

# TS13E CDHEH

## FEATURES

- Low ESR, high ripple current, high voltage, long life
- Endurance:5000 hours at 105°C

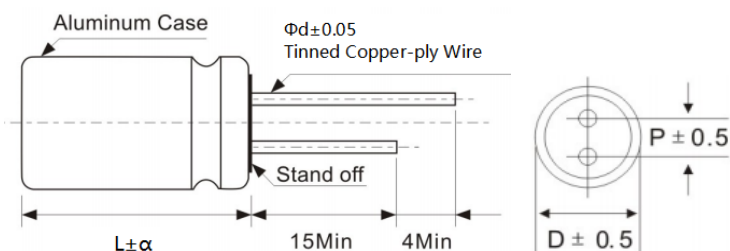


## Specifications

I T E M S		C H A R A C T E R I S T I C S	
Category Temperature Range (°C)	-55 ~ +105		
Rated Voltage Range	35 ~ 160V		
Capacitance Tolerance (20°C, 120Hz)	±20%		
Leakage Current	I ≤ 0.1CV or 299µA whichever is greater Less than or equal to the specified value. After 2 minutes application of rated Voltage at 20°C		
Dissipation Factor (20°C, 120Hz)	Rated Voltage (V)	35~100	
	tanδ (Max.)	0.12	
Low Temperature Characteristics (Max. Impedance Ratio)	Z(-25°C)/Z(+20°C)	≤ 1.25	(100KHz)
	Z(-55°C)/Z(+20°C)	≤ 1.25	
Endurance	The specifications listed below shall be satisfied when the capacitors are restored to 20°C after application of rated voltage for 5000 hours at 105°C.		
	Appearance	No significant damage	
	Capacitance change	≤ ±20% of the initial value	
	D.F.(tanδ)	≤ 150% of the specified value	
	ESR	≤ 150% of the specified value	
	Leakage current	≤ The specified value	
Damp Heat (Steady State)	The specifications listed below shall be satisfied when the capacitors are restored to 20°C after application of rated voltage for 1000 hours at 60°C, 90% ~ 95% RH.		
	Appearance	No significant damage	
	Capacitance change	≤ ±20% of the initial value	
	D.F.(tanδ)	≤ 150% of the specified value	
	ESR	≤ 150% of the specified value	
	Leakage current	≤ The specified value	
Surge Voltage	Surge Voltage=Rated voltage × 1.15(V) The capacitors shall be subjected to 1000 cycles each consisting of charge with the surge voltages specified at 105°C for 30 seconds through a protective resistor (Rc=1kΩ) and discharge for 5 minutes 30 seconds.		
	Appearance	No significant damage	
	Capacitance change	≤ ±20% of the initial value	
	D.F.(tanδ)	≤ 150% of the specified value	
	ESR	≤ 150% of the specified value	
	Leakage current	≤ The specified value	

## Dimensions

mm



ΦD	5	5.5	6.3	8	10
P	2.0	2.5	2.5	3.5	5.0
Φd	0.5	0.5	0.6	0.6	0.6

α	(L < 16)	1.0
	(16 ≤ L < 22)	1.5
	(L ≥ 22)	2.0

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## ◆ RATED RIPPLE CURRENT COEFFICIENT

Frequency(Hz)	120Hz ≤ f < 1kHz	1kHz ≤ f < 10kHz	10kHz ≤ f < 100kHz	100kHz ≤ f < 500kHz
Coefficient	0.05	0.30	0.70	1.00

## ◆ STANDARD RATINGS

Rated Voltage	Rated Capacitance (μF)	Case Size ΦDxL (mm)	ESR (mΩ) at 20°C, 100 KHz	Leakage Current (μA)	Rated Ripple Current (mArms/105°C/100kHz)	
35	10	5x8	120	299	1100	
	22	5x8	120	299	1100	
	33	5x8	120	299	1100	
	47	5x8	5x8	120	299	1100
			6.3x8	80	299	1350
	68	5x8	5x8	120	299	1100
			6.3x8	70	299	1350
	100	100	5x11	120	350	1500
			6.3x7	80	350	1200
			6.3x8	50	350	1500
			8x9	40	350	1700
	150	8x9	40	40	525	1700
	220	220	6.3x12	40	770	1700
			8x9	40	770	1700
8x12			35	770	2500	
8x12			35	1155	2500	
330	330	10x12.5	30	1155	2900	
		10x12.5	30	1645	2900	
560	10x12.5	30	30	1960	2900	
50	10	5x8	120	299	550	
	22	5x8	120	299	550	
		6.3x8	100	299	850	
	33	5x9	120	299	650	
		6.3x8	100	299	850	
	47	47	5x11	100	299	850
			6.3x8	80	299	900
			6.3x12	70	299	1150
			8x9	60	299	1150
	100	100	6.3x12	50	500	1150
			8x9	50	500	1150
			8x12	40	500	1380
	152	8x12	40	40	750	1380
	220	10x12.5	35	35	1100	1650

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## ◆ STANDARD RATINGS

Rated Voltage	Rated Capacitance (μF)	Case Size ΦDxL (mm)	ESR (mΩ) at 20°C, 100 KHz	Leakage Current (μA)	Rated Ripple Current (mA <sub>rms</sub> /105°C/100kHz)
63	10	5x8	120	299	500
	22	5x11	120	299	650
		6.3x8	100	299	750
	33	6.3x8	100	299	750
	47	6.3x12	70	299	950
		8x9	60	299	950
	82	8x12	45	517	1300
		10x12.5	38	517	1800
100	8x12	45	630	1300	
	10x12.5	38	630	1800	
220	10x12.5	35	1386	1800	
80	10	6.3x8	120	299	550
	15	6.3x8	120	299	550
	22	8x9	80	299	1100
		8x12	60	299	1300
	33	10x12.5	45	299	1700
	39	10x12.5	45	312	1700
	47	8x12	60	376	1300
		10x12.5	45	376	1800
	56	10x12.5	45	448	1800
82	10x12.5	45	656	1800	
100	10x12.5	45	800	1800	
100	10	6.3x8	120	299	550
	22	6.3x12	90	299	820
		8x9	90	299	850
	33	8x12	70	330	1190
	47	10x12.5	60	470	1550
100	10x15	50	1000	1790	
160	4.7	8x9	350	299	550
	10	8x12	250	299	750
	15	8x12	250	299	750
		10x10	300	299	650
	18	10x12.5	200	299	950
22	10x12.5	200	352	950	

Note: Reflow soldering can only be used for SMD Conductive Polymer Aluminum Solid Electrolytic Capacitor.

Radial Conductive Polymer Aluminum Solid Electrolytic Capacitor are not suitable for reflow soldering, but only for wave soldering.

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