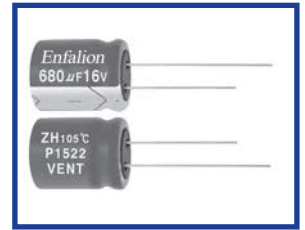


ZH 105°C Miniaturized, Long Life, Low impedance

Features

- ◆ Long Life: 105°C 6000~10000hours.
- ◆ RoHS compliance.



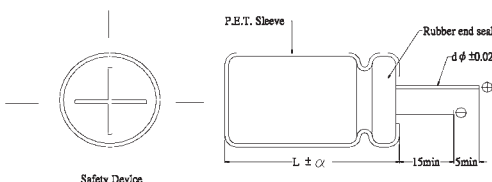
Specifications

Item	Performance Characteristics								
Operating Temperature Range	-40 to +105°C								
Rated Voltage Range	6.3~100V.DC								
Capacitance Tolerance	±20%(120Hz, +20°C)								
Leakage Current (+20°C, max.)	I ≤ 0.01CV or 3µA whichever is greater. (After 2 minutes) I = Leakage Current(µA) C = Rated Capacitance V = Rated voltage(V)								
Dissipation Factor (tan δ , at 20°C , 120Hz)	Working Voltage(VDC)	6.3 10 16 25 35 50 63 80 100							
	D. F.(%) max.	22 19 16 14 12 10 9 8 8							
For capacitance > 1000µF, add 2% per another 1000µF.									
Low Temperature Characteristics (at 120Hz)	Impedance ratio max								
	Working Voltage(VDC)	6.3 10 16 25 35 50 63 80 100							
	Z-25°C / Z+20°C	2 2 2 2 2 2 2 2 2							
Z-40°C / Z+20°C									
For capacitance > 1000 µ F, add 0.5 per another 1000 µ F for -25°C/+20°C. add 1 per another 1000 µ F for -40°C/+20°C.									
Endurance	Test conditions								
	Duration time : as right Ambient temperature : +105°C Applied voltage : Rated DC working voltage After test requirement at +20°C Capacitance change : ≤ ±25% of the initial measured value.(6.3V,10V: ±30%) Dissipation factor : ≤ 200% of the initial specified value Leakage current : ≤ The initial specified value	<table border="1"> <thead> <tr> <th>D Φ</th> <th>Life hours</th> </tr> </thead> <tbody> <tr> <td>Φ D ≤ 6.3</td> <td>6000</td> </tr> <tr> <td>Φ D = 8</td> <td>8000</td> </tr> <tr> <td>Φ D ≥ 10</td> <td>10000</td> </tr> </tbody> </table>	D Φ	Life hours	Φ D ≤ 6.3	6000	Φ D = 8	8000	Φ D ≥ 10
D Φ	Life hours								
Φ D ≤ 6.3	6000								
Φ D = 8	8000								
Φ D ≥ 10	10000								
Shelf Life	Test condition Duration time : 1000Hrs Ambient temperature : +105°C Applied voltage : None After test requirement at +20°C: Same limits as Endurance. Pre-treatment for measurements shall be conducted after application of DC working voltage for 30 minutes.								

Multiplier for Ripple Current vs. Frequency

CAP(µ F)\Frequency(Hz)	120	1K	10K	100K ≤
8.2~33 µ F	0.42	0.70	0.90	1.00
47~270 µ F	0.50	0.73	0.92	1.00
330~680 µ F	0.55	0.77	0.94	1.00
820~1800 µ F	0.60	0.80	0.96	1.00
2200~8200 µ F	0.70	0.85	0.98	1.00

Diagram of Dimensions:(unit:mm)



φ D	5	6.3	8	10	13	16	18
F	2.0	2.5	3.5	5.0	7.5		
φ d	0.5	L < 20	L ≥ 20	0.6	0.8		
		0.5	0.6				
α	L ≤ 16: α = 1.5		L ≥ 20: α = 2.0				

Case Size

φ DxL(mm)

