

Film Capacitors

Metallized Polyester Film Capacitor

Series/Type: CL21-B(BOX)

Ordering code: CL1*

Date: September 2024

Version: 01

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■ Features

- High reliability
- Metallized Polyester film, non-inductive wound construction
- Plastic case(UL 94V-0), epoxy resin sealing

■ Typical Applications

- By-passing, blocking, coupling, decoupling
- Pulse, logic, timing, oscillator circuits

■ Reference Standards

- GB/T 7332(IEC 60384-2)
- UL 810

■ Specifications

- Capacitance range **0.001 μ F...4.7 μ F**
- Capacitance tolerance **$\pm 5\%$ (J), $\pm 10\%$ (K), $\pm 20\%$ (M)**
- Rated Voltage **100V.dc, 250V.dc, 400/450V.dc, 630V.dc, 1000V.dc**
- Loss factor($\tan\delta$)at 1KHz,at 20 $^{\circ}$ C **$\leq 1.0\%$**
- Maximum pulse rise time(dv/dt)

U _R (V)	dv/dt				
	P=7.5	P=10	P=15	P=22.5	P=27.5
100	15	9	5	3	2
250	30	20	12	8	5
400/450	40	30	20	10	7
630	50	40	25	12	10
1000	70	60	30	15	12

- Climatic category **40/105/56**
- Operating temperature range **-40 $^{\circ}$ C...105 $^{\circ}$ C**
(85 $^{\circ}$ C to 105 $^{\circ}$ C, decreasing factor 1.25% per $^{\circ}$ C for U_R)
- Storage temperature Range **-40 $^{\circ}$ C...105 $^{\circ}$ C**

■ Test data

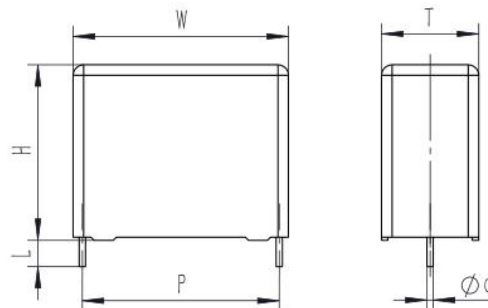
- Capacitance measurement **C_R $\pm 5\%$ (J); C_R $\pm 10\%$ (K); C_R $\pm 20\%$ (M)**
- Test voltage between terminals **1.6U_R @5S**
- Insulation resistance **R $\geq 15,000M\Omega$, C_R $\leq 0.33\mu$ F(20 $^{\circ}$ C, 100V, 60S)**
R \cdot C_R $\geq 5,000S$, C_R $> 0.33\mu$ F(20 $^{\circ}$ C, 100V, 60S)
- Loss factor($\tan\delta$)at 1KHz, at 20 $^{\circ}$ C **1.0%**

■ **Structure of ordering code**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
C	L	1	3	1	1	2	2	4	K	6	3	5	L	0	1	G	1
A			B			C			D	E	F		G	H	I	J	K

- A: Capacitor series
CL1=CL21-B(BOX)
- B: Rated voltage
如: 631=63*10¹=630V
- C: Rated capacitance
如: 224=22*10⁴=220000pF=0.22μF
- D: Capacitance tolerance
±2%(G), ±3%(H), ±5%(J), ±10%(K), ±20%(M)
- E: Pitch
2=5.0mm 3=7.5mm 4=10mm 5=12.5mm 6=15mm 9=22.5mm
B=27.5mm D=32.5mm F=37.5mm M=52.5mm
- F: Lead length
35=3.5mm E5=15mm N2=22mm S6=36mm
- G: Pin shape
L=Straight foot R=Right foot K=K foot N=Bend inward foot
W=Bend outside foot
- H: Product features
0=Ordinary 1=Double 85 2=Low noise 3=Low power
- I: Raw material
0=No halogen 1=halogen
- J: Product colour
Y=Yellow G=Grey B=Black U=Blue W=white R=Red E=Green
- H: Inner use

■ **Outline Drawing(Specific according to customer requirements)**



Dimensions(mm)

