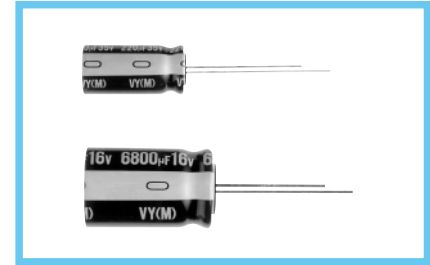
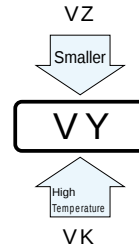


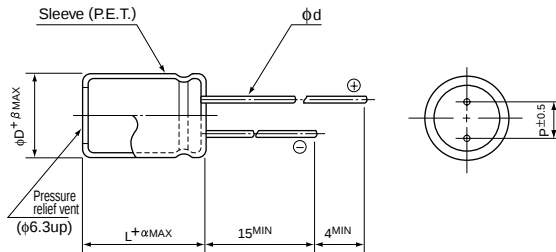
- One rank smaller case sizes than VZ series.
- Adapted to the RoHS directive (2002/95/EC).



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 ~ 68000μF											
Capacitance Tolerance	±20% at 120Hz, 20°C											
Leakage Current	Rated voltage (V)	6.3 ~ 100					160 ~ 450					
	_____	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.					After 1 minute's application of rated voltage, CV ≤ 1000: I =0.1CV+40 (μA) 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 ~ 250	350 ~ 450	
	tan δ (MAX.)	0.28	0.24	0.20	0.16	0.14	0.12	0.10	0.08	0.20	0.25	
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
	Impedance ratio	Z-25°C / Z+20°C	5	4	3	2	2	2	3	4	6	15
	ZT / Z20 (MAX.)	Z-40°C / Z+20°C	10	8	6	4	3	3	4	8	10	—
Endurance	After 1000 hours' application of rated voltage at 105°C, capacitors meet the characteristic requirements listed at right.					Capacitance change		Within ±20% of initial value				
						tan δ		200% or less of initial specified value				
						Leakage current		Initial specified value or less				
Shelf Life	After storing the capacitors under no load at 105°C for 1000 hours, and after performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they will meet the specified value for endurance characteristics listed above.											
Marking	Printed with white color letter on black sleeve.											

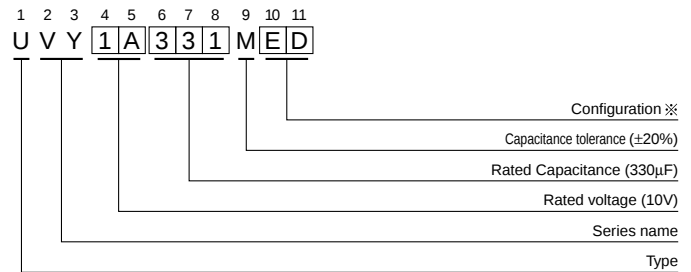
Radial Lead Type



	5	6.3	8	10	12.5	16	18	20	22	25
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) 1.5
	(L ≥ 20) 2.0

Type numbering system (Example : 10V 330µF)



※ Configuration

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

- Please refer to page 21 about the end seal configuration.

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		6.3		10		16		25		35		50		63	
Cap.(μF)	Code	0J		1A		1C		1E		1V		1H		1J	
0.1	0R1											5 × 11	1.3		
0.22	R22											5 × 11	2.9		
0.33	R33											5 × 11	4.3		
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	30		
10	100											5 × 11	46		
22	220											5 × 11	68	5 × 11	71
33	330											5 × 11	90	6.3 × 11	100
47	470									5 × 11	93	6.3 × 11	115	6.3 × 11	120
68	680									6.3 × 11	110	6.3 × 11	150	8 × 11.5	155
100	101							5 × 11	125	6.3 × 11	150	8 × 11.5	190	8 × 11.5	200
220	221			5 × 11	155	6.3 × 11	190	6.3 × 11	200	8 × 11.5	250	10 × 12.5	300	10 × 16	335
330	331			6.3 × 11	210	6.3 × 11	225	8 × 11.5	275	10 × 12.5	350	10 × 16	410	10 × 20	510
470	471			6.3 × 11	250	8 × 11.5	315	10 × 12.5	380	10 × 16	460	10 × 20	540	12.5 × 20	640
1000	102	8 × 11.5	390	10 × 12.5	460	10 × 12.5	500	10 × 16	610	12.5 × 20	810	12.5 × 25	950	16 × 25	930
2200	222	10 × 16	635	10 × 16	705	10 × 20	710	12.5 × 25	1090	16 × 25	1260	16 × 31.5	1410	18 × 35.5	1650
3300	332	10 × 20	840	12.5 × 20	1000	12.5 × 25	1170	16 × 25	1400	16 × 31.5	1500	18 × 35.5	1770	20 × 40	1950
4700	472	12.5 × 20	1090	12.5 × 25	1260	16 × 25	1500	16 × 25	1570	16 × 35.5	1780	20 × 40	2100	22 × 50	2450
6800	682	12.5 × 25	1350	16 × 25	1570	16 × 25	1600	16 × 35.5	1850	18 × 40	2000	22 × 50	2500	25 × 50	2800
10000	103	16 × 25	1650	16 × 31.5	1820	16 × 35.5	1930	18 × 40	2000	22 × 50	2650	25 × 50	2850		
15000	153	16 × 31.5	1820	16 × 35.5	2050	18 × 40	2210	22 × 50	2750	25 × 50	3100				
22000	223	18 × 35.5	2280	18 × 40	2420	22 × 40	2710	25 × 50	3250						
33000	333	20 × 40	2500	22 × 50	3210	25 × 50	3450								
47000	473	22 × 50	2780	25 × 50	3570										
68000	683	25 × 50	3070											Case size φ D × L (mm)	Rated ripple

