

# TS13E CD135X



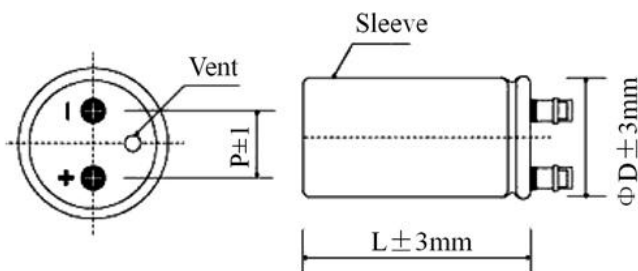
## FEATURES

- The size is reduced by 14% of CD135, and high voltage series 500VDC is added in the series.
- Warranty of 2000 hours at 85°C

## ◆ Specifications

I T E M S		S P E C I F I C A T I O N S	
Rated Voltage Range(V)	400, 450, 500V		
Operating Temperature Range(°C)	-40°C ~ +85°C		
Capacitance Tolerance(20°C, 120Hz)	±20%		
Dissipation Factor(20°C, 120Hz)	0.20		
Leakage current(µA)	0.01CV or 5mA, whichever is smaller. (at 20°C, after 5 minutes) Where, C: Nominal capacitance (µF) V: Rated voltage(V)		
Load Life (+85°C)	Time	2000 hours	
	Leakage Current	Not more than the specified value.	
	Capacitance Change	Within ±15% of the initial value	
	Dissipation Factor	Not more than 175% of the specified value.	
Shelf Life (+85°C)	Time	500 hour	
	Leakage Current	Not more than the specified value.	
	Capacitance Change	Within ±15% of the initial value	
	Dissipation Factor	Not more than 175% of the specified value.	
After Test: U <sub>R</sub> to be applied for 30 minutes, 12 to 24 hours before measurement			

## ◆ Dimensions



ΦD	51	64	77	90
P	22	28.6	32	32

## ◆ Multiplier for ripple current

### Frequency coefficient

Frequency(Hz)	50,60	120	300	1K	≥10K
Factor	0.7	1.0	1.1	1.3	1.4

### Temperature coefficient

Temperature(°C)	+40	+60	+70	+85	+1085
Factor	3.8	3.0	2.5	2.0	1.00

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■STANDARD RATINGS

Rated Voltage (V.DC)	Surge Voltage (V.DC)	Rated Capacitance (μF)	Leakage Current Max (mA)	Dissipation Factor Max	Rated Ripple Current 40°C 120Hz	Outline Size	
						Code	DxL (mm)
400	450	2200	5.0	0.20	16.5	C12R	51x115
		2700	5.0	0.20	19.2	C13R	51x130
			5.0	0.20	18.7	D10R	64x96
		3300	5.0	0.20	20.7	D10R	64x96
		3900	5.0	0.20	24.1	D12R	64x115
		4700	5.0	0.20	27.8	D13R	64x130
		5600	5.0	0.20	30.6	E12R	77x115
		6800	5.0	0.20	35.4	E13R	77x130
		8200	5.0	0.20	41.6	E16R	77x155
			5.0	0.20	50.5	E20R	77x195
		10000	5.0	0.20	45.8	F13R	90x131
			5.0	0.20	53.8	F16R	90x157
		12000	5.0	0.20	65.7	F20R	90x196
		15000	5.0	0.20	77.7	F24R	90x236
5.0	0.20		69.8	G18R	101x175		
18000	5.0	0.20	86.8	G24R	101x237		
450	500	1800	5.0	0.20	14.9	C12R	51x115
		2200	5.0	0.20	17.3	C13R	51x130
			5.0	0.20	16.9	D10R	64x96
		2700	5.0	0.20	18.7	D10R	64x96
		3300	5.0	0.20	22.2	D12R	64x115
		3900	5.0	0.20	25.3	D13R	64x130
		4700	5.0	0.20	28.1	E12R	77x115
		5600	5.0	0.20	32.1	E13R	77x130
		6800	5.0	0.20	37.9	E16R	77x155
		8200	5.0	0.20	45.8	E20R	77x195
			5.0	0.20	41.5	F13R	90x131
		10000	5.0	0.20	50.6	F17R	90x171
		12000	5.0	0.20	58.7	F20R	90x196
			5.0	0.20	57.0	G18R	101x175
15000	5.0	0.20	70.9	F24R	90x236		
	5.0	0.20	66.5	G20R	101x195		
18000	5.0	0.20	78.5	G24R	101x237		
500	550	1200	5.0	0.20	12.2	C12R	51x115
			5.0	0.20	12.5	D10R	64x96
		1500	5.0	0.20	14.3	C13R	51x130
			5.0	0.20	13.9	D10R	64x96
		1800	5.0	0.20	16.4	D12R	64x115
		2200	5.0	0.20	19.0	D13R	64x130
		2700	5.0	0.20	21.3	E12R	77x115
		3300	5.0	0.20	24.6	E13R	77x130
		3900	5.0	0.20	28.7	E16R	77x155
		4700	5.0	0.20	32.9	E17R	77x171
			5.0	0.20	31.4	F13R	90x131
		5600	5.0	0.20	37.8	E20R	77x195
			5.0	0.20	36.7	F16R	90x157
		6800	5.0	0.20	41.8	F17R	90x171
			5.0	0.20	48.5	F20R	90x196
		8200	5.0	0.20	47.1	G18R	101x175
			5.0	0.20	57.9	F24R	90x236
		10000	5.0	0.20	54.3	G20R	101x195
5.0	0.20		64.1	G24R	101x237		

Note: Specifications are subject to change without notice. For more detail and update, please visit our website.