UR: 100V.dc(63V.ac)							UR: 100V.dc(63V.ac)						
CR(μ F)	W	H	T	d	P	Part number	CR(μ F)	W	H	T	d	P	Part number
0.10	13	9	4	0.6	10		1.5	18	12	6	0.75	15	
0.15	13	9	4	0.6	10		1.5	26.5	12	6	0.75	22.5	
0.22	10	9	4	0.6	7.5		1.8	18	12	6	0.75	15	
0.22	13	9	4	0.6	10		1.8	26.5	15	6	0.75	22.5	
0.33	10	9	4	0.6	7.5		2.2	18	12	6	0.75	15	
0.33	13	9	4	0.6	10		2.2	26.5	15	6	0.75	22.5	
0.33	18	11	5	0.75	15		3.3	18	13.5	7.5	0.75	15	
0.47	10	9	4	0.6	7.5		3.3	26.5	15	6	0.75	22.5	
0.47	13	9	4	0.6	10		4.7	18	14.5	8.5	0.75	15	
0.47	18	11	5	0.75	15		4.7	26.5	15	6	0.75	22.5	
0.68	10	9	4	0.6	7.5		6.8	26.5	19	10	0.75	22.5	
0.68	13	9	4	0.6	10		6.8	31	18	9	0.75	27.5	
0.68	18	11	5	0.75	15		10	26.5	21.5	12	0.75	22.5	
1.0	10	12	6	0.6	7.5		10	32	20	11	0.75	27.5	
1.0	13	11	5	0.6	10		15	32	20	11	0.75	27.5	
1.0	18	11	5	0.75	15		22	31.5	25	14	0.75	27.5	
1.5	13	12	6	0.6	10		33	31.5	25.5	16	0.75	27.5	
UR: 250V.dc(160V.ac)							UR: 250V.dc(160V.ac)						
0.033	13	9	4	0.6	10		0.47	18	11	5	0.75	15	
0.047	13	9	4	0.6	10		0.47	26	15	6	0.75	22.5	
0.068	13	9	4	0.6	10		0.68	18	12	6	0.75	15	
0.10	13	9	4	0.6	10		0.68	26	15	6	0.75	22.5	
0.10	18	11	5	0.75	15		1.0	18	13.5	7.5	0.75	15	
0.15	10	9	4	0.6	7.5		1.0	26	15	6	0.75	22.5	
0.15	13	9	4	0.6	10		1.5	18	14.5	8.5	0.75	15	
0.15	18	11	5	0.75	15		1.5	26.5	16.5	7	0.75	22.5	
0.22	10	11	5	0.6	7.5		1.5	31	18	9	0.75	27.5	
0.22	13	11	5	0.6	10		1.8	26.5	16.5	7	0.75	22.5	
0.22	18	11	5	0.75	15		1.8	31	18	9	0.75	27.5	
0.22	26	12	6	0.75	22.5		2.2	26.5	17	8.5	0.75	22.5	
0.27	10	12	6	0.6	7.5		2.2	31	18	9	0.75	27.5	
0.33	10	12	6	0.6	7.5		3.3	26	20	11	0.75	22.5	
0.33	18	11	5	0.75	15		3.3	31	18	9	0.75	27.5	
0.47	13	12	6	0.6	10		4.7	31	22	13	0.75	27.5	

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Dimensions(mm)

