12.5	0.15	620
1000	10×20	0.073	960	10×20	0.073	960
2200	12.5×25	0.040	1430	12.5×25	0.040	1430
3300	16×25	0.038	1900	16×31.5	0.034	2300
4700	16×31.5	0.034	2300	16×35.5	0.031	2550

WV Item μF	25			35		
	∅D×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 130°C 100kHz	∅D×L (mm)	Impedance (Ω)max. 20°C 100kHz	Ripple current (mA rms) 130°C 100kHz
220	8×11.5	0.22	360	10×12.5	0.15	500
330	10×12.5	0.15	620	10×16	0.10	700
470	10×20	0.10	800	10×20	0.073	800
1000	12.5×25	0.055	1100	12.5×25	0.040	1100
2200	16×31.5	0.034	2300	16×35.5	0.031	2550
3300	16×35.5	0.031	2550	18×35.5	0.028	2800