

### FEATURES

- 105°C, 2000 ~ 5000 hours assured
- Ultra Low Impedance Capacitors
- RoHS Compliant



### SPECIFICATIONS

Items	Performance																																								
Operating Temperature Range	6.3 ~ 63V	80 ~ 100V																																							
	-55°C ~ +105°C	-40°C ~ +105°C																																							
Capacitance Tolerance	± 20% (at 120 Hz, 20°C)																																								
Leakage Current at 20°C	I = 0.01CV or 3 (µA) whichever is greater (after 2 minutes) Where, C= rated capacitance in µF, V= rated DC working voltage in V																																								
Dissipation Factor (Tan δ) at 120Hz, 20°C	<table border="1"> <thead> <tr> <th>Rated Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td>Tan δ (max)</td> <td>0.30</td> <td>0.26</td> <td>0.22</td> <td>0.16</td> <td>0.13</td> <td>0.10</td> <td>0.08</td> <td>0.08</td> <td>0.07</td> </tr> </tbody> </table>										Rated Voltage	6.3	10	16	25	35	50	63	80	100	Tan δ (max)	0.30	0.26	0.22	0.16	0.13	0.10	0.08	0.08	0.07											
	Rated Voltage	6.3	10	16	25	35	50	63	80	100																															
Tan δ (max)	0.30	0.26	0.22	0.16	0.13	0.10	0.08	0.08	0.07																																
when the capacitance exceeds 1,000µF, 0.02 should be added every 1,000µF increase.																																									
Low Temperature Characteristics at 120Hz	Impedance ratio shall not exceed the values given in the table below .																																								
	<table border="1"> <thead> <tr> <th colspan="2">Rated Voltage</th> <th>6.3</th> <th>10</th> <th>16</th> <th>25</th> <th>35</th> <th>50</th> <th>63</th> <th>80</th> <th>100</th> </tr> </thead> <tbody> <tr> <td rowspan="2">Impedance Ratio</td> <td>Z(-25°C)/Z(+20°C)</td> <td>4</td> <td>3</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> <td>2</td> </tr> <tr> <td>Z(-40°C)/Z(+20°C)</td> <td>8</td> <td>5</td> <td>4</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> <td>3</td> </tr> </tbody> </table>										Rated Voltage		6.3	10	16	25	35	50	63	80	100	Impedance Ratio	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2	Z(-40°C)/Z(+20°C)	8	5	4	3	3	3	3	3
Rated Voltage		6.3	10	16	25	35	50	63	80	100																															
Impedance Ratio	Z(-25°C)/Z(+20°C)	4	3	2	2	2	2	2	2	2																															
	Z(-40°C)/Z(+20°C)	8	5	4	3	3	3	3	3	3																															
Load Life Test	Test Time	2,000 Hrs for 4Ø ~ 6.3Ø, 8Øx6.5L & 10Øx7.7L					5,000 Hrs for ØD ≥ 8mm																																		
	Capacitance Change	Within ±25% of initial value					Within ±25% of initial value																																		
	Dissipation Factor	Less than 200% of specified value					Less than 200% of specified value																																		
	Leakage Current	Within specified value					Within specified value																																		
* The above specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage applied for 2,000 ~ 5,000 hrs at 105°C																																									
Shelf Life Test	Test Time: 1000 hrs; other items are the same as those for the load life test																																								
Ripple Current & Frequency Multipliers	Frequency (Hz)		50, 60	120	1K	10K up																																			
	Multiplier		0.60	0.7	0.85	1																																			

### PAD SPACING AND DIAMETER

Unit: mm

Ø D	L	A	B	C	W	P ± 0.2	Fig. No.
4	5.7 ± 0.3	4.3	4.3	5.1	0.5 ~ 0.8	1.0	1
5	5.7 ± 0.3	5.3	5.3	5.9	0.5 ~ 0.8	1.5	1
6.3	5.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
6.3	7.7 ± 0.3	6.6	6.6	7.2	0.5 ~ 0.8	2.0	1
8	6.5 ± 0.3	8.3	8.3	9.0	0.5 ~ 0.8	2.3	1
8	10 ± 0.5	8.3	8.3	9.0	0.7 ~ 1.1	3.1	1
10	7.7 ± 0.3	10.3	10.3	11.0	0.7 ~ 1.3	4.7	1
10	10 ± 0.5	10.3	10.3	11.0	0.7 ~ 1.3	4.7	1
12.5	13.5 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
12.5	16 ± 0.5	13.0	13.0	13.7	1.1 ~ 1.4	4.4	2
16	16.5 ± 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4	2
16	21.5 ± 0.5	17.0	17.0	18.0	1.1 ~ 1.4	6.4	2
18	16.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2
18	21.5 ± 0.5	19.0	19.0	20.0	1.1 ~ 1.4	6.4	2