UR: 250V.dc(160V.ac)							UR: 250V.dc(160V.ac)						
Cr(μF)	W	H	T	d	P	Part number	Cr(μF)	W	H	T	d	P	Part number
6.8	31	22	13	0.75	27.5		10	31.5	25	14	0.75	27.5	
UR: 400V.dc/450V.dc(200V.ac)							UR: 400V.dc/450V.dc(200V.ac)						
0.010	13	9	4	0.6	10		0.33	26	15	6	0.75	22.5	
0.015	13	9	4	0.6	10		0.47	18	14.5	8.5	0.75	15	
0.022	13	9	4	0.6	10		0.47	26	15	6	0.75	22.5	
0.033	13	9	4	0.6	10		0.56	18	16	10	0.75	15	
0.047	10	9	4	0.6	7.5		0.68	18	16	10	0.75	15	
0.047	13	9	4	0.6	10		0.68	26	15	6	0.75	22.5	
0.056	13	9	4	0.6	7.5		0.68	31	18	9	0.75	27.5	
0.068	13	11	5	0.6	10		1.0	26.5	19	10	0.75	22.5	
0.068	18	11	5	0.75	15		1.0	31	18	9	0.75	27.5	
0.10	13	11	5	0.6	10		1.5	26.5	21.5	12	0.75	22.5	
0.10	18	11	5	0.75	15		1.5	32	20	11	0.75	27.5	
0.15	13	12	6	0.6	10		1.8	32	20	11	0.75	27.5	
0.15	18	11	5	0.75	15		2.2	31	22	13	0.75	27.5	
0.22	18	12	6	0.75	15		3.3	31.5	25	14	0.75	27.5	
0.22	26	12	6	0.75	22.5		4.7	31.5	25.5	16	0.75	27.5	
0.33	18	13.5	7.5	0.75	15		6.8	31	33	18	0.75	27.5	
UR: 630V.dc(220V.ac)							UR: 630V.dc(220V.ac)						
0.0047	13	9	4	0.6	10		0.15	18	13.5	7.5	0.75	15	
0.0068	13	9	4	0.6	10		0.15	26	15	6	0.75	22.5	
0.010	13	9	4	0.6	10		0.22	18	16	10	0.75	15	
0.015	10	9	4	0.6	7.5		0.22	26.5	16.5	7	0.75	22.5	
0.015	13	9	4	0.6	10		0.33	18	19	11	0.75	15	
0.022	10	11	5	0.6	7.5		0.33	26.5	16.5	17	0.75	22.5	
0.022	13	9	4	0.6	10		0.33	31	18	9	0.75	27.5	
0.033	10	12	6	0.6	7.5		0.47	26.5	17	8.5	0.75	22.5	
0.033	13	11	5	0.6	10		0.47	31	18	9	0.75	27.5	
0.047	10	12	6	0.6	7.5		0.68	26.5	21.5	12	0.75	22.5	
0.047	13	11	5	0.6	10		0.68	32	20	11	0.75	27.5	
0.10	18	12	6	0.75	15		1.0	32	20	11	0.75	27.5	
0.10	26	15	6	0.75	22.5								

Dimensions(mm)

U _R : 1000V.dc(400V.ac)							U _R : 1000V.dc(400V.ac)						
Cr(μF)	W	H	T	d	P	Part number	Cr(μF)	W	H	T	d	P	Part number
0.0010	10	9	4	0.6	7.5		0.022	18	11	5	0.75	15	
0.0010	13	9	4	0.6	10		0.033	18	12	6	0.75	15	
0.0015	10	9	4	0.6	7.5		0.033	26	15	6	0.75	22.5	
0.0015	13	9	4	0.6	10		0.047	18	12	6	0.75	15	
0.0022	10	9	4	0.6	7.5		0.047	26	15	6	0.75	22.5	
0.0022	13	9	4	0.6	10		0.068	18	13.5	7.5	0.75	15	
0.0033	10	9	4	0.6	7.5		0.068	26	15	6	0.75	22.5	
0.0033	13	9	4	0.6	10		0.10	18	14.5	8.5	0.75	15	
0.0047	10	9	4	0.6	7.5		0.10	26	15	6	0.75	22.5	
0.0047	13	9	4	0.6	10		0.15	26.5	16.5	7	0.75	22.5	
0.0068	10	9	4	0.6	7.5		0.15	31	18	9	0.75	27.5	
0.0068	13	9	4	0.6	10		0.22	26.5	17	8.5	0.75	22.5	
0.010	10	11	5	0.6	7.5		0.22	31	18	9	0.75	27.5	
0.010	13	9	4	0.6	10		0.33	26	20	11	0.75	22.5	
0.010	18	11	5	0.75	15		0.33	32	20	11	0.75	27.5	
0.015	10	12	6	0.6	7.5		0.47	32	20	11	0.75	27.5	
0.015	13	11	5	0.6	10		0.68	31.5	25.5	16	0.75	27.5	
0.015	18	11	5	0.75	15		1.0	31.5	25.5	16	0.75	27.5	
0.022	13	11	5	0.6	10		1.5	32	37	22	0.75	27.5	