

# METALLIZED POLYESTER FILM CAPACITOR

## CL21

### FEATURES

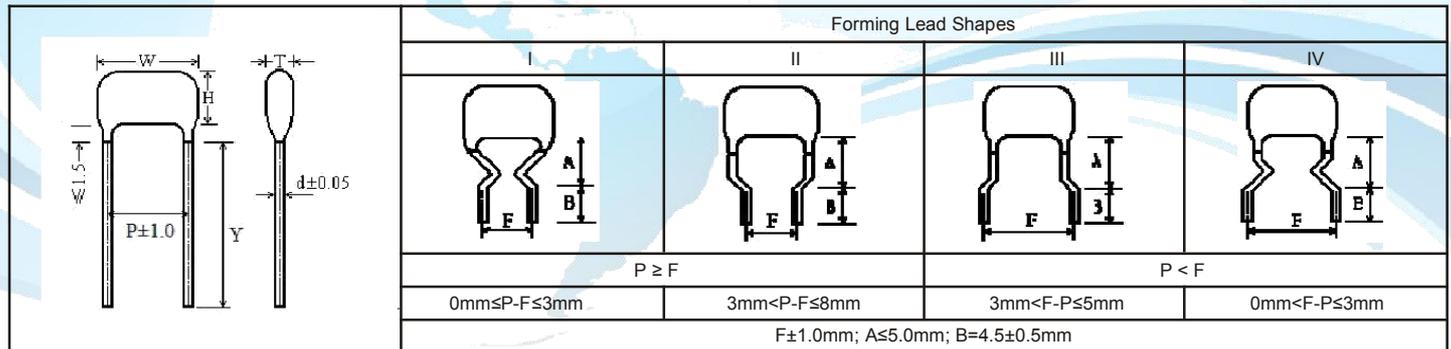
- Metallized polyester film, non-inductive wound construction
- Wide capacitance range, small size and light weight
- Long life due to self-healing effect
- Flame retardation epoxy resin powder coated

### TYPICAL APPLICATIONS

- Suitable for blocking, by-pass and coupling of DC and signals
- Widely used in filter and low pulse circuits



### OUTLINE DRAWING



### SPECIFICATIONS

Reference Standard	GB/T 7332 (IEC 60384-2)	
Climatic Category	55/105/21	
Rated temperature	85°C	
Operating temperature range	-55°C~105°C (+85°C to +105°C: decreasing factor 1.25% per °C for VR(dc))	
Rated Voltage	50/63V, 100V, 250V, 400V, 630V	
Capacitance Range	0.010μF ~ 10.0μF	
Capacitance Tolerance	±5%(J), ±10%(K), ±20%(M)	
Voltage Proof	1.6U <sub>R</sub> (5s)	
Dissipation Factor	≤1.0% (20°C, 1kHz)	
Insulation Resistance	UR≤100V	≥15 000MΩ, CR≤0.33μF; (20°C, 10V, 1min)
		≥5 000s, CR>0.33μF
	UR>100V	≥30 000MΩ, CR≤0.33μF; (20°C, 100V, 1min)
		≥10 000s, CR >0.33μF:

### TEST METHOD AND PERFORMANCE

No.	Item	Performance	Test method (IEC60384-2)
1	Solderability	Good quality of tinning	Solder temperature: 245°C±5°C Immersion time: 2.0s±0.5s
2	Initial measurement	Capacitance Tgδ: 1kHz, C>1.0μF 10kHz, C≤1.0μF	
	Terminal strength	There shall be no visible damage	Ref. item 4.3 Tension: 0.6≤φd≤0.8mm, 10N φd=1.0mm, 20N Bend: 0.6≤φd≤0.8mm, 5N φd=1.0mm, 10N The terminals shall be bent 2 times in each direction.
	Resistance to solder heat	There shall be no visible damage	Solder temperature: 260°C±5°C Immersion time: 10s±1s
	Final measurement	ΔC/C ≤±2% (relative to the initial value) Increase of tgδ: ≤0.005 (10kHz, C≤1.0μF) ≤0.003 (1kHz, C>1.0μF)	
3	Initial measurement	Capacitance Tgδ: 1kHz, C>1.0μF 10kHz, C≤1.0μF	
	Rapid change of temperature	There shall be no evidence of deterioration.	ΘA=-55°C, ΘB =+85°C 5 cycles, Duration: t=30min
	Vibration	There shall be no evidence of deterioration.	Amplitude 0.75mm or acceleration 98m/s <sup>2</sup> (whichever is the smaller severity), f: 10Hz to 500Hz. Three directions, 2h for each direction, total 6h.

No.	Item	Performance	Test method (IEC60384-2)
3	Bump	There shall be no evidence of deterioration.	4 000 times, Acceleration: 390m/s <sup>2</sup> , Pulse duration, 6ms
	Final measurement	$\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of tg $\delta$ : $\leq 0.003$ (10kHz, C $\leq 1.0\mu F$ ) $\leq 0.002$ (1kHz, C $> 1.0\mu F$ ) IR: $\geq 50\%$ of the rated value	
		Initial measurement	Capacitance Tg $\delta$ : 1kHz, C $> 1.0\mu F$ 10kHz, C $\leq 1.0\mu F$
	climate sequence	Dry heat	
Damp heat, Cyclic			Test Db, Severity: b, the first cycle
Cold			-55°C, 2h
4	Low air pressure	There shall be no permanent breakdown, flashover or other harmful deformation when applying UR at the last 1 minute.	15°C~35°C, 8.5kPa, 1h,
	Damp heat, cyclic other		Test Db, Severity b, the other cycles, Applying UR for 1 minute after the test finished.
	Climate sequence (continue)	Final measurement	There shall be no evidence of deterioration and the marking shall be legible. $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of tg $\delta$ : $\leq 0.005$ (10kHz, C $\leq 1.0\mu F$ ) $\leq 0.003$ (1kHz, C $> 1.0\mu F$ ) IR: $\geq 50\%$ of the rated value
5	Damp heat steady state	There shall be no evidence of deterioration and the marking shall be legible. $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of tg $\delta \leq 0.005$ IR: $\geq 50\%$ of the rated value	Temperature: 40°C $\pm 2^\circ C$ Humidity: 93 $\pm 2\%$ RH Duration: 21 days
6	Endurance	$\Delta C/C \leq \pm 8\%$ (relative to the initial value) Increase of tg $\delta$ : $\leq 0.003$ (10kHz, C $\leq 1.0\mu F$ ) $\leq 0.002$ (1kHz, C $> 1.0\mu F$ ) IR: $\geq 50\%$ of the rated value	Temperature: +85°C Voltage: 1.25 $\times U_R$ Duration: 2 000h
7	Charging and discharging	$\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of tg $\delta$ : $\leq 0.003$ (10kHz, C $\leq 1.0\mu F$ ) $\leq 0.002$ (1kHz, C $> 1.0\mu F$ ) IR: $\geq 50\%$ of the rated value	Times: 10 000 Duration of charging: 0.5s Duration of discharging: 0.5s Charging voltage: rated voltage Charging resistance: 220/C <sub>R</sub> ( $\Omega$ ) Discharging resistance: R=10/C <sub>R</sub> ( $\Omega$ ) or 20 $\Omega$ (whichever is the greater) C <sub>R</sub> : rated capacitance ( $\mu F$ )