Figure 1

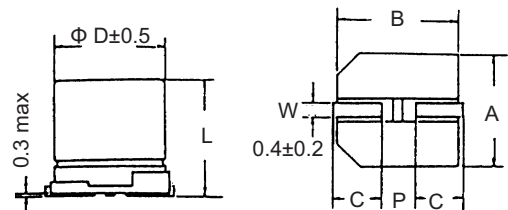
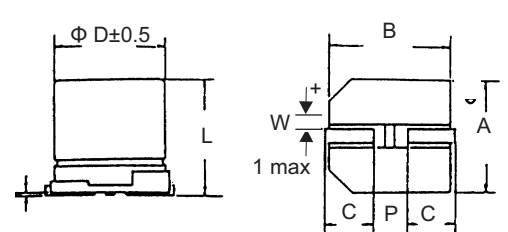


Figure 2



### PART NUMBER EXAMPLE

**VZH**    **101**    **M**    **1V**    **TR**    **080100**

Series    Capacitance Code    Tolerance Code    Voltage Code    Package Style    Can Size (8Ø x 10L)

**DIMENSION, IMPEDANCE & PERMISSIBLE RIPPLE CURRENT**

Dimension:  $\phi D \times L$ (mm)

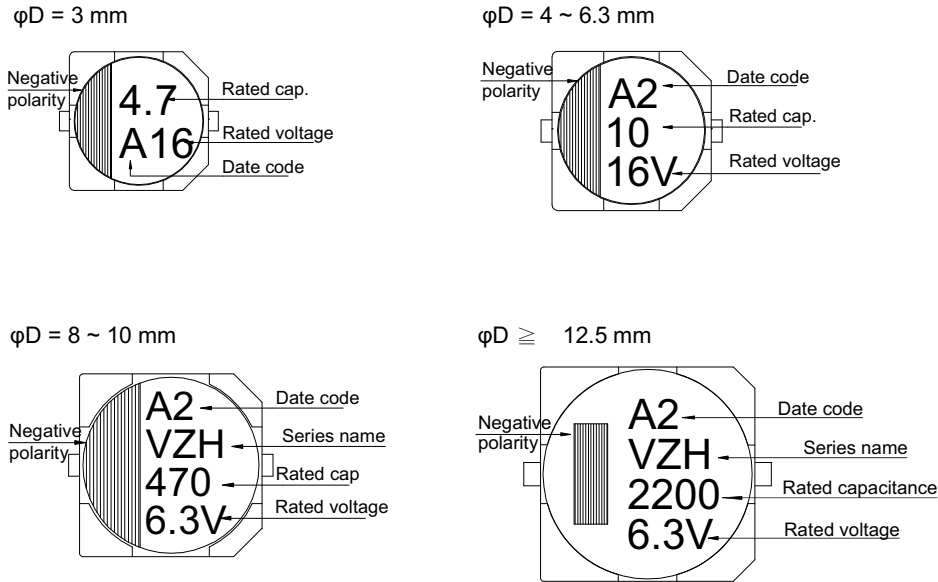
Ripple Current mA/rms at 100KHz, 105°C

Impedance:  $\Omega$  at 100KHz, 20°C

Rated Voltage (Vdc)		6.3V (0J)			10V (1A)			16V (1C)			25V (1E)			35V (1V)		
Cap ( $\mu F$ )	Contents	$\phi D \times L$	mA	Imp.	$\phi D \times L$	mA	Imp.	$\phi D \times L$	mA	Imp.	$\phi D \times L$	mA	Imp.	$\phi D \times L$	mA	Imp.
4.7	4R7													4 x 5.7	80	1.35
10	100							4 x 5.7	80	1.35	4 x 5.7	80	1.35	5 x 5.7	150	0.80
22	220	4 x 5.7	80	1.35	4 x 5.7	80	1.35	5 x 5.7	150	0.80	5 x 5.7	150	0.80	6.3 x 5.7	230	0.44
33	330	4 x 5.7	80	1.35	5 x 5.7	150	0.80	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44
47	470	5 x 5.7	150	0.80	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44
68	680										6.3 x 5.7	230	0.44	8 x 6.5	280	0.36
100	101	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44	6.3 x 7.7 8 x 6.5	280 280	0.36 0.36	8 x 10	450	0.17
150	151	6.3 x 5.7	230	0.44	6.3 x 5.7	230	0.44	6.3 x 7.7 8 x 6.5	280 280	0.36 0.36	8 x 10	450	0.17	8 x 10 10 x 7.7	450 450	0.17 0.17
220	221	6.3 x 5.7 6.3 x 7.7	230 280	0.44 0.36	6.3 x 7.7 8 x 6.5	280 280	0.36 0.36	6.3 x 7.7	280	0.36	8 x 10 10 x 7.7	450 450	0.17 0.17	8 x 10 10 x 10	450 670	0.17 0.09
330	331	8 x 6.5 8 x 10	280 450	0.36 0.17	8 x 10 10 x 7.7	450 450	0.17 0.17	8 x 10 10 x 7.7	450 450	0.17 0.17	8 x 10	450	0.17	10 x 10 12.5 x 13.5	670 820	0.09 0.07
470	471	8 x 10 10 x 7.7	450 450	0.17 0.17	8 x 10 10 x 7.7	450 450	0.17 0.17	8 x 10 10 x 7.7	450 450	0.17 0.17	10 x 10	670	0.09	12.5 x 16	950	0.06
680	681	8 x 10 10 x 7.7	450 450	0.17 0.17	10 x 10	670	0.09	10 x 10	670	0.09	12.5 x 13.5	820	0.07	12.5 x 16	950	0.06
1,000	102	8 x 10	450	0.17	10 x 10	670	0.09	12.5 x 13.5	820	0.07	12.5 x 16	950	0.06	16 x 16.5	1,260	0.06