V		100		160		200		250		350		400		450	
Cap.(μF)	Code	2A		2C		2D		2E		2V		2G		2W	
0.1	0R1	5 × 11	1.5			6.3 × 11	1.5								
0.22	R22	5 × 11	3.4			6.3 × 11	3.3								
0.33	R33	5 × 11	5.0			6.3 × 11	5								
0.47	R47	5 × 11	7.1			6.3 × 11	11					6.3 × 11	8.5		
1	010	5 × 11	15			6.3 × 11	16					6.3 × 11	14		
2.2	2R2	5 × 11	21			6.3 × 11	25			6.3 × 11	21	8 × 11.5	27	8 × 11.5	20
3.3	3R3	5 × 11	29			6.3 × 11	30	6.3 × 11	28	8 × 11.5	30	8 × 11.5	34	10 × 12.5	28
4.7	4R7	5 × 11	32			6.3 × 11	35	6.3 × 11	35	8 × 11.5	39	10 × 12.5	42	10 × 12.5	32
10	100	5 × 11	50	8 × 11.5	41	8 × 11.5	57	10 × 12.5	71	10 × 12.5	64	10 × 16	64	10 × 20	27
22	220	6.3 × 11	93	10 × 12.5	92	10 × 16	105	10 × 20	105	12.5 × 20	105	12.5 × 25	140	12.5 × 25	100
33	330	8 × 11.5	130	10 × 16	125	10 × 20	140	10 × 20	140	12.5 × 25	170	16 × 25	170	16 × 25	125
47	470	8 × 11.5	140	10 × 20	150	12.5 × 20	195	12.5 × 20	190	16 × 25	210	16 × 25	200	16 × 31.5	155
68	680	10 × 12.5	190	12.5 × 20	250	12.5 × 25	250	16 × 25	270	16 × 25	285	16 × 31.5	240	18 × 35.5	185
100	101	10 × 16	240	12.5 × 25	310	16 × 25	320	16 × 25	310	18 × 35.5	370	18 × 35.5	310	18 × 40	200
220	221	12.5 × 20	390	16 × 31.5	410	16 × 35.5	500	18 × 35.5	485	22 × 50	540	22 × 50	460	25 × 50	250
330	331	12.5 × 25	540	18 × 35.5	570	18 × 40	675	20 × 40	710	25 × 50	710				
470	471	16 × 25	715	18 × 40	855	22 × 40	925	22 × 50	1000						
1000	102	18 × 35.5	960	25 × 50	1350										
2200	222	22 × 50	1750												
3300	332	25 × 50	2070											Case size φ D × L (mm)	Rated ripple

Rated Ripple (mArms) at 105°C 120Hz

● Frequency coefficient of rated ripple current

V	Cap.(μF)	Frequency	50Hz	120Hz	300Hz	1 kHz	10 kHz ~
6.3 ~ 100	~ 68	~ 68	0.75	1.00	1.35	1.57	2.00
		100 ~ 470	0.80	1.00	1.23	1.34	1.50
		1000 ~ 68000	0.85	1.00	1.10	1.13	1.15
160 ~ 450	0.1 ~ 220	0.1 ~ 220	0.80	1.00	1.25	1.40	1.60
		330 ~ 1000	0.90	1.00	1.10	1.13	1.15