



Type CD13 Aluminum Electrolytic Capacitors

Features and Applications:

- Long life of 2,000 hours at 105°C.
- Screw terminal type, wide temperature range.
- Suitable for computer, communication power and inverters.
- Having safety vents.

Performance and Characteristics:

Item	Characteristics		
Operating temperature range	-40~+105°C	-25~+105°C	
Rated voltage range	10~100V	160~450V	
Capacitance range	1,800~470,000μF	220~18,000μF	
Capacitance tolerance (at 20°C, 120Hz)	±20%(M)		
Leakage current (I) (at 20°C)	After 5 minutes application of rated voltage, $I \leq 0.02C_R U_R (\mu A)$ or 5mA, whichever is smaller. Where C_R : Nominal capacitance in μF, U_R : Rated voltage in V.		
Dissipation factor (tg δ) (20°C, 120Hz)	According to the below		
Low temperature characteristics (at 120Hz)	W. V. (v)		10~100
	Capacitance ratio $ZT/Z+20^\circ C$ (max.)	C-25°C/C+20°C	≥0.7
		C-40°C/C+20°C	≥0.61
Load life	The following specifications shall be satisfied when the capacitors are restored to 20°C after the rated voltage with rated ripple current for 2,000 hours at 105°C.		
	Capacitance change	≤20% of the initial value	
	tg δ	≤200% of the initial specified value	
	I	≤The initial specified value	
Shelf life	The following specifications shall be satisfied when the capacitors are restored to 20°C after exposing them at 105°C for 1,000 hours without voltage applied.		
	Capacitance change	≤20% of the initial value	
	tg δ	≤150% of the initial specified value	
	I	≤200% of the initial specified value	
Others	Satisfies characteristic W of JIS C5141		



Type CD13 Aluminum Electrolytic Capacitors

Case Size $D \times L$ (mm), D.F. And Maximum Ripple Current (A_{rms} at $105^{\circ}C$, 120Hz)

W.V.(v) Cap.(μF)	10			16			25			35			50		
	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r
3,900													35×50	0.2	2.7
4,700	1	1	1	1	1	1	1	1	1	1	1	1	35×50	0.2	2.9
5,600													35×50	0.2	3.2
6,800	1	1	1	1	1	1	1	1	1	1	1	1	35×50	0.2	3.5
8,200										35×50	0.3	3.2	35×60	0.2	3.7
10,000	1	1	1	1	1	1	1	1	1	35×50	0.3	3.5	35×80	0.25	4.7
12,000							35×50	0.25	3.5	35×60	0.3	4.1	35×80	0.25	5.1
15,000	1	1	1	1	1	1	35×50	0.35	4	35×60	0.3	4.6	35×80	0.25	5.8
18,000				35×50	0.4	4.1	35×60	0.35	4.7	35×80	0.3	5.8	42×80	0.25	7
22,000	1	1	1	35×50	0.4	4.5	35×60	0.35	5.2	35×80	0.3	6.4	42×100	0.25	8.5
27,000	35×50	0.45	4.7	35×60	0.4	5.4	35×80	0.35	6.5	42×80	0.3	7.8	42×100	0.25	9.4
33,000	35×50	0.5	4.9	35×60	0.45	5.6	35×80	0.4	6.7	42×100	0.3	9.5	50×100	0.25	11.5
39,000	35×60	0.5	5.8	35×80	0.45	6.9	42×80	0.4	8.1	42×100	0.35	9.6	50×120	0.25	13.5
47,000	35×80	0.5	7.2	35×80	0.5	7.2	42×100	0.4	9.8	50×100	0.35	11.6	50×120	0.3	13.6
56,000	35×80	0.5	7.2	42×80	0.5	8.7	42×100	0.45	10.1	50×100	0.4	11.8	65×100	0.35	14.6
68,000	42×80	0.5	8.7	42×80	0.55	9.1	50×100	0.45	12.3	50×120	0.4	14.1	65×120	0.35	17.5
82,000	42×80	0.65	9.2	42×100	0.55	11.1	50×100	0.5	12.8	65×100	0.45	15.6	65×120	0.4	19.6
100,000	42×100	0.65	11.3	42×100	0.65	11.3	50×120	0.5	15.3	65×120	0.45	18.7	76×120	0.45	20.4
120,000	42×100	0.75	11.5	50×100	0.65	13.6	65×100	0.65	15.7	65×120	0.55	18.5	76×120	0.45	22.4
150,000	50×100	0.8	13.7	50×120	0.7	15.9	65×120	0.65	19	76×120	0.65	20.8	1	1	1
180,000	50×120	0.8	16.3	50×120	0.8	16.3	65×120	0.8	18.8	76×120	0.8	20.5	1	1	1
220,000	50×120	0.85	17.4	65×120	0.85	20.2	76×120	0.85	22	1	1	1	1	1	1
270,000	65×120	1	20.6	65×120	1	20.6	76×120	1	22.5	1	1	1	1	1	1
330,000	76×120	1.2	20.8	76×120	1.3	21.8	1	1	1	1	1	1	1	1	1
390,000	76×120	1.5	22.1	76×120	1.5	22.1	1	1	1	1	1	1	1	1	1
470,000	76×120	1.8	22.1	76×140	1.6	25.1	1	1	1	1	1	1	1	1	1



