

ALUMINUM ELECTROLYTIC CAPACITORS



ER Series

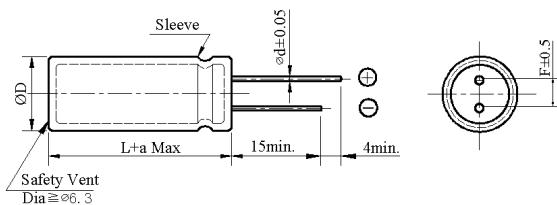
- Low impedance, high ripple current and miniature size with 7 to 9 mm height



◆ SPECIFICATIONS

Item	Performance Characteristics					
Category Temperature Range	-40 ~ +105°C					
Working Voltage Range	6.3 ~ 35Vdc					
Capacitance Range	33 ~ 470 μF					
Capacitance Tolerance	±20% (at 25°C and 120Hz)					
Dissipation Factor (tanδ) (at 25°C, 120Hz)	Rated Voltage (V)	6.3	10	16	25	35
	tanδ(Max)	0.24	0.20	0.16	0.14	0.14
	When nominal capacitance exceeds 1,000uF, add 0.02 to the value above for each 1,000uF increase.					
Leakage Current	I=0.01CV or 3 μA, whichever is greater I : Leakage current (μA) C : Rated capacitance (μF) V : Rated voltage (V) Impress the rated voltage for 2 minutes Impress the rated voltage for 2 minutes					
Low Temperature Characteristics Impedance Ratio(MAX)	Rated voltage (V)	6.3	10	16	25	35
	Z(-40°C)/Z(+20°C)	8	6	6	5	4
	(at 120Hz)					
Endurance	The following requirements shall be satisfied when the capacitor are restored to 25°C after the rated voltage applied for 3,000 hours at 105°C.					
	Capacitance change	≤ ±25% of the initial value(6.3V、10V:≤±30%)				
	Dissipation factor(tanδ)	≤ 200% of the specified value				
	Leakage current	≤ specified value				
Shelf Life	The following requirements shall be satisfied when the capacitor are restored to 25°C after exposing them for 500 hours at 105°C without voltage applied.					
	Capacitance change	≤ ±25% of the initial value(6.3V、10V:≤±30%)				
	Dissipation factor(tanδ)	≤ 200% of the specified value				
	Leakage current	≤ 200% of the specified value				
Others	Conforms to JIS-C-5101-4 (1998)					

◆ DIMENSIONS (mm)



ΦD	8×7	8×9
ΦD	ΦD + 0.5 Max	
dΦ	0.45	0.50
F	3.5	
a	L+ 1.0 Max	

◆ PART NUMBER SYSTEM (Example : 25V 220μF)

E R 1 E 2 2 1 M N N 0 8 0 9 [] [] [] []

Special Request

Size code(0809 : 8×9)

Lead length code

Lead forming Type code

Capacitance tolerance code(M: ±20%)

Capacitance code (220μF)

Voltage code(25V)

Series code(ER)

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◆ STANDARD RATINGS

WV (Vdc)	Cap (μ F)	Case Size (mm) Φ D×L	Impedance (Ω max/20°C, 100kHz)	Rated Ripple current (mA rms/ 105°C, 100kHz)	Part Number
6.3 (0J)	150	8×7	0.23	305	ER0J151MNN0807
	220	8×7	0.15	380	ER0J221MNN0807
	330	8×7	0.14	405	ER0J331MNN0807
	470	8×9	0.13	465	ER0J471MNN0809
10 (1A)	150	8×7	0.21	315	ER1A151MNN0807
	220	8×7	0.14	390	ER1A221MNN0807
	330	8×9	0.13	465	ER1A331MNN0809
	470	8×9	0.12	480	ER1A471MNN0809
16 (1C)	100	8×7	0.24	330	ER1C101MNN0807
	150	8×7	0.15	385	ER1C151MNN0807
	220	8×7	0.13	405	ER1C221MNN0807
	330	8×9	0.12	505	ER1C331MNN0809
	470	8×9	0.11	535	ER1C471MNN0809
25 (1E)	33	8×7	0.36	215	ER1E330MNN0807
	47	8×7	0.28	250	ER1E470MNN0807
	56	8×7	0.23	310	ER1E560MNN0807
	68	8×7	0.19	330	ER1E680MNN0807
	100	8×7	0.15	380	ER1E101MNN0807
	150	8×7	0.14	465	ER1E151MNN0807
	180	8×9	0.12	760	ER1E181MNN0809
	220	8×9	0.1	800	ER1E221MNN0809
30 (1F)	150	8×7	0.13	680	ER1F151MNN0807
	180	8×9	0.11	765	ER1F181MNN0809
35 (1V)	33	8×7	0.3	250	ER1V330MNN0807
	47	8×7	0.23	310	ER1V470MNN0807
	56	8×7	0.16	380	ER1V560MNN0807
	68	8×7	0.15	400	ER1V680MNN0807
	100	8×7	0.14	420	ER1V101MNN0807
	150	8×9	0.12	700	ER1V151MNN0809

◆ RIPPLE CURRENT MULTIPLIERS

Frequency Multipliers

Vdc	Cap(uF)	Frequency (Hz)			
		120	1K	10K	100K ≤ 200K
6.3 ~ 35	33 ~ 82	0.50	0.80	0.98	1.00
	100 ~ 470	0.55	0.85	0.95	1.00