

Low ESR and High Frequency Radial Electrolytic Capacitor

Features

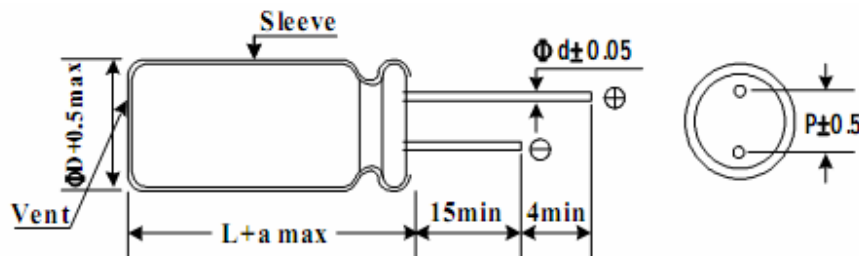
- Radial leads, cylindrical aluminum case
- Low impedance and high frequency
- High permissible ripple current at high frequency and High operation temperature (-40 ~ +105°C)
- Life time: 1000 to 3000 hours at 105°C
- RoHS compliant



Applications

- Switching regulator of computer , especially for high frequency

Dimensions (in mm)



φD	5	6.3	8	10	12	13	16	18	22
P	2.0	2.5	3.5	5.0	5.0	5.0	7.5	7.5	10.0
φd	0.5	0.5	0.6	0.6	0.6	0.6	0.8	0.8	0.8/1.0*
a	1.5	1.5	1.5	1.5	2.0	2.0	2.0	2.0	2.0
L	Refer to below table "Case Size & Rated Ripple Current & Max. Impedance"								

Note: *φd=1.0mm when L ≥ 40mm.

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TZE Series

Specification

Description		Value							Conditions	
Operation Temperature Range		-40 ~ +105°C								
Rated Voltage Range (WV)		6.3 ~ 100VDC								
Rated Capacitance Range		4.7 ~ 15000 uF								
Capacitance Tolerance		±20%							at 120Hz, 20 °C	
Max. Leakage current at 20°C		I ≤ 0.01 CV or 3 μA, whichever is greater (I= Leakage Current(μA), C=Nominal Capacitance(μF), V=Rated Voltage(V))							After 2 minutes applied rated voltage	
Working Voltage (V)		6.3	10	16	25	35	50	63	100	
Surge Voltage (V)		8	13	20	32	44	63	79	125	at 20°C
Max. Dissipation Factor tan δ *		0.22	0.19	0.16	0.14	0.12	0.10	0.09	0.08	at 20°C, 120Hz
Max. Low Temperature Stability Impedance Ratio at 120Hz		4	3	3	3	3	2	2	2	Z(-25°C)/ Z(+20°C)
		8	6	4	4	4	4	4	4	Z(-40°C)/ Z(+20°C)
Load Life	Cap. Change	Within ±20% of the initial value							After rated voltage with ripple current applied for 3000 hours at 105°C **	
	Dissipation Factor	≤ 200% of specified value								
	Leakage Current	≤ initial specified value								
Shelf Life		Shall meet the same requirement as load life test							After placed at 105° C without voltage applied for 1000 hours	

Note:

- * when nominal capacitance is over 1000uF, tan δ shall be added 0.02 to the list value with increase of every 1000uF;
- ** If dimension is from 5x11 ~ 10x12.5, Load life is 2000 hours;
If dimension is over 10x15, Load life is 3000 hours;
If dimension is down size, Load life will be less 1000 hours than standard.

Ripple Current Multiplier Frequency coefficient

Freq. (HZ) Capacitance	50	120	300	1K	10K	100K
≤ 4.7 uF	0.30	0.40	0.50	0.70	0.80	1.00
5.6 ~ 33 uF	0.40	0.50	0.60	0.80	0.90	1.00
34 ~ 330 uF	0.60	0.70	0.80	0.90	0.95	1.00
331 ~ 1000 uF	0.65	0.90	0.90	0.98	1.00	1.00
≥ 1200 uF	0.85	0.90	0.95	0.98	1.00	1.00

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Case Size & Rated Ripple Current & Max. Impedance