Type CD13 Aluminum Electrolytic Capacitors

Case Size D×L(mm), D.F. And Maximum Ripple Current (A rms/at 105°C, 120Hz)

W.V.(v) Cap.(μF)	63			80			100			160			200		
	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r
330													35×50	0.15	0.8
470	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	35×50	0.15	0.9
560													35×50	0.15	1
680	↓	↓	↓	↓	↓	↓	↓	↓	↓	35×50	0.15	1.3	35×50	0.15	1.1
1,000										35×50	0.15	1.6	35×60	0.15	1.5
1,200	↓	↓	↓	↓	↓	↓	↓	↓	↓	35×60	0.15	1.8	35×60	0.15	1.6
1,500										35×60	0.15	2.1	35×80	0.15	2
1,800	↓	↓	↓	↓	↓	↓	35×50	0.1	2.6	35×80	0.15	2.6	35×80	0.15	2.2
2,200				35×50	0.15	2.3	35×50	0.1	2.8	35×80	0.15	2.8	42×80	0.15	2.7
2,700	35×50	0.2	2.2	35×50	0.15	2.6	35×60	0.1	3.4	42×80	0.15	3.5	42×100	0.15	3.3
3,300	35×50	0.2	2.5	35×50	0.15	2.8	35×60	0.1	4.3	42×100	0.2	3.7	42×100	0.15	3.3
3,900	35×50	0.2	2.7	35×60	0.15	3.3	35×80	0.12	4.2	42×100	0.2	4	50×100	0.15	3.9
4,700	35×50	0.2	2.9	35×60	0.15	3.7	35×80	0.12	5.1	50×100	0.2	4.8	65×100	0.2	5
5,600	35×60	0.2	3.5	35×80	0.15	4.5	42×80	0.12	5.6	50×100	0.2	5.3	65×100	0.2	5.5
6,800	35×60	0.2	3.8	35×80	0.15	5	42×100	0.15	6.1	50×120	0.2	6.3	65×120	0.2	6.5
8,200	35×80	0.2	4.8	42×80	0.2	5.3	42×100	0.15	6.7	65×100	0.2	7.4	65×120	0.2	7.2
10,000	35×80	0.2	5.3	42×100	0.2	6.4	50×100	0.15	8.2	65×120	0.2	8.9	76×120	0.2	8.7
12,000	42×80	0.25	5.7	42×100	0.2	7	50×120	0.15	9.7	76×100	0.2	9.8	76×120	0.2	9.5
15,000	42×100	0.25	7	50×100	0.2	8.7	50×120	0.15	10.8	76×120	0.2	11.9			
18,000	42×100	0.25	7.7	50×120	0.2	10.3	65×100	0.2	11	76×140	0.2	13.9	↓	↓	↓
22,000	50×100	0.25	9.4	50×120	0.2	11.4	65×120	0.2	13.1						
27,000	50×120	0.25	11.3	65×100	0.25	12	65×120	0.25	14.2	↓	↓	↓	↓	↓	↓
33,000	50×120	0.25	12.5	76×100	0.25	14.6	76×120	0.25	15.7						
39,000	35×100	0.3	13.2	76×100	0.3	14.4	76×140	0.25	18.3	↓	↓	↓	↓	↓	↓
47,000	65×120	0.3	15.7	76×120	0.3	17.1									
56,000	65×120	0.3	17.1	76×120	0.3	18.7	↓	↓	↓	↓	↓	↓	↓	↓	↓
68,000	76×120	0.35	19.1												
82,000	76×140	0.4	21	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

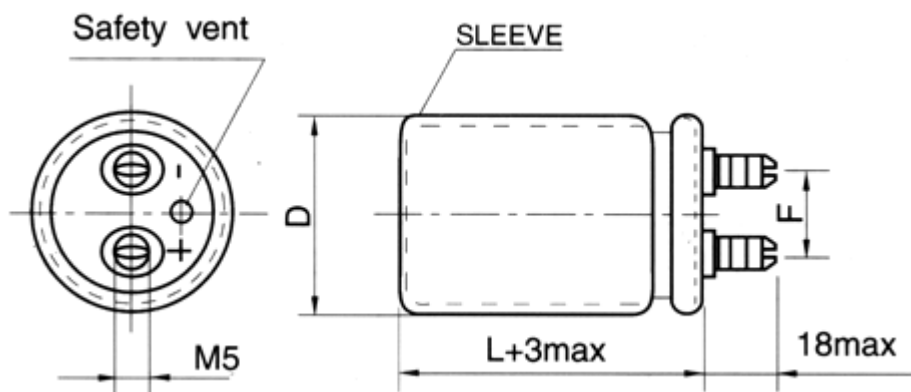
Type CD13 Aluminum Electrolytic Capacitors

