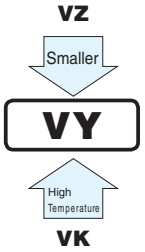
ALUMINUM ELECTROLYTIC CAPACITORS

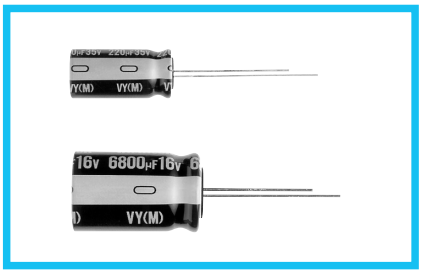
nichicon

VY Wide Temperature Range series

Smaller | Anti-Solvent Feature (Through 100V only)

- One rank smaller case sizes than VZ series.
- Compliant to the RoHS directive (2011/65/EU).





■Specifications

Item	Performance Characteristics
Category Temperature Range	−55 to +105˚C (6.3 to 100V), −40 to +105˚C (160 to 400V), −25 to +105˚C (450V)
Rated Voltage Range	6.3 to 450V
Rated Capacitance Range	0.1 to 68000μF
Capacitance Tolerance	±20% at 120Hz, 20˚C
Leakage Current	Rated voltage (V) | 6.3 to 100: After 1 minute's application of rated voltage at 20°C, leakage current is not more than 0.03CV or 4 (μA), whichever is greater. After 2 minutes' application of rated voltage at 20°C, leakage current is not more than 0.01CV or 3 (μA), whichever is greater. | 160 to 450: After 1 minute's application of rated voltage at 20°C, CV ≦ 1000 : I =0.1CV+40 (μA) or less; After 1 minute's application of rated voltage at 20°C, CV > 1000 : I =0.04CV+100 (μA) or less
Tangent of loss angle (tan δ)	For capacitance of more than 1000μF, add 0.02 for every increase of 1000μF. Measurement frequency : 120Hz at 20˚C

Rated voltage (V)	6.3	10	16	25	35	50	63	100	160 to 250	350 to 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 to 50	63 to 100	160 to 200	250 to 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	—

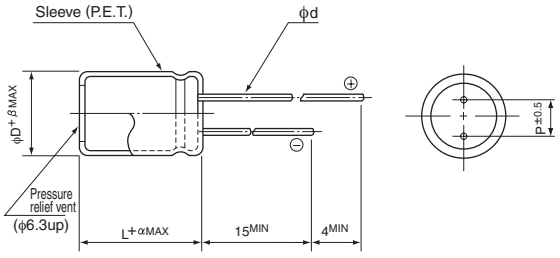
Endurance — The specifications listed at right shall be met when the capacitors are restored to 20°C after the rated voltage is applied for 1000 hours at 105°C.

Capacitance change	Within ±20% of the initial capacitance value
tan δ	200% or less than the initial specified value
Leakage current	Less than or equal to the initial specified value

Shelf Life — After storing the capacitors under no load at 105˚C for 1000 hours and then performing voltage treatment based on JIS C 5101-4 clause 4.1 at 20°C, they shall meet the specified values for the endurance characteristics listed above.

Marking — Printed with white color letter on black sleeve.

■Radial Lead Type



(mm)

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

• Please refer to page 20 about the end seal configuration.

Type numbering system (Example : 10V 330μF)

1	2	3	4	5	6	7	8	9	10	11
U	V	Y	1	A	3	3	1	M	E	D

Configuration ※
Capacitance tolerance (±20%)
Rated capacitance (330μF)
Rated voltage (10V)
Series name
Type

※ Configuration

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

Please refer to page 20, 21, 22 about the formed or taped product spec.
Please refer to page 4 for the minimum order quantity.

●Dimension table in next page.

VY series

■Dimensions

Cap.(μF) \ V	6.3		10		16		25		35		50		63	
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									Case size φD×L (mm)	Rated ripple
68000	683	25 × 50	3070												

Cap.(μF) \ V	100		160		200		250		350		400		450	
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	56
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											Case size φD×L (mm)	Rated ripple
3300	332	25 × 50	2070												

Rated ripple current (mArms) at 105˚C 120Hz

● Frequency coefficient of rated ripple current

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