μ F	WV(SV)	6.3V				10V			
		Size	Ripple	Impedance		Size	Ripple	Impedance	
				20°C	-10°C			20°C	-10°C
150									
220		5x11	310	0.23	0.82	5x11	295	0.23	0.82
330						6.3x11	490	0.1	0.37
470		6.3x11	486	0.100	0.37				
680						8x11.5	895	0.06	0.21
820		8x11.5	850	0.060	0.21				
1000						8x16	1200	0.05	0.17
						10x12.5	1280	0.049	0.16
1200		8x16	1125	0.05	0.17				
		10x12.5	1190	0.044	0.155				
1500		8x20	1350	0.034	0.13	8x20	1450	0.034	0.13
						10x16	1710	0.033	0.12
1800		10x16	1580	0.033	0.12	10x20	1910	0.025	0.08
2200		10x20	1760	0.025	0.08	10x25	2200	0.023	0.069
2700		10x25	2025	0.023	0.069	13x20	2430	0.022	0.058
3900		13x20	2230	0.022	0.058	13x25	2850	0.02	0.053
4700		13x25	2610	0.020	0.053	13x30	3400	0.018	0.048
	16x21					3200	0.020	0.053	
5600		13x30	3100	0.018	0.048	13x35	3520	0.017	0.046
6800		16x21	2925	0.02	0.053	16x25	3580	0.018	0.05
		13x35	3210	0.017	0.046				
8200		16x25	3260	0.018	0.05				

μ F	WV(SV)	16V				25V			
		Size	Ripple	Impedance		Size	Ripple	Impedance	
				20°C	-10°C			20°C	-10°C
68									
100		5x11	310	0.23	0.84	5x11	310	0.240	0.880
150						6.3x11	486	0.100	0.370
220		6.3x11	486	0.100	0.370				
330						8x11.5	850	0.060	0.210
390						8x16	1125	0.050	0.170
470		8x11.5	850	0.060	0.210	10x12.5	1190	0.044	0.160
560						8x20	1350	0.034	0.130
680		8x16	1125	0.05	0.17	10x16	1580	0.033	0.120
		10x12.5	1190	0.044	0.16				
820						10x20	1760	0.025	0.075
1000		8x20	1350	0.034	0.13	10x25	2025	0.023	0.069
		10x16	1580	0.033	0.12				
1500		10x20	1760	0.025	0.075	13x20	2230	0.022	0.058
1800		10x25	2025	0.023	0.069	13x25	2610	0.020	0.053
2200		13x20	2230	0.022	0.058	13x30	3100	0.018	0.048
	16x21					2920	0.020	0.053	
2700		13x25	2610	0.020	0.053	13x35	3210	0.017	0.046
3300		13x30	3100	0.018	0.048	16x25	3260	0.018	0.050
		16x21	2920	0.023	0.053				
3900		13x35	3210	0.017	0.046				
4700		16x25	3260	0.018	0.050				

Ripple Current (mA, rms) at 105°C 100KHz

Max Impedance (Ω) at 20°C 100KHz

φ DxL(mm)

μ F	WV(SV)	35V				50V			
		Size	Ripple	Impedance		Size	Ripple	Impedance	
				20°C	-10°C			20°C	-10°C
27									
47		5x11	310	0.5	1.55	5x11	214	0.400	1.300
56						6.3x11	346	0.150	0.550
100		6.3x11	486	0.11	0.39				
120						8x16	855	0.065	0.195
150						10x12.5	880	0.067	0.198
180						8x20	1070	0.051	0.154
220		8x11.5	850	0.062	0.21	10x16	1230	0.046	0.132
270		8x16	1125	0.060	0.165	10x20	1420	0.033	0.130
330		10x12.5	1190	0.043	0.154	10x25	1680	0.032	0.122
390		8x20	1350	0.032	0.122				
470		10x16	1580	0.033	0.130	13x20	1845	0.032	0.122
560		10x20	1760	0.030	0.075	13x25	2160	0.028	0.069
680		10x25	2025	0.028	0.069	13x30	2570	0.026	0.067
820						13x35	2660	0.024	0.066
						16x21	2450	0.028	0.069
1000		13x20	2230	0.022	0.058	16x25	2700	0.026	0.067
1200		13x25	2610	0.018	0.053				
1500		13x30	3100	0.018	0.048				
		16x21	2920	0.023	0.053				
1800		13x35	3210	0.017	0.046				
2200		16x25	3260	0.018	0.05				

