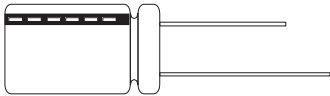




CADF SERIES: Low Impedance

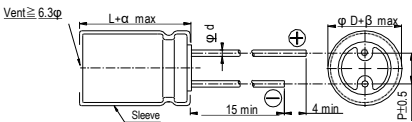


FEATURES

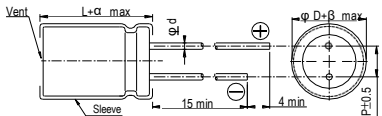
- ◆ Long life, 105 °C, 4,000 ~ 10,000 hours assured
- ◆ Low Impedance, suitable for switching power supplies
- ◆ Smaller size with large permissible ripple current

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 $\geq$ 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) 100k Hz	φ D x L		Impedance (Ω, Max / 100kHz)		Ripple Current (mA /rms, 105°C) 100k Hz	φ D x L		Impedance (Ω, Max / 100kHz)		Ripple Current (mA /rms, 105°C) 100k Hz	φ D x L		Impedance (Ω, Max / 100kHz)		Ripple Current (mA /rms, 105°C) 100k Hz
			20°C	-10°C				20°C	-10°C				20°C	-10°C				20°C	-10°C	
47	470															5 x 11	0.58	1.16	210	
56	560																			
100	101					5 x 11	0.58	1.16	210							6.3 x 11	0.22	0.44	340	
120	121										6.3 x 11	0.22	0.44	340						
150	151	5 x 11	0.58	1.16	210															
220	221					6.3 x 11	0.22	0.44	340							8 x 11.5	0.11	0.22	640	
330	331	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	471					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	681	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 12.5 x 16	0.046 0.049	0.092 0.098	1,400 1,450	
820	821	10 x 12.5	0.080	0.16	865											10 x 25	0.042	0.084	1,650	
1,000	102	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 12.5 x 20 16 x 16	0.031 0.035 0.042	0.062 0.070 0.084	1,910 1,900 1,940	
1,200	122	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	152	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 12.5 x 20 16 x 16	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	182	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	222	10 x 25	0.042	0.084	1,650	10 x 30 12.5 x 20 16 x 16	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	272	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	332	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	392	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	472	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	562	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	682	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	822	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	103	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	123	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	153	18 x 35.5	0.014	0.028	4,220															
18,000	183	18 x 40	0.012	0.024	4,280															

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



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	2R2					5 x 11	3.3	6.6	43				
3.3	3R3					5 x 11	2.9	5.8	53				
4.7	4R7					5 x 11	2.5	5.0	95				
10	101					5 x 11	2	4.0	130				
15	151									5 x 11	1.2	2.4	165
22	220					5 x 11	0.91	1.82	180				
33	330	5 x 11	0.58	1.16	210					6.3 x 11	0.49	0.98	265
56	560	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	820									8 x 15 10 x 12.5	0.22 0.150	0.44 0.3	665 690
100	101					8 x 12	0.220	0.440	555				
120	121					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	151	8 x 11.5	0.110	0.220	640	10 x 12.5	0.160	0.320	760				
180	181					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	221	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	271	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	331	10 x 16	0.060	0.120	1,210	10 x 25	0.072	0.144	1,440				
390	391									12.5 x 20	0.057	0.114	1,500
470	471	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	561	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	681	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	821	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	102	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	122	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	152	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	182	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 25	0.021 0.024	0.042 0.048	3,710 3,635	18 x 40	0.024	0.048	3,500
2,200	222	16 x 31.5 18 x 25	0.017 0.019	0.034 0.038	3,450 3,140	18 x 25	0.028	0.044	3,570				
2,700	272	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	332	16 x 40 18 x 35.5	0.013 0.014	0.026 0.028	4,080 4,220								
3,900	392	18 x 40	0.012	0.024	4,280								

Note: Case size in mark of " " is downsize

PART NUMBER EXAMPLE

CADF 102 M 1C O 100 200