

# TS13E CDHEA



## FEATURES

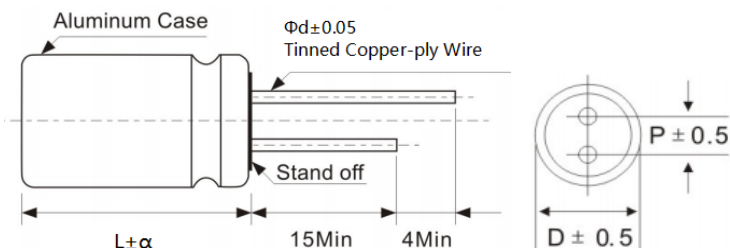
- Super low ESR, high ripple current
- Load life of 2000 hours at 105°C

## ◆ 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	2.5 ~ 25V											
Capacitance Tolerance (20°C, 120Hz)	±20%											
Leakage Current	≤0.2CV or 500µA 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)	2.5	4	6.3	6.8	7.5	10	12	16	20	25	
	tanδ (Max.)	0.08					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 2000 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	6.3	8	10
P	2.0	2.5	3.5	5.0
Φd	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 (mA <sub>rms</sub> /105°C/100kHz)	
2.5	560	5x8	12	500	4100	
		6.3x8	8	500	5100	
	680	6.3x8	8	500	5100	
		8x9	8	500	5900	
	820	6.3x8	8	500	5200	
		8x9	8	500	5900	
	1000	8x9	8	500	5900	
		8x12	8	500	6100	
1200	8x9	8	600	5900		
	8x12	8	600	6100		
1500	8x12	8	750	6100		
	4	560	6.3x8	8	500	5100
8x9			8	500	5900	
680		6.3x8	8	544	5100	
		8x9	8	544	5900	
820		6.3x9	8	656	5200	
		8x9	8	656	5900	
1000		6.3x12	8	800	5500	
		8x9	8	800	5900	
1200	6.3x12	8	960	5500		
	8x9	8	960	5900		
6.3	220	5x8	12	500	3900	
	270	5x8	12	500	3900	
	330	5x9.5	12	500	4100	
		6.3x8.5	10	500	4450	
	390	5x9.5	12	500	4510	
		6.3x8	10	500	4800	
	470	5x9.5	12	592	4510	
		6.3x8.5	8	592	4900	
	560	6.3x8.5	8	706	5100	
		8x9.5	8	706	5900	
	680	6.3x8.5	8	857	5100	
		8x9	8	857	5900	
	820	6.3x9.5	8	1033	5200	
		6.3x11.5	8	1033	5500	
		8x9.5	8	1033	5900	
		1000	6.3x11.5	8	1260	5500
			8x9.5	8	1260	5900
			8x12	8	1260	6100
	1200	8x9	8	1512	5900	
		8x12	8	1512	6100	
1500	8x12	8	1890	6100		
	10x12.5	8	1890	6200		
2200	10x12.5	8	2772	6200		

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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)	
7.5	270	5x8	12	500	3630	
	330	6.3x8	10	500	4100	
	390	6.3x8	10	585	4100	
	470	6.3x8	10	705	4100	
	560	6.3x8	10	840	4500	
	680	680	6.3x12	10	1020	4500
			8x9	8	1020	4800
	820	820	6.3x12	10	1230	4500
			8x9	8	1230	4800
	1000	1000	8x9	8	1500	4800
8x12			8	1500	5100	
1200	1200	8x12	8	1800	5100	
1500	1500	10x12.5	8	1800	5500	
10	220	5x8	15	500	3100	
		6.3x8	12	500	3500	
	270	6.3x8	12	540	3500	
		6.3x8	12	660	3750	
	330	8x9	10	660	3800	
		6.3x8	12	780	3750	
	390	6.3x12	12	780	3900	
		6.3x8	12	940	3850	
	470	8x9	10	940	3950	
		6.3x12	12	1120	3900	
	560	8x9	10	1120	3950	
		6.3x12	12	1360	4100	
	680	8x9	10	1360	4200	
		8x9	10	1640	4200	
	820	8x12	8	1640	4500	
8x12		8	2000	4500		
1000	1000	10x12.5	8	2000	5200	
1200	1200	10x12.5	8	2400	5200	
1500	1500	10x12.5	8	3000	5200	
12	220	5x9	15	528	2690	
		6.3x8	13	528	2900	
	270	6.3x8	13	648	2900	
		5x9.5	7	396	4800	
	330	6.3x8	13	792	2900	
		6.3x8	13	936	2900	
	470	6.3x12	13	1128	3500	
		8x9	12	1128	3800	
	560	6.3x12	13	1344	3500	
		8x9	12	1344	3800	
	680	6.3x8.5	7	816	5100	
		8x9	12	1632	3800	
	820	8x12	11	1968	4100	
		8x12	11	2400	4100	
	1000	1000	10x12.5	10	2400	4800
1200	1200	10x12.5	10	2880	4800	
1500	1500	10x12.5	10	3600	4800	

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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)
16	100	5x7.5	15	500	2100
	150	5x8	15	500	2100
		6.3x8	13	500	2900
	180	5x9	15	576	2690
		6.3x8	13	576	2900
	220	6.3x8.5	13	704	2900
		6.3x12	13	704	3500
		8x9	12	704	3500
	270	6.3x8.5	13	864	2900
		8x9	12	864	3500
		8x12	11	864	3790
	330	6.3x8.5	13	1056	2900
		6.3x11.5	13	1056	3500
		8x9	12	1056	3500
	470	6.3x11.5	13	1504	3500
8x9.5		12	1504	3500	
8x12		7	752	5100	
560	6.3x12	13	1792	3500	
	8x12	12	1792	3500	
680	8x12	11	2176	4800	
820	8x12	11	2624	4800	
1000	10x12	10	3200	5100	
25	68	6.3x8	25	500	2100
		8x9	20	500	2690
	82	6.3x8	25	500	2100
		8x9	20	500	2690
	100	6.3x8.5	25	500	2100
		8x9	18	500	2690
		8x12	18	500	2900
	150	8x9	18	750	2690
		8x12	18	750	2900
	180	8x12	18	900	2900
	220	8x12	18	1100	2900
	270	10x12.5	15	1350	3500
330	10x12.5	15	1650	3500	
470	10x12	15	2350	3500	
35	100	6.3x8.5	15	350	2900
	470	10x12	10	1645	4900

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.