PN (CD135)

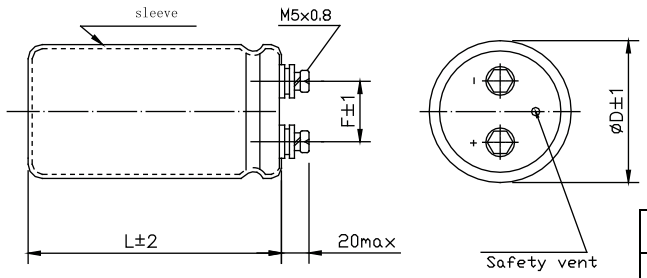
◎ High ripple current ,Size may be selected ,Load life of 2000 hours at 85°C.
Used large power source converter circuit.etc.

◎ Adapted to the ROHS directive (2002/95/EC).

Specifications

Item	Performance Characteristics	
Operating temperature range	-40°C ~+ 85°C	-25°C ~ +85°C
Rated voltage range	10 ~ 250 V	315 ~ 450 V
Capacitance tolerance	±20% (120Hz, +20°C)	
Leakage current	I ≤ 0.02CV (μA) 5mA 5 (at 20°C, after 5 minutes ,Whichever is smaller)	
(tgδ) Dissipation factor (+20°C, 120Hz)	Less than the value specified in the standard products tables	
Load life	After applying rated voltage for 2000 hours at +85°C and then resumed 16 hours: Capacitance change : ±20% Initial measured value Leakage current : ≤ Initial specified value Dissipation factor : ≤ 2 times Initial specified value	
Shelf life	After storage for 1000 hours at +85°C , U_R to be applied for 30 minutes and then resumed 16 hours Capacitance change : ±20% Initial measured value Leakage current : ≤ Initial specified value Dissipation factor : ≤ 2times Initial specified value	

Case size table



φD	35	51	63.5	76	89
F	12.7	22	28.6	32	32

MULTIPLIER FOR RIPPLE CURRENT

Frequency coefficient

Frequency (Hz) / Reted Voltage (V)	50	100(120)	300	1k	3k	5K	10K	20K
10~50	0.95	1.00	1.04	1.10	1.12	1.13	1.15	1.15
63~100	0.95	1.00	1.06	1.16	1.20	1.25	1.30	1.36
160~200	0.90	1.00	1.10	1.20	1.35	1.40	1.50	1.55
250~450	0.80	1.00	1.10	1.20	1.35	1.40	1.50	1.55

Temperature coefficient

Temperature(°C) / Rated Voltage(V)	+40	+55	+70	+85
10~100	2.1	1.8	1.5	1.0
160~450	2.6	2.2	1.7	1.0

Dimensions

Rated Voltage (V.D.C)	Surge Voltage (V.D.C)	Rated Capacitance (μ F)	Dissipation Factor MAX	Ripple Current 85°C 120Hz	Outline Size	
					Code	φ D×L(mm)
10	13	33000	0.80	4.3	A5	35x50
		39000	0.80	4.7	A5	35x50
		47000	0.80	5.2	A6	35x65
		56000	0.80	6.1	A8	35x80
		68000	0.80	6.7	A8	35x80
		82000	0.80	7.7	A10	35x100
		100000	0.80	8.8	A10	35x100
		120000	0.80	10.0	A12	35x120
		150000	1.00	10.8	A12	35x120
		180000	1.00	12.0	C10R	51x95
		220000	1.50	11.2	C12	51x120
		270000	1.50	12.8	C12	51x120
		330000	1.50	15.3	D10R	63.5x95
		390000	1.50	17.3	D12R	63.5x115
		470000	2.00	16.7	D13R	63.5x130
		560000	2.00	19.0	E12R	76x115
		680000	2.00	21.7	E13R	76x130
		820000	2.00	24.7	E16R	76x155
16	20	22000	0.60	4.1	A5	35x50
		27000	0.60	4.5	A5	35x50
		33000	0.60	5.0	A5	35x50
		39000	0.60	5.9	A6	35x65
		47000	0.60	6.4	A8	35x80
		56000	0.60	7.3	A8	35x80
		68000	0.60	8.4	A10	35x100
		82000	0.80	8.3	A10	35x100
		100000	0.80	9.5	A12	35x120
		120000	0.80	10.9	A12	35x120
		150000	1.00	11.3	C10R	51x95
		180000	1.00	12.8	C12R	51x115
		220000	1.00	15.3	C13R	51x130
		270000	1.00	17.6	D10R	63.5x95
		330000	1.50	16.8	D12R	63.5x115
		390000	1.50	18.3	D13R	63.5x130
		470000	1.50	21.3	E12R	76x120
		560000	1.50	23.6	E13R	76x130
		680000	1.50	27.6	E16R	76x155
		820000	2.00	27.1	F16R	89x155
25	32	15000	0.50	3.7	A5	35x50
		18000	0.50	4.1	A5	35x50
		22000	0.50	4.5	A5	35x50
		27000	0.50	5.0	A6	35x65
		33000	0.50	5.9	A8	35x80
		39000	0.50	6.7	A8	35x80
		47000	0.50	7.7	A10	35x100
		56000	0.60	7.9	A10	35x100
		68000	0.60	9.1	A12	35x120
		82000	0.60	10.4	A12	35x120
		100000	0.80	10.3	C10R	51x95
		120000	0.80	11.7	C12R	51x115