Cap. (μ F)	Rated (Surge) Voltage (V)											
	6.3 (8)			10 (13)			16 (20)			25 (32)		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
10										5x11	50	0.550
47										5x11	150	0.450
56							5x11	100	0.630	5x11	150	0.420
68							5x11	150	0.420	6.3x11	200	0.370
100				5x11	150	0.420	5x11	200	0.370	6.3x11	250	0.220
120				5x11	200	0.370	6.3x11	250	0.320	8x11	300	0.200
150	5x11	200	0.420	6.3x11	250	0.320	6.3x11	300	0.220	8x11	550	0.140
220	6.3x11	250	0.320	6.3x11	300	0.220	8x11	550	0.140	8x11*	620	0.120
										8x15*	750	0.100
270	6.3x11*	300	0.220									
330	6.3x11*	320	0.230	8x11	550	0.140	8x11*	620	0.120	8x15*	660	0.100
	8x11	400	0.180				8x15	750	0.100	8x20	800	0.069
							10x12.5	688	0.080	10x15	900	0.086
470	6.3x11*	440	0.180	8x11*	620	0.120	8x15*	730	0.093	8x20*	1000	0.067
	8x11	550	0.140	8x15	750	0.100	10x12.5	800	0.085	10x12.5*	900	0.086
										10x16	1050	0.064
680	8x11*	580	0.120	8x11*	640	0.110	10x16	1050	0.064	10x20	1100	0.039
	8x15	700	0.100	10x12.5	800	0.085						
820	8x20	750	0.085	10x16	1050	0.064	10x20	1100	0.044	10x20	1250	0.039
1000	8x11*	580	0.150	8x20	1080	0.065	10x16*	1140	0.043	10x20*	1160	0.047
	8x15*	670	0.085	10x12.5*	930	0.075	10x20	1250	0.039	10x25*	1310	0.042
	8x20	800	0.069	10x16	990	0.085				13x20	1450	0.038
	10x12.5	690	0.080	12x20	1100	0.050						
1200	10x16	1000	0.064	10x20	1250	0.044	10x25*	1310	0.042	13x25	1600	0.029
1200							13x20	1450	0.038			

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Cap. (μ F)	Rated (Surge) Voltage (V)											
	6.3 (8)			10 (13)			16 (20)			25 (32)		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
1500	8x15*	980	0.085	10x20	1450	0.039	10x20*	1200	0.045	12x30*	1750	0.032
	8x20*	1070	0.051				13x20	1600	0.034	16x25	2000	0.028
	10x16*	1070	0.055									
	10x20	1250	0.044									
2200	10x20*	1220	0.051	10x20*	1330	0.047	10x30*	1780	0.032	13x30*	1810	0.029
	10x25*	1310	0.048	10x25*	1450	0.039	13x20*	1720	0.033	16x25*	1660	0.032
	13x20	1450	0.043	13x20	1600	0.038	13x25	2000	0.028	16x32	2200	0.024
3300	10x25*	1400	0.043	10x30*	1740	0.032	13x40*	2200	0.026	16x36*	2540	0.019
3300	13x25	1700	0.035	13x25	2000	0.028	16x25	2200	0.024	18x36	2550	0.019
3900	13x25	1750	0.032									
4700	12x30*	1570	0.033	13x25*	1860	0.028	16x36	2550	0.019	18x36	2800	0.019
	13x25*	1520	0.033	16x25	2200	0.024						
	16x25	1800	0.028									
6800	16x32	2000	0.024	16x36	2550	0.019	18x36	2800	0.019	18x36	2800	0.019
8200	16x32	2350	0.019	18x36	2800	0.019						
10000	16x36	2550	0.019									
15000	18x36	3000	0.019									

Cap. (μ F)	Rated (Surge) Voltage (V)											
	35 (44)			50 (63)			63 (79)			100 (125)		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
4.7	5x11	115	1.200	5x11	115	2.000	5x11	115	2.200	5x11	120	2.000
6.8	5x11	120	1.000	5x11	120	1.850	5x11	120	2.000	5x11	140	1.850
10	5x11	140	0.900	5x11	140	1.700	5x11	140	1.850	6.3x11	200	1.500
15	5x11	170	0.690	5x11	180	1.200	5x11	200	1.700	6.3x11	250	1.200
22	5x11	190	0.420	5x11	200	0.700	6.3x11	250	1.200	8x11	300	0.790
33	5x11	200	0.420	6.3x11	250	0.600	6.3x11	300	0.900	8x15	450	0.590
47	6.3x11	250	0.370	6.3x11	300	0.520	8x11	450	0.700	10x16	550	0.350
68	6.3x11	300	0.220	8x11	450	0.350	8x11	550	0.520	10x20	650	0.240
100	6.3x11*	360	0.180	8x11*	480	0.290	8x20	650	0.350	13x20	800	0.180
100	8x11	450	0.140	8x15	550	0.250						
120	8x11	550	0.130	8x20	650	0.210	10x16	800	0.300	13x25	1050	0.150
150	8x15	650	0.100	10x12.5	800	0.160	10x16	1050	0.200	13x25	1300	0.110

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Cap. (μ F)	Rated (Surge) Voltage (V)											
	35 (44)			50 (63)			63 (79)			100 (125)		
	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z	Size	Ripple	Z
220	8x15*	730	0.100	10x15	1050	0.100	10x20	1300	0.150	16x25	1400	0.071
	10x12.5	800	0.069	10x25	1050	0.068						
330	10x16*	900	0.052	10x20	1300	0.072	13x20	1400	0.100	16x32	1550	0.049
	10x20	1050	0.044									
470	10x20	1300	0.039	10x20*	1390	0.075	13x25	1550	0.064	18x36	1770	0.038
				13x20	1400	0.060						
680	13x20	1400	0.038	13x25	1550	0.050	16x25	1700	0.052			
820	13x20	1550	0.034	16x25	1700	0.040	16x32	1900	0.048			
1000	13x25	1700	0.029	16x25	1900	0.039	16x32	2100	0.042			
1200	16x25	1900	0.028	16x32	2100	0.025	16x36	2550	0.036			
1500	16x25	2100	0.024	16x36	2550	0.025	18x36	2800	0.033			
2200	16x32*	2300	0.021	18x40	2800	0.025						
	16x36	2550	0.019									
3300	18x36	2880	0.019									

