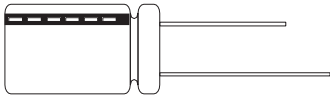




CADF SERIES: Low Impedance

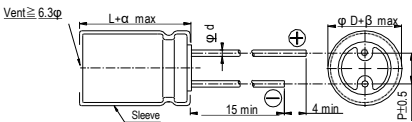


FEATURES

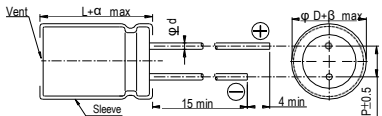
- ◆ Long life, 105 °C, 4,000 ~ 10,000 hours assured
- ◆ Low Impedance, suitable for switching power supplies
- ◆ Smaller size with large permissible ripple current

SPECIFICATIONS

Items	Performance										
Life	at 105 °C 4,000 ~ 10,000 Hours										
Operating Temp.	-55 °C ~ +105 °C										
Capacitance Tolerance	±20% (at 120Hz, 20 °C)										
Leakage Current (at 20 ° C)	I = - 0.1CV or 3 (μA) whichever is greater (after 2 minutes) Where C = rated capacitance in μF. V = rated DC working voltage in V.										
Dissipation Factor (Tan φ at 120Hz, 20°C)	Rated Voltage	6.3	10	16	25	35	50	63			
	Tan φ (max)	0.22	0.19	0.16	0.14	0.12	0.10	0.09			
Low Temperature Characteristics (at 120Hz)	Impedance ratio shall not exceed the values given in the table below.										
	Rated Voltage				6	10	16	25	35	50	63
	Impedance Ratio	Z (-25°C) / Z (+20 °C)			3	3	3	3	3	3	3
Load Life Test	Test Time	6.3 ~ 10V	4,000 Hrs for D = 5 ~ 6.3mm								
			6,000 Hrs for D = 8 ~ 10mm								
			8,000 Hrs for D ≥12.5mm								
		16 ~ 63V	5,000 Hrs for D = 5 ~ 6.3mm								
			7,000 Hrs for D = 8 ~ 10mm								
			10,000 Hrs for D ≥ 12.5mm								
	Capacitance Change		Within ± 25% of initial value								
	Dissipation Factor		Less than 200% of specified value								
	Leakage Current		Within specified value								
	* The above specifications shall be satisfied when the capacitors are restored to 20 ° C after the rated voltage applied with rated ripple current for 4,000 ~ 10,000hrs at 105 °C.										
Shelf Life Test	Test Time		1,000 hours								
	Capacitance Change		Within ± 25% of initial value								
	Dissipation Factor		Less than 200% of specified value								
	Leakage Current		Within specified value								
	* The above specifications shall be satisfied when the capacitors are restored to 20 °C after exposing them for 1,000 hrs at 105 °C without voltage applied. The rated voltage shall be applied to the capacitors before the measurements. (Refer to JIS C 5101-4 4.1).										
Ripple Current & Frequency Multipliers	Cap. (μF)	Freq. (Hz)	120	1K	10K	100K up					
		under ~ 33	0.42	0.70	0.90	1.0					
		39 ~ 270	0.50	0.73	0.92	1.0					
		330 ~ 680	0.55	0.77	0.94	1.0					
		820 ~ 1,800	0.60	0.80	0.96	1.0					
		2,200 ~ 18,000	0.70	0.85	0.98	1.0					
Other Standards	JIS C 5101-4										



The case size of 12.5×16, 16×16, 16×20, 18×16, 18×20 and 18×25 are suitable for below diagram:



DIMENSIONS

Unit: mm

φD	5	6.3	8	10	12.5	16	18
P	2.0	2.5	3.5	5.0	5.0	7.5	7.5
φd	0.5		0.6			0.8	
α	1.0			L < 20:1.5, L ≥ 20:2.0			
β	0.5						



