

ALUMINUM ELECTROLYTIC CAPACITORS

查询VRH-22VK供应商

捷多邦, 专业PCB打样工厂, 24小时加急出货

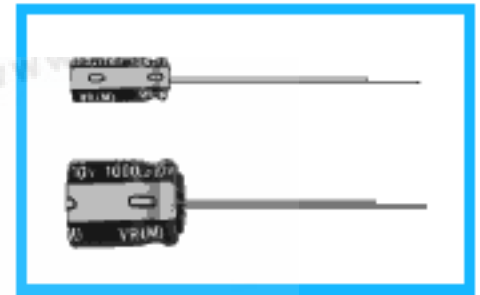
nichicon

VR Miniature Sized
series



Approved by Reliability Center for Electronic Component, Japan-Certification No. RCJ-03-22C

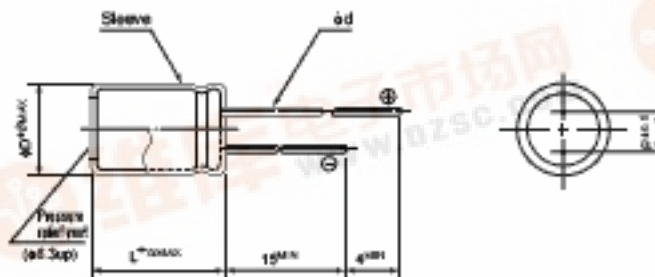
■ One rank smaller case sizes than VX series.



Specifications

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +85°C (6.3V ~ 400V), -25°C ~ +85°C (450V)	
Rated Voltage Range	6.3 ~ 450V	
Rated Capacitance Range	0.1 ~ 33000μF	
Capacitance Tolerance	±20% at 120Hz, 20°C	
Leakage Current	Rated voltage (V)	6.3 ~ 100V
	160 ~ 450V	
tan δ	After 1 minute's application of rated voltage, leakage current is not more than 0.03CV or 4 (μA), whichever is greater.	
	After 2 minutes' application of rated voltage, leakage current is not more than 0.01CV or 3 (μA), whichever is greater.	
Stability at Low Temperature	After 1 minute's application of rated voltage, CV ≤ 1000 : I = 0.1CV+40μA or less	
	After 1 minute's application of rated voltage, CV > 1000 : I = 0.04CV+100 (μA) or less	
Endurance	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.	
	Measurement frequency : 120Hz. Temperature : 20°C	
Shelf Life	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160 ~ 200 250 ~ 350 400 450
	tan δ (MAX.)	0.28 0.24 0.20 0.16 0.14 0.12 0.10 0.08 0.20 0.25
Marking	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160 ~ 200 250 ~ 350 400 450
	Impedance ratio Z _T / Z ₂₀ (MAX.)	5 4 3 2 2 2 2 2 3 4 6 15
Marking	Z _T / Z ₂₀ (MAX.)	12 10 8 5 4 3 3 3 4 8 10 —
	Capacitance change	Within ±20% of initial value
	tan δ	200% or less of initial specified value
	Leakage current	Initial specified value or less
Marking	After 2000 hours' application of rated voltage at 85°C, capacitors meet the characteristic requirements listed at right.	
	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for endurance characteristics listed above.	
Marking	Printed with white color letter on black sleeve.	

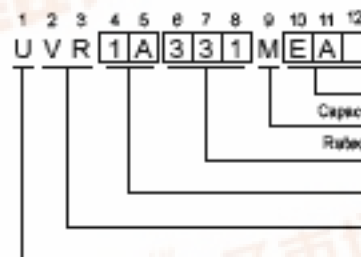
Radial Lead Type



φD	4	5	6.3	8	10	12.5	16	18	20	22	25
P	1.5	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	0.45	0.5	0.5	0.8	0.8	0.8	0.8	0.8	1.0	1.0	1.0
δ	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0

α	(L<20) 1.5 (L≥20) 2.0
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Type numbering system (Example : 10V 330μF)



Configuration	Code
Capacitance tolerance (±20%)	4 DAB
Rated Capacitance (330μF)	5 DA
Rated voltage (10V)	6.3 EA
Series name	8-10 FA
Type	12.5-18 HA 20-25 RA

Please refer to page 18, 19, 20 about the formed or taped product spec.
Please refer to page 3 for the minimum order quantity.



