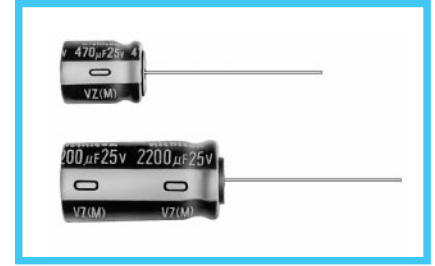
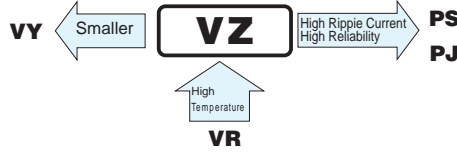


## VZ series Wide Temperature Range



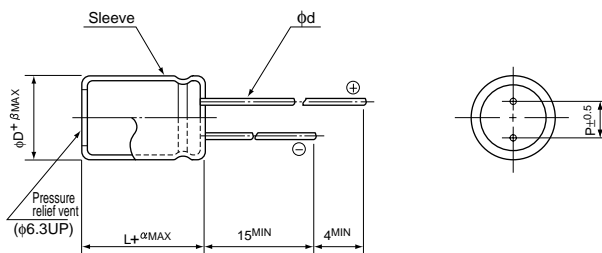
- Small case sizes as same as VR series, but operating over wide temperature range of -55 ~ +105°C.



### Specifications

Item	Performance Characteristics	
Category Temperature Range	-55 ~ +105°C (6.3 ~ 100V), -40 ~ +105°C (160 ~ 400V), -25 ~ +105°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 ~ 100
		160 ~ 450
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 ~ 200 250 ~ 350 400 450
Stability at Low Temperature	Measurement frequency : 120Hz	
	Rated voltage (V)	6.3 10 16 25 35 50 63 100 160 ~ 200 250 ~ 350 400 450
Endurance	After 1000 hours' application of rated voltage at 105°C, capacitors meet the characteristic requirements listed at right.	
	Capacitance change	tan δ
Shelf Life	After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for endurance characteristics listed above.	
	Printed with white color letter on black sleeve.	

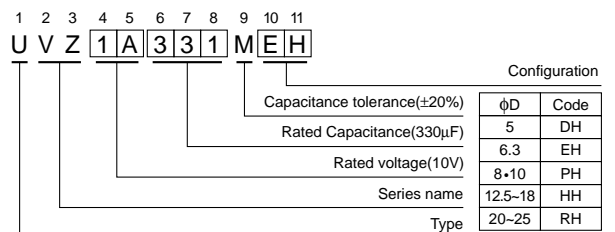
### Radial Lead Type



φD	5	6.3	8	10	12.5	16	18	20	22	25
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5	10.0	10.0	12.5
φd	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	1.0	1.0

α	(L < 20)	(L ≥ 20)
	1.5	2.0

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



- The PET sleeve product is also available upon request. In this case, [T] will be put at 11th digit of type numbering system.

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

DxL (mm)