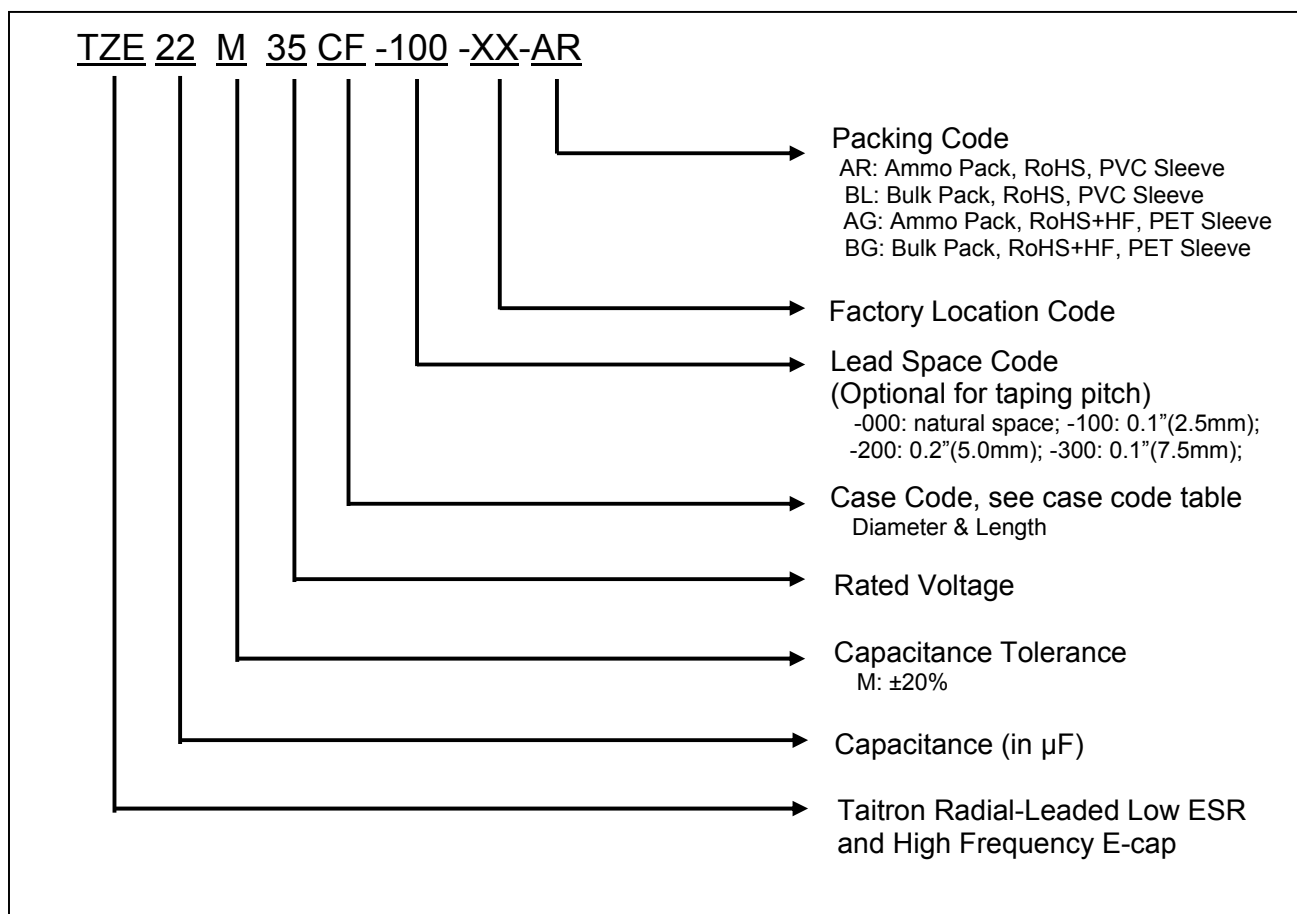
Note:

1. Case Size: ϕ D x L (mm);
2. Ripple Current: (mA/rms), 105°C, 100KHZ;
3. Impedance: Ω , 20°C, 100KHZ;
4. * is down size, Load Life is less 1000 hours than standard.

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TZE Series

How to Order



Case code table

Diameter (mm)	5	6.3	8	10	12	13	16	18	20	22
Code	C	E	F	G	H	J	K	L	M	N

Length (mm)	11	12.5	15	16	20	25	30	32	36	40
Code	F	J	L	M	Q	T	Y	AA	EE	HH

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TZE Series

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