

Aluminum Electrolytic Capacitors



Radial Low ESR 105°C

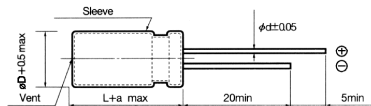
LESR Series

- Used in switching power supply circuits.
- It provides high ripple current, low ESR, wide temperature range, long life for 2000 hours.

SPECIFICATION

ITEM	SPECIFICATION														
Capacitance Tolerance (120Hz 20°C)	±20%(M)														
Rated Working Voltage	6.3WV~450WV														
Operation Temperature Range	-55 ~ +105°C							-25 ~ +105°C							
Surge Voltage (V) (20°C)	WV	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
	SV	8	13	20	32	44	63	79	125	200	250	300	400	450	500
Leakage Current (20°C)	I ≤ 0.002CV or 3 Whichever is greater							I ≤ 0.03CV +10							
	After rated voltage applied for 3 minutes Where I : Leakage Current (μA) C : Capacitance (μF) V : Rated Voltage (V)														
Dissipation Factor(tan δ) (120Hz 20°C)	WV	6.3	10	16	25	35	50	63	100	160	200	250	350	400	450
	DF	0.20	0.15	0.12	0.10	0.09	0.08	0.08	0.08	0.15	0.15	0.15	0.20	0.20	0.20
Add 0.02 per 1000 μF for more than 1000 μF															
Low Temperature Characteristics	Impedance ratio at 120Hz														
	Comparison Z/WV	6.3	10	16	25	35	50	63	100	160	250	350	400	450	
	-25°C / 20°C	4	3	2	2	2	2	2	2	2	3	3	3	4	4
-40°C / 20°C	6	4	3	3	3	3	3	3	3	-	-	-	-	-	
Load Life	After 2000 hours application of W.V. at 105°C, the capacitor shall meet the following limits.														
	Capacitance Change							≤±15% of Initial Value							
	Dissipation Factor							≤150% of Initial Specified Value							
Shelf Life	After 500 hours to place at 105°C without rated voltage applied, the capacitor shall meet the limits as same as load life.														
	Others														
Satisfied JIS C-5141															

DIMENSIONS (unit:mm)



øD	5	6.3	8	10	13	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
ød	0.5	0.5	0.6	0.6	0.6	0.8	0.8
a	1.0	1.0	1.0	1.0	2.0	2.0	2.0

RIPPLE CURRENT COEFFICIENTS

Frequency Multipliers

Freq.(Hz)	60	120	1K	10K ~	100K ~
Cap.(μF)					
0.47 ~ 4.7	0.26	0.40	0.68	0.78	1.00
10 ~ 47	0.35	0.50	0.76	0.87	1.00
100 ~ 220	0.58	0.70	0.85	0.90	1.00
330 ~ 1000	0.70	0.80	0.93	0.98	1.00
2200 ~ 6800	0.85	0.90	0.95	1.00	1.00

Temperature Multipliers

Temp.(°C)	~ 75	85	105
Coefficient	1.96	1.68	1.00



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CASE SIZE & MAX RIPPLE CURRENT

CASE SIZE ØDxL (mm) MAX RIPPLE CURRENT (mA/105°C, 100KHz)

CAP Code	WV µF	6.3		10		16		25		35		50		63		100		160		250		350		400		450	
		ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA	ØDxL	mA
3R3	3.3															8x11	125	10x12.5	70	10x25	80	13x20	95	13x20	95	13x20	95
4R7	4.7															8x11	140	10x15	155	10x30	95	13x25	125	13x25	125	13x30	125
100	10															10x12.5	175	10x20	160	13x25	185	13x30	200	13x30	200	13x40	200
220	22													8x11	220	10x17	300	13x20	290	13x30	325	13x40	345	16x26	356	16x32	360
330	33											8x11	245	8x11	270	10x20	395	13x25	360	13x36	458	16x32	485	16x32	496	16x36	500
470	47									8x11	270	8x11	295	10x12.5	380	13x20	550	13x36	480	13x36	547						
101	100					8x11	330	8x11	370	10x12.5	470	10x17	590	10x17	645	13x30	960	16x32	835								
221	220	8x11	345	8x11	400	10x12.5	580	10x17	755	10x17	805	13x20	1090	13x20	1190	13x36	1241										
331	330	8x11	425	10x12.5	580	10x17	825	10x20	995	13x20	1230	13x20	1335	13x25	1610												
471	470	8x11	600	10x17	805	10x17	985	13x20	1375	13x20	1470	13x25	1755	13x36	2205												
102	1000	8x14	637	13x20	1465	13x20	1639	13x25	2215	13x36	2715	16x26	3125														
222	2200	13x20	1715	13x20	2017	13x36	2840	13x40	3315																		
332	3300	13x25	2225	13x30	2865	16x36	3378																				
472	4700	13x30	2775	13x40	3500	16x36	4447																				
682	6800	13x40	3565																								

EQUIVALENT SERIES RESISTANCE (ESR) (Ω)

120Hz/20°C

WV µF	6.3	10	16	25	35	50	63	100	160	250	350	400	450
3.3								32.16	60.32	60.32	20.10	20.10	20.10
4.7								22.58	42.34	42.34	14.11	14.11	14.11
10								10.61	19.90	19.90	6.634	6.634	6.634
22							4.825	4.825	9.047	9.047	3.015	3.015	3.015
33						3.216	3.216	3.216	6.032	6.032	2.010	2.010	2.010
47					2.540	2.258	2.258	2.258	4.234	4.234			
100			1.592	1.326	1.914	1.061	1.061	1.061	1.990				
220	1.206	0.904	0.723	0.603	0.543	0.482	0.482						
330	0.804	0.603	0.482	0.402	0.361	0.321	0.321						
470	0.564	0.423	0.338	0.282	0.254	0.225	0.225						
1000	0.263	0.199	0.159	0.132	0.119	0.106							
2200	0.144	0.114	0.096	0.084									
3300	0.104	0.034											
4700	0.079	0.064											
6800	0.062												