

Miniature Aluminum Electrolytic Capacitors

SZ [Ultra Low ESR]

105°C Single-Ended Lead Aluminum Electrolytic Capacitors for High Frequency Applications



DESCRIPTION

Used in switching regulator applications in computers, especially for high frequency.

Low impedance and ESR, high permissible ripple current at high frequency and higher operating temperature (-40°C to +105°C).

High Temperature Load Life at 105°C for 2000 Hours

MULTIPLIER FOR RIPPLE CURRENT

Frequency Coefficient

FREQUENCY (Hz)	120	1K	10K	100K
FACTOR	0.50	0.80	0.90	1.00

Temperature Coefficient

TEMPERATURE (°C)	65	85	105
FACTOR	2.10	1.70	1.00

ELECTRICAL CHARACTERISTICS

Operating Temperature Range : -40 ~ +105°C

Rated Voltage Range : 6.3 ~ 16V

Rated Capacitance Range : 470 ~ 3300μF

Capacitance Tolerance : -20 ~ +20% at 120Hz, 20°C

DC Leakage Current (μA) : I = 0.03 CV whichever is greater.
(After Rated Voltage Applied for 2 Minutes)

Dissipation Factor

WV (V) :	6.3	10	16
D.F. (%) :	22	19	16

When nominal capacitance is over 1000μF, tan δ shall be added 0.02 to the listed value with increase of every 1000μF.

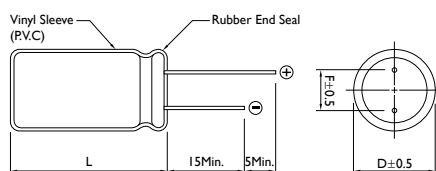
WV (V) :	Rated Voltage (V)	6.3	10	16
Impedance :	Z - 25°C / Z + 20°C	2	2	2
	Z - 40°C / Z + 20°C	3	3	3

Endurance: After the rated voltage has been applied at 105°C for 2000 hours, the capacitors shall meet the following requirements.

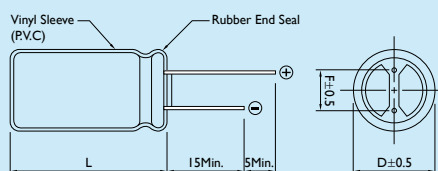
- (a) Capacitance Change : Within ±25% of Initial Value
- (b) Dissipation Factor : Not Exceeding 200% of Specified Value
- (c) Leakage Current : Not Exceeding the Specified Value

Shelf Life: After having been placed at 105°C without voltage applied for 1000 hours, the capacitors shall meet the same requirements as Endurance.

DIAGRAM OF DIMENSIONS



Rubber Stand-off



$L \leq 16 \quad L + 1.5\text{Max.}$
 $L > 16 \quad L + 2\text{Max.}$
 $D\phi = 8 \ \& \ 10 \quad L + 2.5\text{Max.}$

$D\phi < 20 \quad D\phi + 0.5$
 $D\phi \geq 20 \quad D\phi + 1$

Dimensions: mm

Dφ	F	dφ
4.0	1.5	0.45
5.0	2.0	0.5
6.3	2.5	
8.0	3.5	0.6
10.0	5.0	
12.0		
13.0		
16.0	7.5	0.8
18.0		
22.0	10.0	

CASE SIZE & PERMISSIBLE RIPPLE CURRENT OF STANDARD PRODUCTS

D x L: mm

CAP. (μF)	RATED VOLTAGE WV (SURGE VOLTAGE WV)								
	6.3 (8)			10 (13)			16 (20)		
	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR	SIZE	RIPPLE	ESR
470							8 x 11	1036	43
680				8 x 11	1036	43	8 x 15	1355	34
							10 x 12	1400	31
820	8 x 11	1036	43						
1000				8 x 15	1355	34	8 x 20	1700	25
				10 x 12	1400	31	10 x 15	1818	23
1200	8 x 15	1355	34						
1500	8 x 20	1740	25	8 x 20	1700	25	10 x 19.5	2318	16
	10 x 12	1400	31	10 x 15	1818	23			
1800	10 x 15	1818	23	10 x 19.5	2318	16	10 x 25	2546	14
2200	10 x 19.5	2318	15	10 x 25	2545	14			
3300	10 x 25	2364	14						

Note: 1. Ripple Current: (mA/rms) 105°C, 100KHz
 2. ESR: 100KHz / 20°C (mΩ Max.)