Topdiode Manufacturing Company Limited
Diode | Capacitors
Tel: +86 (0)769 8252 3211
Skype: topdiode
Email: info@topdiode.com
Website: www.topdiode.com

TKZ 105°C Extremely Low Impedance SMD Electrolytic Capacitor

Extra low impedance with temperature range -55~+105°C

Impedance 40~60% less than TLZ series

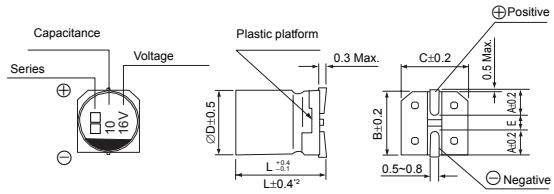
RoHS & REACH compliant, Halogen-free

SPECIFICATIONS

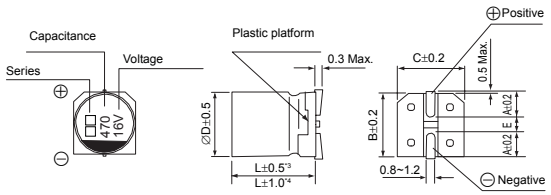
<table>
<tr><th>Items</th><th>Characteristics</th></tr>
<tr><td>Operation Temperature Range</td><td>-55 ~ +105°C</td></tr>
<tr><td>Voltage Range</td><td>6.3 ~ 50V</td></tr>
<tr><td>Capacitance Range</td><td>4.7 ~ 4700μF</td></tr>
<tr><td>Capacitance Tolerance</td><td>±20% at 120Hz, 20°C</td></tr>
<tr><td>Leakage Current</td><td>Leakage current ≤0.01CV or 3μA (∅4~∅10), whichever is greater (after 2 minutes application of rated voltage at 20°C)
Leakage current ≤0.03CV or 4μA (∅12.5~∅16), whichever is greater (after 1 minute application of rated voltage at 20°C)
C: Nominal capacitance (μF) , V: Rated voltage (V)</td></tr>
<tr><td>Dissipation Factor (tan δ)</td><td>Measurement frequency : 120Hz, Temperature : 20°C
<table>
<tr><td>Rated Voltage (V)</td><td></td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr>
<tr><td rowspan="2">tan δ (max.)</td><td>∅4~∅10</td><td>0.22</td><td>0.19</td><td>0.16</td><td>0.14</td><td>0.12</td><td>0.12</td></tr>
<tr><td>∅12.5~∅16</td><td>0.26</td><td>0.22</td><td>0.18</td><td>0.16</td><td>0.14</td><td>0.12</td></tr>
</table></td></tr>
<tr><td>Stability at Low Temperature</td><td>Measurement frequency : 120Hz
<table>
<tr><td>Rated Voltage (V)</td><td></td><td></td><td>6.3</td><td>10</td><td>16</td><td>25</td><td>35</td><td>50</td></tr>
<tr><td rowspan="4">Impedance Ratio ZT/Z20 (max.)</td><td rowspan="2">∅4~∅10</td><td>Z(-25°C) / Z(20°C)</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>Z(-55°C) / Z(20°C)</td><td>5</td><td>4</td><td>4</td><td>3</td><td>3</td><td>3</td></tr>
<tr><td rowspan="2">∅12.5~∅16</td><td>Z(-25°C) / Z(20°C)</td><td>3</td><td>3</td><td>2</td><td>2</td><td>2</td><td>2</td></tr>
<tr><td>Z(-55°C) / Z(20°C)</td><td>10</td><td>8</td><td>6</td><td>4</td><td>3</td><td>3</td></tr>
</table></td></tr>
<tr><td>Load Life</td><td>After 3000 hrs. (1000 hrs. for ∅4~∅6.3×5.8, 2000 hrs. for ∅6.3×7.7 & ∅8) application of the rated voltage at 105°C, they meet the characteristics listed below.
<table>
<tr><td>Capacitance Change</td><td>Within ±25% of initial value</td></tr>
<tr><td>Dissipation Factor</td><td>200% or less of initial specified value</td></tr>
<tr><td>Leakage Current</td><td>initial specified value or less</td></tr>
</table></td></tr>
<tr><td>Shelf Life</td><td>After leaving capacitors under no load at 105°C for 1000 hours, they meet the specified value for load life characteristics listed above.</td></tr>
<tr><td>Resistance to Soldering Heat</td><td>After reflow soldering and restored at room temperature, they meet the characteristics listed below.
<table>
<tr><td>Capacitance Change</td><td>Within ±10% of initial value</td></tr>
<tr><td>Dissipation Factor</td><td>initial specified value or less</td></tr>
<tr><td>Leakage Current</td><td>initial specified value or less</td></tr>
</table></td></tr>
<tr><td>Marking</td><td>Black print on the case top.</td></tr>
</table>