Cap. (μF)	V	Code	6.3		10		16		25		35		50		
			0J		1A		1C		1E		1V		1H		
0.1	0R1												5×11	13	
0.22	R22												5×11	29	
0.33	R33												5×11	43	
0.47	R47												5×11	7	
1	010												5×11	13	
2.2	2R2												5×11	20	
3.3	3R3												5×11	25	
4.7	4R7								5×11	25	5×11	28	5×11	30	
10	100							5×11	35	5×11	36	5×11	41	5×11	46
22	220	5×11	45	5×11	45	5×11	54	5×11	58	5×11	61	5×11	61	5×11	68
33	330	5×11	55	5×11	58	5×11	65	5×11	68	5×11	75	5×11	75	5×11	90
47	470	5×11	65	5×11	68	5×11	79	5×11	83	5×11	93	5×11	93	6.3×11	115
100	101	5×11	95	5×11	105	5×11	115	6.3×11	140	6.3×11	150	8×11.5	150	8×11.5	190
220	221	5×11	145	6.3×11	175	6.3×11	190	8×11.5	240	10×12.5	275	10×12.5	275	10×12.5	300
330	331	6.3×11	195	6.3×11	210	8×11.5	265	10×12.5	315	10×12.5	350	10×16	350	10×16	410
470	471	6.3×11	230	6.3×11	250	8×11.5	315	10×12.5	380	10×16	460	12.5×20	460	12.5×20	530
1000	102	8×11.5	390	10×12.5	460	10×16	560	10×20	680	12.5×20	810	12.5×25	810	12.5×25	950
2200	222	10×20	710	10×20	760	12.5×20	920	12.5×25	1090	16×25	1260	16×35.5	1260	16×35.5	1470
3300	332	10×20	840	12.5×20	1000	12.5×25	1170	16×25	1400	16×35.5	1610	18×35.5	1610	18×35.5	1770
4700	472	12.5×20	1090	12.5×25	1260	16×25	1480	16×31.5	1710	18×35.5	1910	20×40	1910	20×40	2100
6800	682	12.5×25	1350	16×25	1570	16×35.5	1780	18×35.5	2040	20×40	2150	22×50	2150	22×50	2500
10000	103	16×25	1650	16×35.5	1890	18×35.5	2060	20×40	2150	22×50	2650	25×50	2650	25×50	2850
15000	153	16×35.5	2010	18×35.5	2180	20×40	2430	22×50	2750	25×50	3100				
22000	223	18×40	2350	20×40	2650	22×50	3000	25×50	3250						
33000	333	22×50	2800	22×50	3250	25×50	3450								
														Case size	Rated ripple

Cap. (μF)	V	Code	63		100		160		200		250		315		350		400		450			
			1J		2A		2C		2D		2E		2F		2V		2G		2W			
0.1	0R1			5×11	1.5																	
0.22	R22			5×11	3.4																	
0.33	R33			5×11	5.0																	
0.47	R47			5×11	7.1	6.3×11	11	6.3×11	11	6.3×11	10											
1	010			5×11	15	6.3×11	16	6.3×11	16	6.3×11	15	6.3×11	15	6.3×11	15	8×11.5	17	8×11.5	13			
2.2	2R2			5×11	21	6.3×11	25	6.3×11	25	6.3×11	23	8×11.5	26	8×11.5	26	10×12.5	30	10×12.5	23			
3.3	3R3			5×11	29	6.3×11	30	6.3×11	30	8×11.5	32	10×12.5	38	10×12.5	38	10×12.5	38	10×16	31			
4.7	4R7			5×11	32	6.3×11	34	8×11.5	39	8×11.5	39	10×12.5	45	10×12.5	45	10×16	50	10×20	40			
10	100	5×11	46	6.3×11	54	8×11.5	41	10×12.5	65	10×16	74	10×20	80	10×20	80	12.5×20	90	12.5×20	65			
22	220	5×11	71	6.3×11	93	10×16	100	10×20	120	12.5×20	130	12.5×20	115	12.5×25	115	16×25	165	16×25	115			
33	330	6.3×11	100	8×11.5	130	10×20	145	12.5×20	160	12.5×20	160	16×25	195	16×25	195	16×31.5	215	16×35.5	165			
47	470	6.3×11	120	10×12.5	165	12.5×20	195	12.5×20	195	12.5×25	210	16×25	230	16×35.5	270	16×35.5	270	18×40	185			
100	101	10×12.5	215	10×20	265	12.5×25	215	16×31.5	375	16×31.5	365	18×35.5	395	18×40	420	20×40	450	22×40	270			
220	221	10×16	335	12.5×25	440	16×35.5	570	18×35.5	575	20×40	600	22×50	620	22×50	620	25×50	660					
330	331	10×20	510	12.5×25	540	18×40	750	20×40	705	22×50	730	25×50	760									
470	471	12.5×20	640	16×25	715	22×40	900	22×50	840	25×50	870											
1000	102	16×25	930	18×40	985	25×50	1310															
2200	222	18×35.5	1650	22×50	1750																	
3300	332	20×40	1950	25×50	2070																	
4700	472	22×50	2450																			
6800	682	25×50	2800																			
																					Case size	Rated ripple

Rated Ripple (mA rms) at 105°C 120Hz

## ■ Frequency coefficient of rated ripple current

V	Cap. (μF)	Frequency				
		50Hz	120Hz	300Hz	1 kHz	10 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