μ F	WV(SV)	63V				80V			
		Size	Ripple	Impedance		Size	Ripple	Impedance	
				20°C	-10°C			20°C	-10°C
12									
18		5x11	155	0.98	3.85	5x11	146	1.54	6.16
33						6.3x11	240	0.63	2.54
47		6.3x11	250	0.60	1.54				
56						8x11.5	415	0.4	1.54
68						8x16	526	0.28	1.10
82		8x11.5	472	0.30	0.97	10x12.5	560	0.25	1.06
100		8x16	619	0.20	0.7	8x20	660	0.21	0.84
120		10x12.5	652	0.17	0.66	10x16	700	0.187	0.792
150		8x20	774	0.14	0.57				
180		10x16	898	0.13	0.53	10x20	990	0.13	0.53
						13x16	877	0.14	0.57
220						10x25	1050	0.12	0.52
270		10x20	1080	0.086	0.34				
		13x16	1080	0.090	0.3	13x20	1280	0.094	0.342
		13x20	1180	0.088	0.3				
330		10x25	1260	0.0759	0.31	13x25	1450	0.066	0.25
		13x25	1400	0.073	0.29				
390		13x20	1410	0.066	0.25	13x30	1750	0.056	0.230
						16x21	1570	0.064	0.230
470		13x25	1790	0.048	0.16				
		13x30	1940	0.046	0.14	13x35	1920	0.047	0.155
		16x21	1850	0.047	0.15				
560		13x30	2169	0.040	0.14	13x40	2100	0.045	0.150
		16x21	1899	0.048	0.16	16x25	1980	0.049	0.170
						18x21	1750	0.059	0.180
680		13x35	2350	0.038	0.13	16x31.5	2160	0.038	0.13
		13x40	2640	0.032	0.11	16x35.5	2340	0.032	0.110
820		16x25	2450	0.037	0.12	18x25	2040	0.042	0.140
		18x21	2250	0.043	0.15				
1000						16x41	2570	0.033	0.100
						18x31.5	2220	0.036	0.12
1200		16x31.5	2690	0.029	0.080				
		18x25	2520	0.036	0.120	18x35.5	2570	0.033	0.100
1500		16x35.5	2736	0.026	0.073				
		18x31.5	2970	0.03	0.085	18x41	3150	0.032	0.100
1800		16x41	3200	0.024	0.072				
		18x35.5	3200	0.025	0.069				
2200		18x41	3300	0.023	0.064				

Ripple Current (mA, rms) at 105°C 100KHz
Max Impedance (Ω) at 20°C 100KHz

φ DxL(mm)

μ F	WV(SV)	100V			
		Size	Ripple	Impedance	
				20°C	-10°C
8.2		5x11	146	1.54	6.16
18		6.3x11	240	0.63	2.53
33		8x11.5	415	0.42	1.54
47		8x16	526	0.40	1.10
56		10x12.5	560	0.35	1.06
68		8x20	660	0.30	0.84
82		10x16	700	0.22	0.79
100		10x20	935	0.15	0.55
		13x16	875	0.16	0.57
120		10x25	1050	0.14	0.52
150		13x20	1280	0.094	0.340
220		13x25	1450	0.066	0.250
270		13x30	1750	0.056	0.230
		16x21	1570	0.064	0.240
330		13x35	1920	0.047	0.175
390		13x40	2100	0.040	0.170
		16x25	1940	0.049	0.180
		18x21	1750	0.059	0.200
470		16x31.5	2160	0.036	0.130
		18x25	2040	0.042	0.140
560		16x35.5	2340	0.032	0.110
		18x31.5	2220	0.034	0.120
680		16x41	2570	0.030	0.100
		18x35.5	2570	0.030	0.100
820		18x41	3150	0.029	0.084

Ripple Current (mA, rms) at 105°C 100KHz

Max Impedance (Ω) at 20°C 100KHz