DRAWING (Unit: mm)

(∅4~∅6.3×7.7)



(∅8×10.5~∅16)



*1. Voltage mark for 6.3V is [6V]
*2. Applicable to ∅6.3×7.7
*3. Applicable to ∅8×10.5~∅10
*4. Applicable to ∅12.5~∅16

Topdiode Manufacturing Company Limited
Diode | Capacitors
Tel: +86 (0)769 8252 3211
Skype: topdiode
Email: info@topdiode.com
Website: www.topdiode.com

DIMENSIONS (Unit: mm)

ØD x L	4 x 5.8	5 x 5.8	6.3 x 5.8	6.3 x 7.7	8 x 10.5	10 x 10.5	10 x 13.5	12.5 x 13.5	12.5 x 16	16 x 16.5
A	2.0	2.2	2.6	2.6	3.0	3.3	3.3	4.9	4.9	5.8
B	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
C	4.3	5.3	6.6	6.6	8.4	10.4	10.4	13.0	13.0	17.0
E ± 0.2	1.0	1.4	1.9	1.9	3.1	4.7	4.7	4.7	4.7	6.4
L	5.8	5.8	5.8	7.7	10.5	10.5	13.5	13.5	16.0	16.5

DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE

WV / Code / µF		6.3			10			16		
		Case size	Impedance	Ripple current	Case size	Impedance	Ripple current	Case size	Impedance	Ripple current
10	106							4 × 5.8	1.8	80
15	156							4 × 5.8	1.8	80
22	226	4 × 5.8	1.8	80	4 × 5.8	1.8	80	5 × 5.8 (4 × 5.8)	0.76 (1.8)	150 (80)
33	336	5 × 5.8 (4 × 5.8)	0.76 (1.8)	150 (80)	5 × 5.8 (4 × 5.8)	0.76 (1.8)	150 (80)	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)
47	476	5 × 5.8 (4 × 5.8)	0.76 (1.8)	150 (80)	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)
56	566	5 × 5.8	0.76	150	6.3 × 5.8	0.44	230	6.3 × 5.8	0.44	230
68	686	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)	6.3 × 5.8	0.44	230	6.3 × 7.7 (6.3 × 5.8)	0.34 (0.44)	280 (230)
100	107	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)	6.3 × 7.7 (6.3 × 5.8)	0.34 (0.44)	280 (230)	6.3 × 7.7 (6.3 × 5.8)	0.34 (0.44)	280 (230)
150	157	6.3 × 5.8	0.44	230	6.3 × 7.7	0.34	280	6.3 × 7.7	0.34	280
220	227	6.3 × 7.7 (6.3 × 5.8)	0.34 (0.44)	280 (230)	6.3 × 7.7	0.34	280	8 × 10.5 (6.3 × 7.7)	0.17 (0.34)	450 (280)
330	337	6.3 × 7.7	0.34	280	8 × 10.5	0.17	450	10 × 10.5 (8 × 10.5)	0.09 (0.17)	670 (450)
470	477	8 × 10.5	0.17	450	8 × 10.5	0.17	450	10 × 10.5 (8 × 10.5)	0.09 (0.17)	670 (450)
680	687	10 × 10.5 (8 × 10.5)	0.09 (0.17)	670 (450)	10 × 10.5	0.09	670	10 × 13.5 (10 × 10.5)	0.075 (0.09)	800 (670)
1000	108	10 × 10.5 (8 × 10.5)	0.09 (0.17)	670 (450)	10 × 10.5	0.09	670	16 × 16.5 (12.5 × 16) (12.5 × 13.5)	0.055 (0.06) (0.065)	1350 (1050) (900)
1500	158	10 × 13.5 (10 × 10.5)	0.075 (0.09)	800 (670)	12.5 × 13.5	0.065	900	16 × 16.5	0.055	1350
2200	228	12.5 × 13.5	0.065	900	12.5 × 16	0.06	1050	16 × 16.5	0.055	1350
3300	338	12.5 × 16	0.06	1050	16 × 16.5	0.055	1350			
4700	478	16 × 16.5	0.055	1350						

