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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

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## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



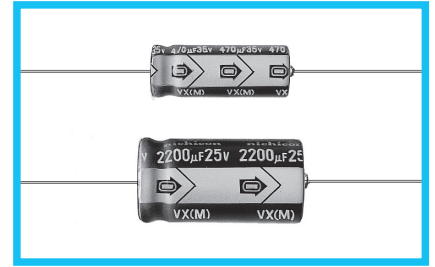
# ALUMINUM ELECTROLYTIC CAPACITORS

## TVX (02 type)

Standard, For General Purposes - Axial Lead Type



Anti-Solvent Feature  
(Through 100V only)

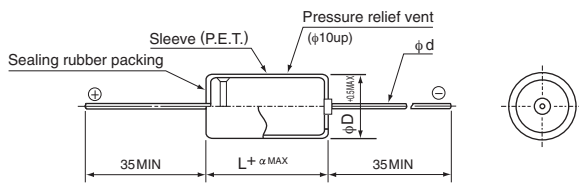


- Axial lead type of standard series for general purposes.
- Compliant to the RoHS directive (2011/65/EU).

### Specifications

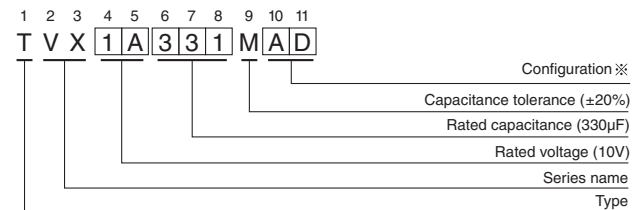
Item	Performance Characteristics		
Category Temperature Range	-40 to +85°C (6.3 to 250V), -25 to +85°C (315 to 450V)		
Rated Voltage Range	6.3 to 450V		
Rated Capacitance Range	0.47 to 10000µF		
Capacitance Tolerance	±20% at 120Hz, 20°C		
Leakage Current	Rated voltage (V)	6.3 to 100	
	Leakage current	<p>After 1 minute's application of rated voltage at 20°C, not more than 0.03CV or 4 (µA), whichever is greater.</p> <p>After 2 minutes' application of rated voltage at 20°C, not more than 0.01CV or 3 (µA), whichever is greater.</p>	
Tangent of loss angle (tan δ)	Rated voltage (V)	6.3 10 16 25 35 50 63 to 100 160 to 315 350 to 450	
	tan δ (MAX.)	0.24 0.20 0.16 0.14 0.12 0.10 0.08 0.20 0.25	
Stability at Low Temperature	Rated voltage (V)	6.3 10 16 25 35 to 100 160 to 250 315 · 350 400 · 450	
	Impedance ratio ZT / Z20 (MAX.)	<p>Z-25°C / Z+20°C: 4 3 2 2 2 4 6 15</p> <p>Z-40°C / Z+20°C: 10 8 6 4 3 12 — —</p>	
Endurance	The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 2000 hours at 85°C.	Capacitance change	Within ±20% of the initial capacitance value
		tan δ	200% or less than the initial specified value
		Leakage current	Less than or equal to the initial specified value
Shelf Life	After storing the capacitors under no load at 85°C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the characteristic requirements at right.	Capacitance change	Within ±20% of the initial capacitance value
		tan δ	200% or less than the initial specified value
		Leakage current	Less than or equal to the initial specified value
Marking	Printed with white color letter on purple blue sleeve.		

### Axial Lead Type



		(mm)	
α	(φD < 10)	1	
	(φD ≥ 10)	2	
	φD	5 to 13	16 to 18
	φd	0.6	0.8

### Type numbering system (Example : 10V 330µF)



※ Configuration

φ D	Pb-free leadwire Pb-free PET sleeve
5 to 8	AD
10 to 18	CD

Please refer to page 22 about the taped product spec.  
Please refer to page 4 for the minimum order quantity.

● Dimension table in next page.