CADF SERIES: Low Impedance

DIMENSIONS & PERMISSIBLE RIPPLE CURRENT AND MAX IMPEDANCE

Dimension: ϕD x L(mm) Ripple Current: mA/rms at 100Hz, 105°C

V.DC Contents μ F		6.3V (0J)				10V (1A)				16V (1C)				25V (1E)			
		φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA /rms, 105°C)	φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA /rms, 105°C)	φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA /rms, 105°C)	φ D x L	Impedance (Ω, Max / 100kHz)		Ripple Current (mA /rms, 105°C)
			20°C	-10°C	100k Hz		20°C	-10°C	100k Hz		20°C	-10°C	100k Hz		20°C	-10°C	100k Hz
47	476													5 x 11	0.58	1.16	210
56	566																
100	107				5 x 11	0.58	1.16	210						6.3 x 11	0.22	0.44	340
120	127								6.3 x 11	0.22	0.44	340					
150	157	5 x 11	0.58	1.16	210												
220	227				6.3 x 11	0.22	0.44	340						8 x 11.5	0.11	0.22	640
330	337	6.3 x 11	0.22	0.44	340				8 x 11.5	0.11	0.22	640	8 x 15 10 x 13	0.083 0.080	0.166 0.160	840 865	
470	477				8 x 11.5	0.11	0.22	640	8 x 15 10 x 12.5	0.083 0.080	0.166 0.16	840 865	8 x 20 10 x 16	0.064 0.060	0.128 0.120	1,050 1,210	
680	687	8 x 12	0.11	0.22	640	8 x 15 10 x 12.5	0.083 0.080	0.166 0.160	840 865	8 x 20 10 x 16	0.064 0.060	0.128 0.120	1,050 1,210	10 x 20 12.5x16	0.046 0.049	0.092 0.098	1,400 1,450
820	827	10 x 12.5	0.080	0.16	865									10 x 25	0.042	0.084	1,650
1,000	108	8 x 15	0.087	0.174	840	8 x 20 10 x 16	0.064 0.060	0.128 0.120	1,050 1,210	10 x 20 12.5 x 16	0.046 0.049	0.092 0.098	1,400 1,450	10 x 30 12.5x20 16x16	0.031 0.035 0.042	0.062 0.070 0.084	1,910 1,900 1,940
1,200	128	8 x 20 10 x 16	0.069 0.060	0.128 0.120	1,050 1,210	10 x 20	0.046	0.092	1,400	10 x 25	0.042	0.084	1,650	18 x 16	0.043	0.086	2,210
1,500	158	10 x 20	0.046	0.092	1,400	10 x 25 12.5 x 16	0.042 0.049	0.084 0.090	1,650 1,450	10 x 30 12.5x20 16x16	0.031 0.035 0.042	0.062 0.070 0.084	1,910 1,900 1,940	12.5 x 25	0.027	0.054	2,230
