

# Miniature Aluminum Electrolytic Capacitors

## Ripple Current of Miniature Size Aluminum Electrolytic Capacitors

### Maximum Permissible Ripple Current

- Voltage Limitation A polar capacitor can be used, but the peak voltage (V<sub>H</sub>) applied to the capacitor should not exceed its rated voltage. (Refer to Diagram 1)
- Current Limitation Ripple current should not exceed the maximum permissible ripple current, as defined in Tables 1 to 4. When current measurement cannot be taken because of the superimposition of more than two frequencies, electrical current should be held down to such a level that the surface temperature of the capacitor rises no more than 3°C above room temperature.

Diagram 1

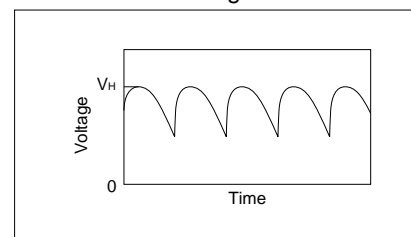


Table 1. mA r.m.s. (120Hz, 85°C)

μF \ V	6.3	10	16	25	35	50	63	100
0.10						1.0	1.2	1.6
0.22						2.5	3.0	4.0
0.33						4.0	4.8	6.4
0.47						5.0	5.0	8.0
1.0						10	10	15
2.2						20	20	25
3.3						28	28	30
4.7				25	30	38	40	45
10			28	40	45	50	60	70
22		38	50	60	75	90	105	120
33	50	58	60	80	90	110	130	170
47	60	70	85	90	125	135	160	200
100	120	125	165	180	200	250	280	350
220	210	225	260	320	350	410	450	600
330	260	295	360	425	440	580	600	750
470	330	390	420	540	585	750	800	950
1000	560	620	740	940	1000	1150	1250	1350
2200	890	1000	1150	1350	1500	1700		
3300	1080	1300	1500	1600	1750	1850		
4700	1400	1550	1750	1900	2000			
6800	1600	1800	1900					
10000	1750	1900						

Value in Table 1 applicable to HWN, HLB, HT, FA series.  
FA : Value from upper table multiplied by coefficient (0.7).

Table 2. mA r.m.s. (120Hz, 85°C)

μF \ V	4	6.3	10	16	25	35	50	63
0.10							1	1.2
0.22							2.3	2.9
0.33							3.5	4.4
0.47							5	5
1.0							10	10
2.2						10	15	17
3.3					16	17	18	21
4.7					19	20	23	26
10			17	25	28	30	34	43
22		31	35	39	52	54	60	65
33	26	39	43	57	63	65	70	
47	34	47	59	68	70	75	80	
100	61	71	80	91	100	105		
150				105				
220	82	103	110	110				
330	100	110						
470	110							

Value in Table 2 applicable to SWB, SWN series.

Table 3. mA r.m.s. (120Hz, 85°C)

μF \ V	4	6.3	10	16	25	35	50
0.10							1.0
0.22							2.3
0.33							3.5
0.47							5.0
1.0							10
2.2						8.4	15
3.3					10	17	18
4.7				12	19	20	23
10		13	17	25	28	30	34
22		31	35	39	52	54	54
33	26	39	43	57	63	68	
47	34	47	59	68	73	73	
100	61	71	76	86			
220	82	90	90				
330	85	92					

Value in Table 3 applicable to UW, UWN series.

Table 4. Frequency of other than 120Hz.

cap. (μF)	Frequency F (Hz)			
	50 ≤ F < 100	100 ≤ F < 1k	1k ≤ F < 10k	10k ≤ F
C < 100	0.8	1.0	1.3	1.5
100 ≤ C < 1000	0.8	1.0	1.2	1.3
1000 ≤ C	0.8	1.0	1.13	1.15