Dimensions

Rated Voltage (V.D.C)	Surge Voltage (V.D.C)	Rated Capacitance (μ F)	Dissipation Factor MAX	Ripple Current 85°C 120Hz	Outline Size	
					Code	ϕ DxL(mm)
25	32	150000	0.80	14.1	C13R	51x130
		180000	0.80	15.7	D10R	63.5x95
		220000	1.00	16.1	D12R	63.5x115
		270000	1.00	18.6	D13R	63.5x130
		330000	1.00	21.9	D16R	63.5x155
		390000	1.20	22.0	E12R	76x120
		470000	1.20	25.6	E13R	76x155
		560000	1.20	27.9	E16R	89x130
		680000	1.20	32.5	F16R	89x155
35	44	10000	0.40	3.4	A5	35x50
		12000	0.40	3.7	A5	35x50
		15000	0.40	4.2	A6	35x65
		18000	0.40	4.9	A8	35x80
		22000	0.40	5.7	A8	35x80
		27000	0.40	6.3	A10	35x100
		33000	0.40	7.2	A10	35x100
		39000	0.50	7.3	A12	35x120
		47000	0.50	8.7	C10R	35x120
		56000	0.60	8.6	C10R	51x95
		68000	0.60	9.8	C12R	51x95
		82000	0.60	11.6	D10R	51x115
		100000	0.60	13.3	D12R	63.5x95
		120000	0.60	14.8	D12	63.5x115
		150000	0.80	14.9	D13R	63.5x120
		180000	0.80	17.0	E12R	63.5x130
		220000	0.80	20.0	E13R	76x115
		270000	1.00	20.3	E16R	76x130
		330000	1.00	23.5	F13R	76x155
		390000	1.00	26.4	F16R	89x130
		470000	1.00	29.6	F16R	89x155
50	63	5600	0.30	3.0	A5	35x50
		6800	0.30	3.3	A5	35x50
		8200	0.30	3.6	A5	35x50
		10000	0.30	4.0	A6	35x65
		12000	0.30	4.7	A8	35x80
		15000	0.30	5.5	A8	35x80
		18000	0.30	6.2	A10	35x100
		22000	0.40	6.3	A12	35x120
		27000	0.40	7.1	A12	35x120
		33000	0.40	8.2	C10R	51x95
		39000	0.50	8.1	C10R	51x95
		47000	0.50	9.3	C12R	51x115
		56000	0.50	10.5	D10R	63.5x95
		68000	0.50	12.0	D10R	63.5x95
		82000	0.50	13.7	D12R	63.5x115
		100000	0.60	14.7	E12R	76x115
		120000	0.60	16.7	E12	76x120
		150000	0.60	19.3	E13R	76x130
		180000	0.60	21.9	E16R	76x155
		220000	0.60	21.4	F13R	89x130