## ■ Dimensions

Cap.(μF)	Code	V		6.3		10		16		25		35		50		63		100	
		OJ	1A	1C	1E	1V	1H	1J	2A										
0.47	R47													5 × 12	5			5 × 12	10
1	010													5 × 12	10			5 × 12	18
2.2	2R2													5 × 12	23			5 × 12	28
3.3	3R3													5 × 12	28			5 × 12	34
4.7	4R7													5 × 12	34			5 × 12	40
10	100													5 × 12	50	5 × 12	55	6.3 × 12	60
22	220									5 × 12	70	6.3 × 12	85	6.3 × 12	90	6.3 × 12	90	8 × 16	120
33	330								5 × 12	80	6.3 × 12	90	6.3 × 16	110	6.3 × 16	120	8 × 16	150	
47	470					5 × 12	85	6.3 × 12	100	6.3 × 16	120	6.3 × 16	130	8 × 16	160	8 × 20	190		
100	101	5 × 12	110	6.3 × 12	130	6.3 × 16	160	6.3 × 16	170	8 × 16	210	8 × 16	220	8 × 20	260	10 × 26	340		
220	221	6.3 × 16	200	6.3 × 16	210	8 × 16	260	8 × 16	280	8 × 20	340	10 × 21	410	10 × 26	480	13 × 26	560		
330	331	6.3 × 16	250	8 × 16	300	8 × 16	320	8 × 20	380	10 × 21	460	10 × 26	560	13 × 26	650	13 × 31.5	750		
470	471	8 × 16	330	8 × 16	350	8 × 20	430	10 × 26	510	10 × 26	610	13 × 26	730	13 × 31.5	840	16 × 31.5	970		
1000	102	10 × 21	600	10 × 21	640	10 × 26	770	13 × 26	900	13 × 31.5	1060	16 × 31.5	1260	16 × 31.5	1330				
2200	222	13 × 26	1020	13 × 26	1090	13 × 31.5	1180	16 × 31.5	1480	16 × 31.5	1580	18 × 41	1920						
3300	332	13 × 26	1200	13 × 31.5	1390	16 × 31.5	1620	16 × 41.5	1710	16 × 41.5	2050								
4700	472	16 × 31.5	1500	16 × 31.5	1730	16 × 41.5	1840	18 × 41	2170										
6800	682	16 × 31.5	1840	16 × 41.5	1930	18 × 41	2310												
10000	103	16 × 41.5	2260	18 × 41	2350														

Cap.(μF)	Code	V		160		200		250		315		350		400		450	
		2C	2D	2E	2F	2V	2G	2W									
1	010	6.3 × 12	13	6.3 × 12	13	6.3 × 16	14	6.3 × 16	14	6.3 × 16	12	8 × 16	14	8 × 16	14	8 × 16	14
2.2	2R2	6.3 × 16	23	6.3 × 16	23	8 × 16	27	8 × 16	27	8 × 16	24	8 × 20	28	10 × 21	31		
3.3	3R3	8 × 16	33	8 × 16	33	8 × 16	33	8 × 20	36	8 × 20	32	10 × 21	38	10 × 21	38		
4.7	4R7	8 × 16	39	8 × 16	39	8 × 20	45	8 × 20	45	10 × 21	46	10 × 21	46	10 × 26	50		
10	100	8 × 20	60	10 × 21	70	10 × 21	70	10 × 26	80	13 × 26	85	13 × 26	85	13 × 26	85		
22	220	10 × 26	120	13 × 26	140	13 × 26	140	13 × 31.5	150	13 × 31.5	140	16 × 31.5	150	16 × 31.5	150		
33	330	13 × 26	170	13 × 26	170	13 × 31.5	190	16 × 31.5	210	16 × 31.5	190	16 × 41.5	210	18 × 41	230		
47	470	13 × 31.5	230	13 × 31.5	230	16 × 31.5	260	16 × 31.5	260	16 × 41.5	260	18 × 41	290				
100	101	16 × 41.5	430	16 × 41.5	430	16 × 41.5	430									Case size φ D × L (mm)	Rated ripple

Rated ripple current (mArms) at 85°C 120Hz

## ● Frequency coefficient of rated ripple current

V	Cap.(μF)	Frequency			
		120 Hz	300 Hz	1kHz	10kHz or more
6.3 to 100	0.47 to 47	1.00	1.35	1.57	2.00
	100 to 470	1.00	1.23	1.34	1.50
	1000 to 10000	1.00	1.10	1.13	1.15
160 to 450	1 to 100	1.00	1.25	1.40	1.60