1,500	152	10 x 10	670	0.09	12.5 x 13.5	820	0.07	12.5 x 16.0	950	0.06	16 x 16.5	1,260	0.06	18 x 16.5 16 x 21.5	1,500 1,630	0.05 0.04
2,200	222	12.5 x 13.5	820	0.07	12.5 x 16	950	0.06	16 x 16.5	1,260	0.06	16 x 16.5	1,260	0.06	18 x 21.5	1,750	0.04
3,300	332	12.5 x 16	950	0.06	16 x 16.5	1,260	0.06	16 x 16.5 16.5 x 21.5	1,260 1,630	0.06 0.04	18 x 16.5 16 x 21.5 18 x 21.5	1,500 1,630 1,750	0.05 0.04 0.04			
4,700	472	16 x 16.5	1,260	0.06	16 x 16.5	1,260	0.06	18 x 16.5 16 x 21.5	1,500 1,630	0.05 0.04						
6,800	682	18 x 16.5 16 x 21.5	1,500 1,630	0.05 0.04	18 x 16.5 16 x 21.5	1,500 1,630	0.05 0.04									
8,200	822	18 x 16.5 16 x 21.5	1,500 1,630	0.05 0.04	18 x 21.5	1,750	0.04									

Rated Voltage (Vdc)		50V (1H)			63V (1J)			80V (1K)			100V (2A)		
Cap ( $\mu F$ )	Contents	$\phi D \times L$	mA	Imp.	$\phi D \times L$	mA	Imp.	$\phi D \times L$	mA	Imp.	$\phi D \times L$	mA	Imp.
1	010	4 x 5.7	60	2.90									
2.2	2R2	4 x 5.7	60	2.90									
3.3	3R3	4 x 5.7	60	2.90									
4.7	4R7	5 x 5.7	85	1.52	5 x 5.7	70	1.90						
10	100	6.3 x 5.7	165	0.88	6.3 x 5.7	130	1.20						
22	220	6.3 x 5.7	165	0.88	6.3 x 7.7	150	0.90	8 x 10	130	1.30	8 x 10	130	1.30
33	330	6.3 x 5.7	185	0.68	8 x 10	280	0.50	8 x 10	130	1.30	10 x 10	200	0.70
47	470	6.3 x 7.7 8 x 6.5	185 185	0.68 0.68	8 x 10	280	0.50	10 x 10	200	0.70	10 x 10	200	0.70
68	680	8 x 10	369	0.34									
100	101	8 x 10 10 x 10	369 553	0.34 0.18	10 x 10	450	0.25	10 x 10	200	0.70	12.5 x 13.5	450	0.32
150	151	10 x 10	553	0.18	12.5 x 13.5	700	0.15	12.5 x 13.5	450	0.32	16 x 16.5	650	0.17
200	221	12.5 x 13.5	650	0.12	12.5 x 13.5	700	0.15	16 x 16.5	650	0.17	16 x 16.5 18 x 21.5	650 950	0.17 0.15
330	331	12.5 x 13.5	650	0.12	16 x 16.5	900	0.09	16 x 16.5	650	0.17	18 x 16.5 16 x 21.5	850 900	0.15 0.15
470	471	16 x 16.5	1,000	0.08	16 x 16.5	900	0.09	16 x 21.5	900	0.15	18 x 21.5	950	0.15
680	681	16 x 16.5	1,000	0.08	18 x 16.5 16 x 21.5	1,150 1,150	0.08 0.08	18 x 21.5	950	0.15			
1,000	102	16 x 16.5 18 x 16	1,000 1,500	0.08 0.07	18 x 21.5	1,250	0.06						
1,500	152	18 x 21.5	1,620	0.05									

■ LEGACY MARKING



■ NEW MARKING