ALUMINUM ELECTROLYTIC CAPACITORS

nichicon

VR series

Dimensions

Dimensions		D×L (mm)															
Cap.(μF)	V Code	6.3		10		16		25		35		50		63		100	
		0J		1A		1C		1E		1V		1H		1J		2A	
0.1	0R1											+ 5×11	13			5×11	21
0.22	R22											+ 5×11	29			5×11	47
0.33	R33											+ 5×11	43			5×11	7
0.47	R47											+ 5×11	62			5×11	10
1	010											+ 5×11	17			5×11	21
2.2	2R2											+ 5×11	28			5×11	30
3.3	3R3											+ 5×11	35			5×11	40
4.7	4R7							+ 5×11	35	+ 5×11	40	+ 5×11	40			5×11	45
10	100					+ 5×11	50	+ 5×11	55	+ 5×11	60	+ 5×11	60	5×11	65	6.3×11	75
22	220	+ 5×11	65	+ 5×11	65	+ 5×11	75	+ 5×11	80	+ 5×11	90	5×11	95	5×11	100	6.3×11	130
33	330	+ 5×11	80	+ 5×11	85	+ 5×11	90	+ 5×11	95	5×11	105	5×11	125	6.3×11	140	8×11.5	180
47	470	+ 5×11	95	+ 5×11	100	+ 5×11	110	+ 5×11	115	5×11	130	6.3×11	155	6.3×11	170	10×12.5	230
100	101	+ 5×11	135	+ 5×11	145	5×11	160	6.3×11	190	6.3×11	210	8×11.5	260	10×12.5	300	10×20	370
220	221	5×11	200	6.3×11	240	6.3×11	260	8×11.5	330	10×12.5	385	10×12.5	430	10×16	490	12.5×25	620
330	331	6.3×11	270	6.3×11	290	8×11.5	370	10×12.5	440	10×12.5	490	10×16	590	10×20	710	12.5×25	760
470	471	6.3×11	320	6.3×11	350	8×11.5	440	10×12.5	550	10×16	650	12.5×20	760	12.5×20	900	16×25	1000
1000	102	8×11.5	540	10×12.5	650	10×16	790	10×20	960	12.5×20	1150	12.5×25	1350	16×25	1300	18×40	1380
2200	222	10×20	1000	10×20	1100	12.5×20	1300	12.5×25	1550	16×25	1800	16×35.5	2100	18×35.5	2300	22×50	2400
																▲25×40	2400
3300	332	10×20	1190	12.5×20	1450	12.5×25	1700	16×25	1980	16×35.5	2280	18×35.5	2500	20×40	2700	25×50	2900
												▲22×30	2450	▲25×30	2600		
4700	472	12.5×20	1550	12.5×25	1800	16×25	2100	16×31.5	2450	18×35.5	2700	20×40	2900	22×50	3400		
										▲20×31		▲25×30	2900	▲25×40	3200		
6800	682	12.5×25	1920	16×25	2250	16×35.5	2650	18×35.5	2900	20×40	3000	22×50	3500	25×50	3800		
								▲20×31	2700	▲25×30	2900	▲25×40	3300				
10000	103	16×25	2350	16×35.5	2700	18×35.5	2950	20×40	3000	22×50	3700	25×50	4000				
						▲20×31	3000	▲25×30	2900	▲25×40	3600						
15000	153	16×35.5	2850	18×35.5	3100	20×40	3400	22×50	3800	25×50	4300						
						▲25×30	3300	▲25×40	3600								
22000	223	18×40	3350	20×40	3700	22×50	4200	25×50	4500								
		▲22×30	3200	▲25×30	3300	▲25×40	4000										
33000	333	22×50	3900	22×50	4500	25×50	4800									Case size	Rated ripple
		▲25×40	3800	▲25×40	4800												

Cap. (μF)	V Code	160		200		250		315		360		400		450	
		2C		2D		2E		2F		2V		2G		2W	
0.47	R47	6.3 × 11	15	6.3 × 11	15	6.3 × 11	15								
1	010	6.3 × 11	22	6.3 × 11	22	6.3 × 11	22	6.3 × 11	22	6.3 × 11	22	8 × 11.5	25	8 × 11.5	23
2.2	2R2	6.3 × 11	33	6.3 × 11	33	6.3 × 11	33	8 × 11.5	33	8 × 11.5	38	10 × 12.5	45	10 × 12.5	35
3.3	3R3	6.3 × 11	40	6.3 × 11	40	8 × 11.5	46	10 × 12.5	55	10 × 12.5	55	10 × 12.5	55	10 × 16	45
4.7	4R7	6.3 × 11	50	8 × 11.5	55	8 × 11.5	55	10 × 12.5	65	10 × 12.5	65	10 × 16	70	10 × 20	55
10	100	8 × 11.5	80	10 × 12.5	95	10 × 16	105	10 × 20	115	10 × 20	115	12.5 × 20	130	12.5 × 20	90
22	220	10 × 16	155	10 × 20	170	12.5 × 20	190	12.5 × 20	190	12.5 × 25	200	16 × 25	240	16 × 25	165
33	330	10 × 20	205	12.5 × 20	230	12.5 × 20	230	16 × 25	275	16 × 25	275	16 × 31.5	300	16 × 35.5	230
47	470	12.5 × 20	270	12.5 × 20	270	12.5 × 25	300	16 × 25	340	16 × 35.5	380	16 × 35.5	370	18 × 40	300
												▲ 22 × 30	290		
100	101	12.5 × 25	430	16 × 31.5	530	16 × 31.5	520	18 × 35.5	560	18 × 40	590	20 × 40	560	22 × 40	350
										▲ 22 × 30	570	▲ 25 × 30	530		
220	221	16 × 35.5	800	18 × 35.5	810	20 × 40	740	22 × 50	850	22 × 50	850	25 × 50	750		
						▲ 22 × 30	820	▲ 25 × 30	770	▲ 25 × 40	890				
330	331	18 × 40	940	20 × 40	1130	22 × 50	1170	25 × 50	1250						
		▲ 22 × 30	900	▲ 25 × 30	1090	▲ 25 × 30	970								
470	471	22 × 40	1410	22 × 50	1490	25 × 50	1600								
		▲ 25 × 30	1290	▲ 25 × 40	1550										
1000	102	25 × 50	1900												

Size 4×11 is available for capacitors marked "▲".

In this case, [E] will be put at 12th digit of type numbering system "▲".

Rated Ripple (mA rms) at 85°C 120Hz

Frequency coefficient of rated ripple current

V	Cap. (μF)	Frequency	50Hz	120Hz	300Hz	1 kHz	10kHz ~
6.3 ~ 100	~ 47	~ 47	0.75	1.00	1.35	1.57	2.00
		100 ~ 470	0.60	1.00	1.23	1.34	1.50
		1000 ~ 33000	0.65	1.00	1.10	1.13	1.15
160 ~ 450	0.47 ~ 220	0.47 ~ 220	0.60	1.00	1.25	1.40	1.60
		330 ~ 1000	0.60	1.00	1.10	1.13	1.15