

# ALUMINUM ELECTROLYTIC CAPACITOR (CD289 LM)

## LM FEATURES

- Wide temperature high frequency and low impedance
- $\Phi D \geq 8\text{mm}$  with top safety vent construction
- For switching power supplies and other industrial electronic products applications

## SPECIFICATIONS

Item	Performance Characteristics										
Rated Voltage Range	10V.DC~100V.DC					160V.DC~250V.DC					
Operating Temperature Range	-40°C~+105°C					-25°C~+105°C					
Nominal Capacitance Range	4.7 $\mu$ F~3300 $\mu$ F										
Capacitance Tolerance	$\pm 20\%$ (M,+25°C,120Hz)										
Leakage Current	Rated Working Voltage(V)	10~100					160~250				
		After application of rated voltage for 2 minutes: $I \leq 0.01CV$ or $3\mu\text{A}$ (Whichever is greater)25°C					After application of rated voltage for 2 minutes: $I \leq 0.02CV$ or $5\mu\text{A}$ (Whichever is greater)25°C				
		C: Nominal Capacitance in $\mu\text{F}$ ;					V: Rated Working Voltage in V				
Dissipation Factor (tan $\delta$ )	When capacitance is over 1000 $\mu\text{F}$ , tan $\delta$ shall be added 0.02 with increase of every 1000 $\mu\text{F}$										
	Rated Working Voltage(V)	10	16	25	35	50	63	100	160	250	
	tan $\delta$ (MAX) (25°C,120Hz)	0.20	0.16	0.14	0.12	0.10	0.09	0.08	0.15	0.15	
Temperature Stability	Rated Working Voltage(V)		10~16		25~100		160		250		
	Impedance Ratio (120Hz)	Z-25°C/Z+20°C		2		3		4		4	
		Z-40°C/Z+20°C		4		5					
Load Life	After application of rated working voltage and maximum permissible ripple current specified at +105°C for 1000 hours at +105°C, Capacitors meet the characteristics requirements measured at +25°C listed below::										
	Leakage Current					Less than the initial specified value					
	tan $\delta$					Less than 150%of the initial specified value or 0.4					
	Capacitance Change					Within $\pm 20\%$ of the initial measured value					
Shelf Life	After leaving capacitors under no load at +105°C for 500 hours, Capacitors meet the characteristics listed above.										

## MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

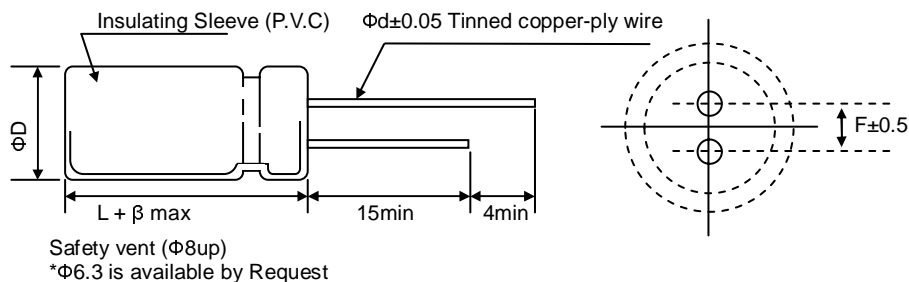
Cap( $\mu\text{F}$ )	Freq(Hz)	50(60)	100(120)	1K	10K
6.3~35		0.8	1	1.1	1.2
50~63	>1000	0.8	1	1.2	1.3
	$\leq 1000$	0.8	1	1.5	1.7
100~250	>1000	0.8	1	1.2	1.3
	$\leq 1000$	0.8	1	1.6	1.9

Temperature coefficient

Ambient Temperature(°C)	+105	+85	+65
Factor	1.0	1.7	2.1

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## CASE SIZE TABLE



$\beta$	1.0		
$\Phi D$	12	16	18
$F \pm 0.5$	5	7.5	
$\Phi d \pm 1$	0.6	0.8	
L	20	25 30	35 40
$\alpha$	2.0		

## DIMENSIONS, RATED VOLTAGE RANGE AND CAPACITANCE

V uF	6.3			10			16			25			35		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
150													12x20	0.410	210
220										12x20	0.350	240	12x20	0.280	290
330							12x20	0.280	280	12x20	0.230	330	16x25	0.185	410
470				12x20	0.245	310	12x20	0.200	370	12x20	0.160	400	16x30	0.130	540
680	12x20	0.200	360	12x20	0.170	310	12x20	0.200	370	12x20	0.160	400	16x30	0.130	540
1000	12x20	0.140	480	16x25	0.125	590	16x25	0.090	680	16x30	0.080	790	18x35	0.060	930
1500	16x25	0.090	680	16x30	0.080	790	16x30	0.060	910	18x35	0.050	1050	18x40	0.040	1220
2200	16x30	0.065	870	16x30	0.050	980	18x35	0.040	1130	18x40	0.035	1280			
3300	16x30	0.042	1100	18x35	0.035	1250	18x40	0.030	1400						

V uF	63			100			160			250			
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)	
4.7										12x20	24.470	35	
6.8										12x20	16.910	40	
10										12x20	11.540	50	
15								12x20	5.130	60	12x20	7.690	80
22								12x20	3.500	80	16x25	5.220	95
33								16x25	2.330	120	16x30	3.480	130
47					12x20	1.630	130	16x30	1.640	150	16x30	2.440	160
68					12x20	1.130	180	16x30	1.130	190	18x35	1.690	220
100	12x20	0.540	180	16x25	0.770	250	18x35	0.770	260				
150	12x20	0.360	240	16x30	0.510	340	18x40	0.510	340				
220	16x25	0.245	340	16x30	0.350	440							
330	16x30	0.160	460	18x35	0.230	590							
470	16x30	0.115	590	18x40	0.160	750							
680	18x35	0.080	770										
1000	18x40	0.055	1000										

(1) Case Size D x L (mm)

(2) Impedance at 100KHz + 20°C

(3) Max allowable ripple current (mA rms + 105°C, 100KHz)