

# CAPACITOR

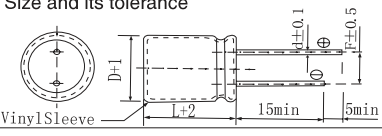
## Aluminum Electrolytic Capacitor Series

### KLS10 - CD81 (TR) (105°C) Series

#### High Temp

Wide temperature range, stable and reliable performances  
D ≥ 8mm equipped with pressure release device.  
Be used in DC or pulse circuit under environment of high temperature.



Item	Characteristics									
Size and its tolerance 	∅D	5	6	8	10	12	13	16	18	22
	F ± 0.5	2.0	2.5	3.5	5.0			7.5		10
	d ± 0.1	0.5			0.6			0.8		
Operating Temp. Range	-40°C ~ +105°C (10 ≤ 100V <sub>DC</sub> )					-25°C ~ +105°C (160 ~ 450V <sub>DC</sub> )				
Rated Working Voltage	10 ~ 450V <sub>DC</sub>									
Capacitance Range	1.0 ~ 4700 μF (+20°C, 100 or 120Hz)									
Capacitance Tol.	±20%, +30%, -10% (+20°C, 100 or 120Hz)									
Dissipation Factor tg δ	At +20°C and 100 or 120Hz, for C <sub>R</sub> > 1000 μF, tg δ add 0.02 per another 1000 μF.									
	U <sub>R</sub> (V)	10	16	25	35	50,63	100	160~250	400,450	
tg δ		0.22	0.20	0.15	0.12	0.10	0.08	0.16	0.20	
Leakage Current I <sub>L</sub>	≤ 0.01 · C <sub>R</sub> · U <sub>R</sub> or 3 μA (≤ 100V <sub>DC</sub> ) whichever is greater									
	≤ 0.03 · C <sub>R</sub> · U <sub>R</sub> + 10 μA (≥ 160V <sub>DC</sub> ) Measured after 2 minutes application of U <sub>R</sub> , at +20°C									
Load Life	At +105°C, after U <sub>R</sub> applied for 1000 hours .									
	ΔC	±25% of initial measured value								
	DF(tg δ)	≤ 200% of initial specified value								
	LC(I <sub>L</sub> )	≤ initial specified value								
Shelf Life	At +105°C, after shelf for 500 hours (without voltage applied), then restored for 24 hours at room temp.									
	ΔC	±25% of initial measured value								
	DF(tg δ)	≤ 200% of initial specified value								
	LC(I <sub>L</sub> )	≤ 200% of initial specified value								

#### Frequency Correction Factor for Ripple Current:

U <sub>R</sub> (V <sub>DC</sub> )	C <sub>R</sub> (μF)	Frequency 频率 (Hz)				
		50	100	1K	10K	100K
6.3 ~ 100	1.0 ~ 10	0.7	1.0	1.6	1.85	2.0
	22 ~ 220	0.75	1.0	1.4	1.55	1.6
	330 ~ 4700	0.8	1.0	1.15	1.25	1.3
160 ~ 450	1.0 ~ 220	0.7	1.0	1.4	1.55	1.6

#### Permissible Ripple Current I<sub>R max</sub> (+105°C, 100Hz, mA rms):

U <sub>R</sub> (V) C <sub>R</sub> (μF)	10	16	25	35	50	63	100	160	200	250	400	450
1.0					11	11	14	15	16	16	19	20
2.2					18	19	21	24	26	27	30	32
3.3					22	24	28	34	35	38	39	41
4.7					30	33	36	43	47	48	51	55
10			29	37	46	55	60	70	76	80	82	90
22		37	42	51	66	81	108	113	115	124	146	166
33	43	49	58	72	88	101	122	150	156	167	171	184
47	72	78	86	98	116	136	166	190	210	225	243	250
100	93	115	126	153	174	215	256	329	335	365		
220	136	180	230	280	310	388	490	593	628			
330	210	260	320	410	480	560	636					
470	310	360	420	520	650	800	880					
1000	480	600	760	910	1020	1220						
2200	960	1100	1210	1410	1500	1600						
3300	1160	1300	1400	1600	1810							
4700	1400	1510	1750									

#### Case Size of Standard Products

U <sub>R</sub> (V) C <sub>R</sub> (μF)	10	16	25	35	50	63	100	160	200	250	400	450
1.0					5×11	5×11	5×12	5×12	6×12	6×12	8×12	8×12
2.2					5×11	5×11	5×12	6×12	6×12	8×12	8×12	10×13
3.3					5×11	5×11	5×12	6×12	8×12	8×12	10×13	10×15
4.7					5×11	5×11	5×12	6×12	8×12	10×13	10×13	10×15
10					5×11	5×11	5×12	6×12	8×12	10×13	10×17	10×17
22		5×11	5×11	5×11	5×12	6×12	6×12	8×12	10×13	10×20	10×20	12×22
33	5×11	5×11	5×11	5×12	6×12	8×12	10×13	12×22	12×22	16×27	16×31	16×36
47	5×11	5×11	5×12	6×12	8×12	8×12	10×17	13×22	13×26	16×27	16×36	18×41
100	6×12	6×12	6×12	8×12	10×13	10×15	12×22	16×27	16×31	16×36		
220	6×12	6×12	8×12	8×12	10×17	12×22	16×27	18×36	18×41			
330	8×12	8×13	10×15	10×17	12×22	13×22	16×31					
470	8×14	8×12	10×20	12×22	13×22	16×27	18×36					
1000	10×17	10×11	12×25	13×26	16×27	16×36						
2200	13×22	13×26	13×25	16×31	18×36	22×42						
3300	13×26	16×27	16×31	18×38	22×42							
4700	16×27	16×31	16×32	22×40								

Note: We can also provide the capacitors according to the customer's request.