1,800	188	12.5 x 16	0.045	0.090	1,450									12.5 x 30 16 x 20	0.024 0.027	0.048 0.054	2,650 2,530
2,200	228	10 x 25	0.042	0.084	1,650	10 x 30 12.5x20 16x16	0.031 0.035 0.042	0.062 0.070 0.084	1,910 1,900 1,940	12.5 x 25 18 x 16	0.027 0.043	0.054 0.086	2,230 2,210	12.5 x 35 18 x 20	0.020 0.026	0.040 0.052	2,880 2,860
2,700	278	10 x 30 16 x 16	0.031 0.042	0.062 0.084	1,910 1,940	18 x 16	0.043	0.086	2,210	12.5 x 30 16 x 20	0.024 0.027	0.048 0.054	2,650 2,530	12.5 x 40 16 x 25	0.017 0.021	0.034 0.042	3,350 3,610
3,300	338	12.5 x 20	0.035	0.070	1,900	12.5 x 25	0.027	0.054	2,230	12.5 x 35	0.020	0.040	2,880	16 x 31.5 18 x 25	0.017 0.019	0.034 0.038	3,450 3,140
3,900	398	12.5 x 25 18 x 16	0.027 0.043	0.054 0.086	2,230 2,210	12.5 x 30 16 x 20	0.024 0.027	0.048 0.054	2,650 2,530	12.5 x 40 16 x 25 18 x 20	0.017 0.021 0.026	0.034 0.042 0.052	3,350 2,930 2,860	16 x 35.5 18 x 31.5	0.015 0.015	0.030 0.030	3,610 4,170
4,700	478	12.5 x 30	0.024	0.048	2,650	12.5 x 35	0.020	0.040	2,880	16 x 31.5 18 x 25	0.017 0.019	0.034 0.038	3,450 3,140	16 x 40 18 x 35.5	0.013 0.014	0.026 0.028	4,080 4,220
5,600	568	12.5 x 35 16 x 20	0.02 0.027	0.040 0.054	2,880 2,530	12.5 x 40 16 x 25 18 x 20	0.017 0.021 0.026	0.034 0.042 0.052	3,350 2,930 2,860	16 x 35.5 18 x 31.5	0.015 0.015	0.030 0.030	3,610 4,170	18 x 40	0.012	0.024	4,280
6,800	688	12.5 x 40 16 x 25 18 x 20	0.017 0.021 0.026	0.034 0.042 0.052	3,350 2,930 2,860	16.0 x 31.5 18 x 25	0.017 0.019	0.034 0.038	3,450 3,140	16 x 40	0.013	0.026	4,080				
8,200	828	16 x 31.5	0.017	0.034	3,450	16 x 35.5 18 x 31.5	0.015 0.015	0.030 0.030	3,610 4,170	18 x 35.5	0.014	0.020	4,220				
10,000	109	16 x 35.5 18 x 25	0.015 0.019	0.030 0.038	3,610 3,140	16 x 31.5 18 x 25	0.017 0.019	0.034 0.038	3,450 3,140	16 x 40	0.013	0.026	4,080				
12,000	129	16 x 40 18 x 31.5	0.013 0.015	0.026 0.030	4,080 4,170	18 x 40	0.012	0.024	4,280								
15,000	159	18 x 35.5	0.014	0.028	4,220												
18,000	189	18 x 40	0.012	0.024	4,280												

