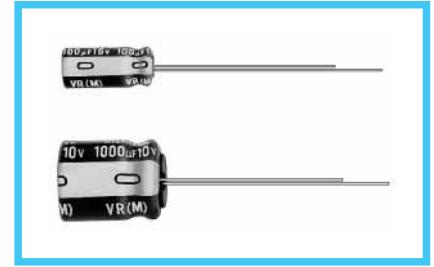
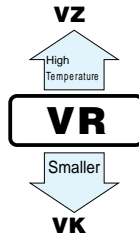


**VR** Miniature Sized series



Anti-Solvent Feature (Through 100V only)

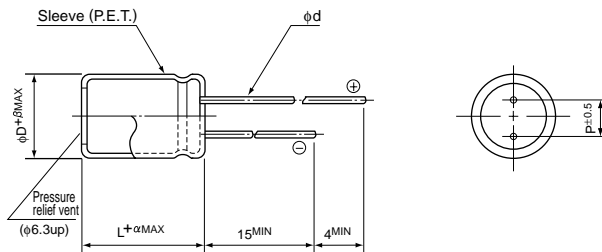
- One rank smaller case sizes than VX series.
- Adapted to the RoHS directive (2002/95/EC).



## Specifications

Item	Performance Characteristics	
Category Temperature Range	-40 ~ +85°C (6.3V ~ 400V), -25 ~ +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	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF.	
	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160 ~ 315 350 ~ 450
Stability at Low Temperature	Measurement frequency : 120Hz, Temperature : 20°C	
	Impedance ratio	Z-25°C / Z+20°C
	ZT / Z20 (MAX.)	Z-40°C / Z+20°C
Endurance	After 2000 hours' application of rated voltage at 85°C, capacitors meet the characteristic requirements listed at right.	
	Capacitance change	tan δ
	Leakage current	
Shelf Life	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.	

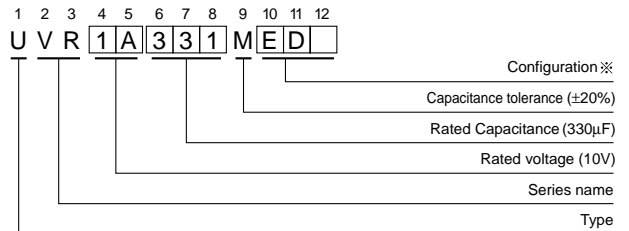
## Radial Lead Type



	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	0.6	0.6	0.6	0.8	0.8	1.0	1.0	1.0	
β	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

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



φ D	Pb-free leadwire Pb-free PET sleeve
4	DD6
5	DD
6.3	ED
8 - 10	PD
12.5 ~ 18	HD
20 ~ 25	RD

Please refer to page 21, 22, 23 about the formed or taped product spec.  
Please refer to page 3 for the minimum order quantity.

● Dimension table in next page.



## ■ Dimensions

V Cap.(μF) Code		φ D×L (mm)															
		6.3 0J		10 1A		16 1C		25 1E		35 1V		50 1H		63 1J		100 2A	
0.1	0R1											• 5×11	13			5×11	21
0.22	R22											• 5×11	2.9			5×11	4.7
0.33	R33											• 5×11	4.3			5×11	7
0.47	R47											• 5×11	6.2			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
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
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		
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	3900		
10000	103	16×25	2350	16×35.5	2700	18×35.5	2950	20×40	3000	22×50	3700	25×50	4000				
15000	153	16×35.5	2850	18×35.5	3100	20×40	3400	22×50	3800	25×50	4300						
22000	223	18×40	3350	20×40	3700	22×50	4200	25×50	4500								
33000	333	22×50	3900	22×50	4500	25×50	4800									Case size	Rated ripple

V Cap.(μF) Code		φ D×L (mm)															
		160 2C		200 2D		250 2E		315 2F		350 2V		400 2G		450 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		
100	101	12.5×25	430	16×31.5	530	16×31.5	520	18×35.5	560	18×40	590	20×40	550	22×40	350		
220	221	16×35.5	800	18×35.5	810	20×40	740	22×50	850	22×50	850	25×50	750				
330	331	18×40	940	20×40	1130	22×50	1170	25×50	1250	22×50	890						
470	471	22×40	1410	22×50	1490	25×50	1600									Case size	Rated ripple
1000	102	25×50	1900														

Size 4×11 is available for capacitors marked "•"

Rated Ripple (mA rms) at 85°C 120Hz

In this case, [6] will be put at 12th digit of type numbering system "▲"

## ● Frequency coefficient of rated ripple current

V	Cap.(μF)	Frequency				
		~ 47	50Hz	120Hz	300Hz	1 kHz
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