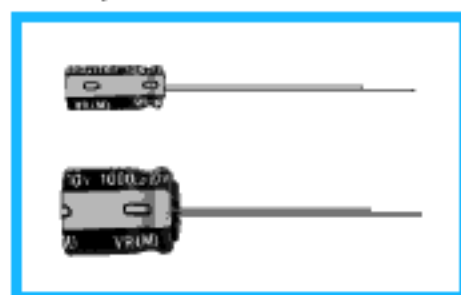


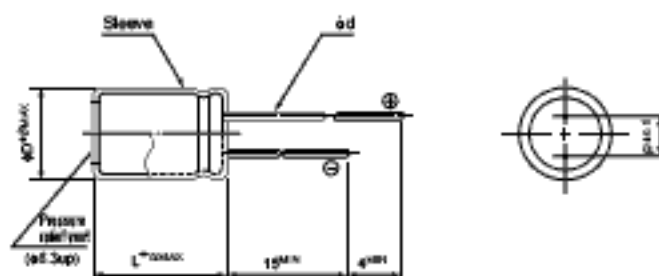
VR Miniature Sized
series


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

■ One rank smaller case sizes than VX series.


Specifications

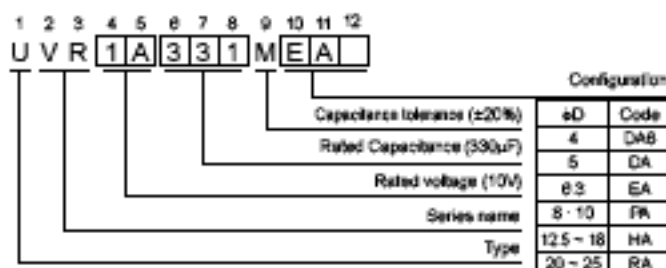
Item	Performance Characteristics	
Category Temperature Range	-40 ~ +85°C (6.3V ~ 400V), -25°C ~ +85°C (450V)	
Rated Voltage Range	6.3 ~ 450V	
Rated Capacitance Range	0.1 ~ 33000μF	
Capacitance Tolerance	±20% at 120Hz, 20°C	
Leakage Current	Rated voltage (V)	6.3 ~ 100V
	After 1 minute's application of 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.	160 ~ 450V 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
tan δ	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz. Temperature : 20°C	
	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160 ~ 315 350 ~ 450
Stability at Low Temperature	Measurement frequency : 120Hz	
	Impedance ratio Z-25°C / Z+20°C	5 4 3 2 2 2 2 2 3 4 6 15
Endurance	After 2000 hours' application of rated voltage at 85°C, capacitors meet the characteristic requirements listed at right.	
	Capacitance change	Within ±20% of initial value
Shelf Life	After leaving capacitors under no load at 85°C for 1000 hours, they meet the specified value for endurance characteristics listed above.	
	tan δ	200% or less of initial specified value
Marking	Printed with white color letter on black sleeve.	
	Leakage current	Initial specified value or less

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	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0
φ	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 DA8
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.

■ Dimension table in next page.

■ Dimensions

D×L (mm)

V	6.3	10	16	25	35	50	63	100
Cap.(μF)	DJ	1A	1C	1E	1V	1H	1J	2A
0.1	0R1					+ 5 × 11	13	5 × 11
0.22	R22					+ 5 × 11	29	5 × 11
0.33	R33					+ 5 × 11	43	5 × 11
0.47	R47					+ 5 × 11	62	5 × 11
1	010					+ 5 × 11	17	5 × 11
2.2	2R2					+ 5 × 11	28	5 × 11
3.3	3R3					+ 5 × 11	35	5 × 11
4.7	4R7			+ 5 × 11	35	+ 5 × 11	40	5 × 11
10	100		+ 5 × 11	50	+ 5 × 11	55	+ 5 × 11	60
22	220	+ 5 × 11	65	+ 5 × 11	75	+ 5 × 11	80	+ 5 × 11
33	330	+ 5 × 11	80	+ 5 × 11	95	+ 5 × 11	105	+ 5 × 11
47	470	+ 5 × 11	95	+ 5 × 11	110	+ 5 × 11	115	+ 5 × 11
100	101	+ 5 × 11	135	+ 5 × 11	145	+ 5 × 11	160	+ 5 × 11
220	221	5 × 11	200	6.3 × 11	240	6.3 × 11	260	8 × 11.5
330	331	6.3 × 11	270	6.3 × 11	290	8 × 11.5	370	10 × 12.5
470	471	6.3 × 11	320	6.3 × 11	350	8 × 11.5	440	10 × 12.5
1000	102	8 × 11.5	540	10 × 12.5	650	10 × 16	790	10 × 20
2200	222	10 × 20	1000	10 × 20	1100	12.5 × 20	1300	12.5 × 25
3300	332	10 × 20	1190	12.5 × 20	1450	12.5 × 25	1700	16 × 25
4700	472	12.5 × 20	1590	12.5 × 25	1800	16 × 25	2100	16 × 31.5
6800	682	12.5 × 25	1920	16 × 25	2250	16 × 35.5	2650	18 × 35.5
10000	103	16 × 25	2360	16 × 35.5	2700	20 × 40	3000	22 × 50
15000	153	16 × 35.5	2850	18 × 35.5	3100	20 × 40	3400	22 × 50
22000	223	18 × 40	3350	20 × 40	3700	22 × 50	4200	25 × 50
33000	333	22 × 50	3900	22 × 50	4500	25 × 50	4800	25 × 50

V	160	200	250	316	360	400	450
Cap.(μF)	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
2.2	2R2	6.3 × 11	33	6.3 × 11	33	8 × 11.5	33
3.3	3R3	6.3 × 11	40	6.3 × 11	40	8 × 11.5	33
4.7	4R7	6.3 × 11	50	8 × 11.5	55	8 × 11.5	33
10	100	8 × 11.5	80	10 × 12.5	95	10 × 12.5	55
22	220	10 × 16	155	10 × 20	170	10 × 16	70
33	330	10 × 20	205	12.5 × 20	230	12.5 × 20	90
47	470	12.5 × 20	270	12.5 × 20	270	12.5 × 20	90
100	101	12.5 × 25	430	16 × 31.5	530	16 × 31.5	530
220	221	16 × 35.5	800	18 × 35.5	810	18 × 35.5	810
330	331	18 × 40	940	20 × 40	1130	20 × 40	1130
470	471	22 × 40	1410	22 × 50	1490	22 × 50	1490
1000	102	25 × 50	1900	25 × 50	1900	25 × 50	1900

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

Rated Ripple (mA rms) at 85°C 120Hz

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

■ Frequency coefficient of rated ripple current

V	Cap.(μF)	50Hz	120Hz	300Hz	1 kHz	10kHz ~
6.3 ~ 100	~ 47	0.75	1.00	1.35	1.57	2.00
	100 ~ 470	0.80	1.00	1.23	1.34	1.50
	1000 ~ 33000	0.85	1.00	1.10	1.13	1.15
160 ~ 450	0.47 ~ 220	0.80	1.00	1.25	1.40	1.60
	330 ~ 1000	0.90	1.00	1.10	1.13	1.15