Note: Case size in mark of " * " is downsize



CADF SERIES: Low Impedance

DIMENSIONS & PERMISSIBLE RIPPLE CURRENT AND MAX IMPEDANCE

Dimension: φD x L(mm) Ripple Current: mA/rms at 100Hz, 105°C

V. DC Contents μF		35V (1V)				50V (1H)				63V (1J)			
		φ D × L	Impedance (Ω, Max /100kHz)		Ripple Current (mA /rms, 105°C) 100kHz	φ D × L	Impedance (Ω, Max /100kHz)		Ripple Current (mA /rms, 105°C) 100kHz	φ D × L	Impedance (Ω, Max /100kHz)		Ripple Current (mA /rms, 105°C) 100kHz
			20°C	-10°C			20°C	-10°C			20°C	-10°C	
2.2	225					5 x 11	3.3	6.6	43				
3.3	335					5 x 11	2.9	5.8	53				
4.7	475					5 x 11	2.5	5.0	95				
10	106					5 x 11	2	4.0	130				
15	156									5 x 11	1.2	2.4	165
22	226					5 x 11	0.91	1.82	180				
33	336	5 x 11	0.58	1.16	210					6.3 x 11	0.49	0.98	265
56	566	6.3 x 11	0.22	0.44	340	6.3 x 11	0.39	0.78	295	8 x 12	0.31	0.62	500
82	826									8 x 15 10 x 12.5	0.22 0.150	0.44 0.3	665 690
100	107					8 x 12	0.220	0.440	555				
120	127					8 x 15	0.150	0.300	730	8 x 20.0 10 x 16.0	0.170 0.110	0.340 0.220	820 950
150	157	8 x 11.5	0.110	0.220	640	10 x 12.5	0.160	0.320	760				
180	187					8 x 20	0.118	0.236	910	10 x 20.0 12.5 x 16.0	0.078 0.101	0.156 0.202	1,150 1,150
220	227	8 x 15 10 x 12.5	0.083 0.080	0.166 0.160	840 865	10 x 16	0.110	0.220	1,050	10 x 25	0.064	0.128	1,350
270	277	8 x 20	0.064	0.128	1,050	10.0 x 20 12.5 x 60	0.078 0.079	0.156 0.158	1,220 1,260	12.5 x 20	0.057	0.114	1,500
330	337	10 x 16	0.060	0.120	1,210	10 x 25	0.072	0.144	1,440				
390	397									12.5 x 20	0.057	0.114	1,500
470	477	10 x 20 12.5 x 16	0.046 0.049	0.092 0.098	1,400 1,450	10 x 30 12.5 x 20 16 x 16	0.056 0.059 0.072	0.112 0.118 0.114	1,690 1,660 1,690	12.5 x 30 16 x 20	0.039 0.04	0.078 0.090	2,300 2,000
560	567	10 x 25	0.042	0.084	1,650	12.5 x 25 18 x 16	0.044 0.070	0.088 0.140	1,950 1,930	12.5 x 35	0.034	0.068	2,500
680	687	10 x 25 10 x 30 12.5 x 20 16 x 16	0.030 0.031 0.035 0.042	0.060 0.062 0.070 0.084	2,200 2,200 1,900 1,940	12.5 x 30	0.039	0.078	2,310	12.5 x 40 16 x 25 18 x 20	0.029 0.035 0.042	0.058 0.070 0.084	2,800 2,600 2,500
820	827	10 x 25	0.03	0.060	2,200	12.5 x 35 16 x 20	0.033 0.044	0.066 0.088	2,510 2,210	16 x 31.5 18 x 25	0.029 0.034	0.058 0.068	2,850 2,800
1,000	108	12.5 x 25 18 x 16	0.027 0.043	0.054 0.086	2,230 2,210	12.5 x 40 16 x 25 18 x 20	0.027 0.033 0.047	0.054 0.066 0.094	2,920 2,555 2,490	16 x 35.5	0.027	0.054	2,900
1,200	128	12.5 x 30 16 x 20	0.024 0.027	0.048 0.054	2,650 2,530	16 x 31.5 18 x 25	0.027 0.028	0.054 0.056	3,010 2,740	16 x 40 18 x 31.5	0.025 0.028	0.050 0.056	3,400 3,300
1,500	158	12.5 x 25	0.024	0.040	2,530	16 x 35.5	0.024	0.048	3,150	18 x 35.5	0.025	0.050	3,400
1,800	188	12.5 x 35 16 x 25 18 x 20	0.017 0.021 0.026	0.034 0.042 0.052	3,350 2,930 2,860	16 x 40 18 x 31.5	0.021 0.024	0.042 0.048	3,710 3,635	18 x 40	0.024	0.048	3,500
2,200	228	16 x 31.5 18 x 25	0.017 0.019	0.034 0.038	3,450 3,140	18 x 35.5	0.022	0.044	3,680				
2,700	278	16 x 35.5 18 x 31.5	0.015 0.015	0.030 0.030	3,610 4,170	18 x 40	0.018	0.036	3,800				
3,300	338	16 x 40 18 x 35.5	0.013 0.014	0.026 0.028	4,080 4,220								
3,900	398	18 x 40	0.012	0.024	4,280								

PART NUMBER EXAMPLE

CADF 108 M 1C B 100 200

Code	Lead Forming Type
O	Bulk
T	5mm Chip tape
A	(Φ4~Φ6.3)2.5mm tape
F	(Φ4~Φ8)5mm tape
P	Φ≥Φ8mm original(vertical)tape
M	5mm Lead forming
C	C Lead forming
B	B Lead forming
D	(Φ4~Φ8)2.5mm Lead forming

Note: Case size in mark of " " is downsize