WV / Code / µF		25			35			50		
		Case size	Impedance	Ripple current	Case size	Impedance	Ripple current	Case size	Impedance	Ripple current
4.7	475				4 × 5.8	1.8	80	5 × 5.8 (4 × 5.8)	1.52 (3.0)	85 (60)
10	106	4 × 5.8	1.8	80	5 × 5.8 (4 × 5.8)	0.76 (1.8)	150 (80)	6.3 × 5.8 (5 × 5.8)	0.88 (1.52)	165 (85)
15	156	5 × 5.8	0.76	150	5 × 5.8	0.76	150	6.3 × 5.8	0.88	165
22	226	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)	6.3 × 7.7 (6.3 × 5.8)	0.68 (0.88)	185 (165)
33	336	6.3 × 5.8 (5 × 5.8)	0.44 (0.76)	230 (150)	6.3 × 5.8	0.44	230	6.3 × 7.7	0.68	185
47	476	6.3 × 7.7 (6.3 × 5.8)	0.34 (0.44)	280 (230)	6.3 × 7.7 (6.3 × 5.8)	0.34 (0.44)	280 (230)	6.3 × 7.7	0.68	185
56	566	6.3 × 7.7 (6.3 × 5.8)	0.34 (0.44)	280 (230)	6.3 × 7.7	0.34	280	8 × 10.5 (6.3 × 7.7)	0.34 (0.68)	350 (185)
68	686	6.3 × 7.7	0.34	280	6.3 × 7.7	0.34	280	8 × 10.5	0.34	350
100	107	6.3 × 7.7	0.34	280	8 × 10.5	0.17	450	10 × 10.5 (8 × 10.5)	0.18 (0.34)	670 (350)
150	157	8 × 10.5 (6.3 × 7.7)	0.17 (0.34)	450 (280)	10 × 10.5	0.09	670	10 × 10.5	0.18	670

Tel: +86 (0)769 8252 3211
Skype: topdiode
Email: info@topdiode.com
Website: www.topdiode.com

DIMENSIONS & MAXIMUM PERMISSIBLE RIPPLE CURRENT & IMPEDANCE

WV / Code / μF		25			35			50		
		Case size	Impedance	Ripple current	Case size	Impedance	Ripple current	Case size	Impedance	Ripple current
220	227	8 × 10.5	0.17	450	10 × 10.5	0.09	670	10 × 13.5 (10 × 10.5)	0.16 (0.18)	750 (670)
330	337	10 × 10.5 (8 × 10.5)	0.09 (0.17)	670 (450)	10 × 10.5	0.09	670	12.5 × 13.5	0.14	800
470	477	10 × 13.5 (10 × 10.5)	0.075 (0.09)	800 (670)	12.5 × 13.5 (10 × 13.5)	0.065 (0.075)	900 (800)	16 × 16.5 (12.5 × 16)	0.10 (0.12)	1150 (900)
680	687	12.5 × 13.5	0.065	900	12.5 × 16 (12.5 × 13.5)	0.060 (0.065)	1050 (900)			
1000	108	16 × 16.5 (12.5 × 16)	0.055 (0.060)	1350 (1050)	16 × 16.5	0.055	1350			
1500	158	16 × 16.5	0.055	1350						

WV / Code / μF		100		
		Case size	Impedance	Ripple current
10	106	8 × 10.5	1.8	110

FREQUENCY COEFFICIENT OF ALLOWABLE RIPPLE CURRENT

Frequency			50Hz	120Hz	300Hz	1KHz	10KHz~
Coefficient	Ø4 ~ Ø10	4.7 ~ 68μF	0.35	0.50	0.64	0.83	1.00
		100 ~ 1500μF	0.40	0.55	0.70	0.85	1.00
	Ø12.5 ~ Ø16	~ 680μF	0.45	0.65	0.80	0.90	1.00
		1000 ~ 4700μF	0.65	0.85	0.95	1.00	1.00

The endurance of capacitors is reduced with internal heating produced by ripple current at the rate of halving the lifetime with every 5~10°C rise. When long life performance is required in actual use, the rms ripple current has to be reduced.

◆ How to order

TKZ	A	106	M	0035	0505	R	000
Type	**Material Code**	**Capacitance Code**	**Tolerance**	**Rated Voltage**	**Size Code**	**Package Code**	**Suffix Indicate Special Requirement**
TKZ	A: Aluminum Cap For TCS, TCK TFZ TKZ....etc.	pF Code: 1st two digits represent significant figures 3rd digit represents multiplier (number of zeros to follow) 106 = 10uF 107 = 100uF	M: +/-20%	Code 0035: 35VDC For DC Voltage 0006: 6.3VDC 0035: 35VDC 0100: 100VDC	Code 0505: Size 5x5.8mm Size for V-chip E-cap 0405: Size 4x5.8mm 0605: Size 6.3x5.8mm 0607: Size 6.3x7.7mm 1010: Size 10x10.5mm	R: Tape & Reel	000: Indicating Standard