Case Size $D \times L$ (mm), D.F. And Maximum Ripple Current (A_{rms} /at 105°C , 120Hz)

W.V.(v) Cap.(μF)	250			315			350			400		
	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r	D×L	tg δ	I _r
220				35×50	0.1	0.9	35×50	0.1	0.9	35×50	0.1	0.9
330	35×50	0.15	0.9	35×50	0.1	1.1	35×50	0.1	1.1	35×60	0.1	1.2
470	35×50	0.15	1.1	35×60	0.1	1.4	35×60	0.1	1.4	35×80	0.1	1.6
560	35×50	0.15	1.2	35×60	0.1	1.5	35×60	0.1	1.5	35×80	0.1	1.8
680	35×60	0.15	1.4	35×80	0.1	1.9	35×80	0.15	1.6	42×80	0.15	1.7
1,000	35×80	0.2	1.7	42×80	0.15	2.1	42×100	0.15	2.3	42×100	0.15	2.3
1,200	35×80	0.2	1.8	42×100	0.15	2.6	42×100	0.15	2.6	50×100	0.15	2.8
1,500	42×80	0.2	2.2	42×100	0.15	2.9	50×100	0.15	3.2	50×100	0.15	3.2
1,800	42×100	0.2	2.7	50×100	0.15	3.5	50×120	0.15	3.8	65×100	0.15	4
2,200	42×100	0.2	3	50×120	0.15	4.2	50×120	0.15	4.2	65×100	0.15	4.4
2,700	50×100	0.2	3.7	50×120	0.15	4.6	65×100	0.15	4.9	65×120	0.15	5.3
3,300	50×120	0.2	4.4	65×100	0.15	5.4	65×120	0.15	5.9	76×120	0.15	6.4
3,900	50×120	0.2	4.8	65×120	0.15	6.4	76×120	0.15	7	76×140	0.15	7.5
4,700	65×100	0.2	6.1	76×100	0.15	7.1	76×120	0.15	7.7	76×140	0.15	8.2
5,600	65×120	0.2	6.6	76×120	0.15	8.4	76×140	0.15	8.9			
6,800	76×120	0.2	8	76×140	0.15	9.9						
8,200	76×120	0.2	8.8									

Ripple Current Multipliers

Dimensions



D±1.5	35			42		50			65		76		
L	50	60	80	80	100	80	100	120	100	120	100	120	140
F±0.5	14			15		22			28		32		

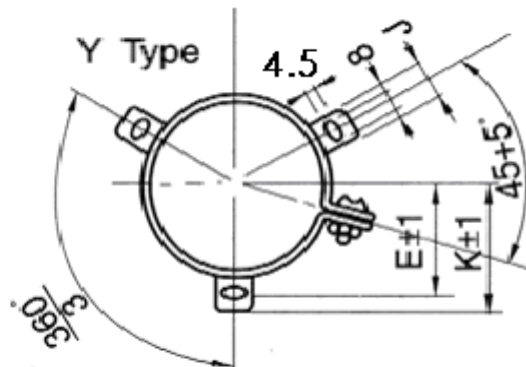
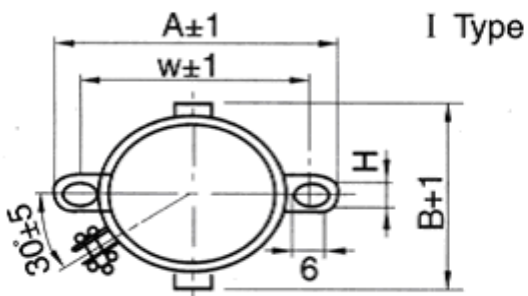
Frequency multiplying factor

W. V. (v)	φ D	Freq.(Hz)					
		50	60	120	360	1K	≥10K
10~50	35 42	0.95	0.96	1	1.03	1.04	1.04
	50 65	0.97	0.98	1	1.02	1.03	1.03
	76	0.98	0.99	1	1.02	1.03	1.03
63~100	35 42	0.9	0.94	1	1.09	1.03	1.15
	50 65	0.93	0.97	1	1.06	1.1	1.13
	76	0.95	0.98	1	1.03	1.08	1.08
160~250	35 42	0.71	0.79	1	1.1	1.15	1.21
	50 65	0.83	0.88	1	1.08	1.13	1.2
	76	0.85	0.9	1	1.06	1.11	1.2
350~450	35 42	0.65	0.74	1	1.1	1.16	1.22
	50 65	0.81	0.87	1	1.08	1.13	1.21
	76	0.85	0.9	1	1.06	1.11	1.2

Temperature multiplying factor

Temperature(°C)	45	60	70	85	105
Factor	2.47	2.37	2.17	1.67	1

Mounting clamp



φD	A	B	W	H
35	62	44	50	3.2
42	64	50	54	3.5
50	80	64	68	4.5
65(63.5)	93	76	81	4.5

φD	E	K	J
50	32.5	37	14
65(63.5)	38	43.5	14
76	44.5	50.5	14