Dimensions

Rated Voltage (V.D.C)	Surge Voltage (V.D.C)	Rated Capacitance (μF)	Dissipation Factor MAX	Ripple Current 85°C 120Hz	Outline Size	
					Code	φ DxL(mm)
50	63	270000	0.60	24.6	F16R	89x155
63	72	3900	0.25	2.7	A5	35x50
		4700	0.25	3.0	A5	35x50
		5600	0.25	3.3	A5	35x50
		6800	0.25	3.6	A6	35x65
		8200	0.25	4.3	A8	35x80
		10000	0.25	4.9	A8	35x80
		12000	0.25	5.6	A10	35x100
		15000	0.30	5.9	A10	35x100
		18000	0.30	6.7	A12	35x120
		22000	0.30	7.8	A12	35x120
		27000	0.40	7.4	C10R	51x95
		33000	0.40	8.4	C10R	51x95
		39000	0.40	9.5	C12R	51x115
		47000	0.40	11.3	C13R	51x130
		56000	0.40	12.8	D12R	63.5x115
		68000	0.50	12.7	D12	63.5x120
		82000	0.50	14.5	D13R	63.5x130
		100000	0.50	16.7	E12R	76x115
		120000	0.50	18.9	E13R	76x130
		150000	0.50	22.4	E16R	76x155
		180000	0.60	22.4	F13R	89x130
		220000	0.60	26.2	F16R	89x155
80	100	3300	0.25	2.5	A5	35x50
		3900	0.25	2.8	A5	35x50
		4700	0.25	3.0	A6	35x65
		5600	0.25	3.6	A8	35x80
		6800	0.25	3.9	A8	35x80
		8200	0.25	4.5	A8	35x80
		10000	0.25	5.2	A10	35x100
		12000	0.25	5.9	A10	35x100
		15000	0.25	6.8	A12	35x120
		18000	0.25	7.8	A12	35x120
		22000	0.30	8.0	C10R	51x95
		27000	0.30	9.2	C10R	51x95
		33000	0.30	10.5	C12R	51x115
		39000	0.30	12.0	C13R	51x130
		47000	0.30	13.6	D12R	63.5x115
		56000	0.40	13.4	D13R	63.5x130
		68000	0.40	15.4	E12R	76x115
		82000	0.40	17.5	E13R	76x130
		100000	0.40	20.5	E16R	76x155
		120000	0.40	22.7	F13R	89x130
		150000	0.40	26.5	F16R	89x155
100	125	1800	0.25	1.9	A5	35x50
		2200	0.25	2.1	A5	35x50
		2700	0.25	2.3	A5	35x50
		3300	0.25	2.6	A6	35x65
		3900	0.25	3.0	A8	35x80
		4700	0.25	3.5	A8	35x80

Dimensions

Rated Voltage (V.D.C)	Surge Voltage (V.D.C)	Rated Capacitance (μ F)	Dissipation Factor MAX	Ripple Current 85°C 120Hz	Outline Size	
					Code	ϕ DxL(mm)
100	125	5600	0.25	3.9	A10	35x100
		6800	0.25	4.5	A10	35x100
		8200	0.25	5.1	A12	35x120
		10000	0.25	5.9	A12	35x120
		12000	0.25	6.4	C8R	51x75
		15000	0.25	7.0	C10R	51x95
		18000	0.25	8.3	C12R	51x115
		22000	0.25	10.0	C13R	51x130
		27000	0.25	11.5	D12R	63.5x115
		33000	0.25	11.9	D13R	63.5x130
		39000	0.25	13.4	E12R	76x115
		47000	0.35	14.2	E13R	76x130
		56000	0.35	16.0	E16R	76x155
		68000	0.35	18.8	F13R	89x130
		82000	0.35	20.5	F16R	89x155
		100000	0.35	24.0	F17R	89x171
160	200	3300	0.25	5.18	A12	35x120
		3900	0.25	5.33	C8R	51x75
		4700	0.25	5.85	C8R	51x75
		5600	0.25	7.03	C10R	51x95
		6800	0.25	7.77	C10R	51x95
		8200	0.25	9.14	C12R	51x115
		10000	0.25	10.36	D10R	63.5x95
		12000	0.25	11.32	D10R	63.5x95
		15000	0.25	14.28	D13R	63.5x130
		18000	0.25	15.61	D13R	63.5x130
		22000	0.25	18.28	E13R	76x130
		27000	0.25	20.24	E13R	76x130
		33000	0.25	23.75	F13R	89x130
		39000	0.25	27.86	F16R	89x155
200	250	2200	0.25	3.92	A10	35x100
		2700	0.25	4.70	A12	35x120
		3300	0.25	4.92	C8R	51x75
		3900	0.25	5.33	C8R	51x75
		4700	0.25	6.44	C10R	51x95
		5600	0.25	7.55	C12R	51x115
		6800	0.25	8.77	C13R	51x130
		8200	0.25	9.40	D10R	63.5x95
		10000	0.25	10.36	D10R	63.5x95
		12000	0.25	12.06	E10R	76x95
		15000	0.25	14.43	E10R	76x95
		18000	0.25	16.50	E13R	76x130
		22000	0.25	19.61	E16R	76x155
		27000	0.25	21.51	F13R	89x130
		33000	0.25	25.53	F16R	89x155
250	300	1500	0.25	3.22	A10	35x100
		1800	0.25	3.52	A10	35x100
		2200	0.25	4.00	C8R	51x75
		2700	0.25	4.44	C8R	51x75
		3300	0.25	5.40	C10R	51x95

Dimensions

Rated Voltage (V.D.C)	Surge Voltage (V.D.C)	Rated Capacitance (μF)	Dissipation Factor MAX	Ripple Current 85°C 120Hz	Outline Size	
					Code	ϕ DxL(mm)
250	300	3900	0.25	6.29	C12R	51x115
		4700	0.25	7.10	D10R	63.5x95
		5600	0.25	7.77	D10R	63.5x95
		6800	0.25	9.14	D12R	63.5x115
		8200	0.25	10.03	D12R	63.5x115
		10000	0.25	11.66	D13R	63.5x130
		12000	0.25	12.88	E12R	76x115
		15000	0.25	15.10	E13R	76x130
		18000	0.25	17.69	E16R	76x155
		22000	0.25	20.91	F16R	89x155
350	400	390	0.20	1.67	A5	35x50
		470	0.20	2.15	A8	35x80
		560	0.20	2.37	A8	35x80
		680	0.20	2.59	A8	35x80
		820	0.20	3.07	A10	35x100
		1000	0.20	3.41	A10	35x100
		1200	0.20	3.81	C8R	51x75
		1500	0.20	4.26	C8R	51x75
		1800	0.20	5.14	C10R	51x95
		2200	0.20	5.70	C10R	51x95
		2700	0.20	7.14	C13R	51x130
		3300	0.20	7.92	C13R	51x130
		3900	0.20	9.00	D12R	63.5x115
		4700	0.20	10.33	D13R	63.5x130
		5600	0.20	11.36	E12R	76x115
		6800	0.20	13.10	E13R	76x130
		8200	0.20	15.43	F16R	76x155
		10000	0.20	18.13	F16R	89x155
		12000	0.20	20.02	F16R	89x155
		15000	0.20	24.50	F20R	89x195
		18000	0.20	28.83	F24R	89x235
400	450	330	0.20	1.52	A5	35x50
		390	0.20	1.96	A8	35x80
		470	0.20	2.15	A8	35x80
		560	0.20	2.37	A8	35x80
		680	0.20	1.82	A10	35x100
		820	0.20	3.07	A10	35x100
		1000	0.20	3.48	C8R	51x75
		1200	0.20	3.82	C8R	51x75
		1500	0.20	4.70	C10R	51x95
		1800	0.20	5.15	C10R	51x95
		2200	0.20	6.44	C13R	51x130
		2700	0.20	6.96	D10R	51x130
		3300	0.20	8.22	D12R	63.5x95
		3900	0.20	9.40	D13R	63.5x115
		4700	0.20	10.44	E12R	63.5x130
		5600	0.20	11.92	E13R	76x115
		6800	0.20	14.06	E16R	76x155
		8200	0.20	16.43	F16R	89x155
		10000	0.20	18.28	F16R	89x155

Dimensions

Rated Voltage (V.D.C)	Surge Voltage (V.D.C)	Rated Capacitance (μF)	Dissipation Factor MAX	Ripple Current 85°C 120Hz	Outline Size	
					Code	φ DxL(mm)
400	450	12000	0.20	21.84	F20R	89x195
		15000	0.20	26.31	F24R	89x235
450	500	270	0.20	1.37	A5	35x50
		330	0.20	1.82	A8	35x80
		390	0.20	1.96	A8	35x80
		470	0.20	2.15	A8	35x80
		560	0.20	2.55	A10	35x100
		680	0.20	2.81	A10	35x100
		820	0.20	3.18	C8R	51x75
		1000	0.20	3.48	C8R	51x75
		1200	0.20	4.22	C10R	51x95
		1500	0.20	5.07	C12R	51x115
		1800	0.20	5.85	C13R	51x130
		2200	0.20	6.29	D10R	63.5x95
		2700	0.20	7.48	D12R	63.5x115
		3300	0.20	8.66	D13R	63.5x130
		3900	0.20	9.47	E12R	76x115
		4700	0.20	10.88	E13R	76x130
		5600	0.20	12.80	E16R	76x155
		6800	0.20	15.00	F16R	89x155
		8200	0.20	16.50	F16R	89x155
		10000	0.20	20.00	F20R	89x195
		12000	0.20	23.61	F24R	89x235

Rated ripple current(A,+85°C,120Hz)