

# Product Specification

Number: L-KLS10-CL21  
Name: Metalized Polyester Film Capacitor  
Customer: \_\_\_\_\_  
Date: 2025-12-24



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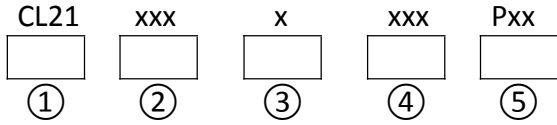
| Compi | Check  | Review | Approva |
|-------|--------|--------|---------|
| Jenny | Jack.C |        |         |





|             |                                    |         |            |
|-------------|------------------------------------|---------|------------|
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### ❖ Part number system (L-KLS10-CL21-105J63-P7.5)



#### ① Series code

#### ② Rated capacitance value

按 JIS 标准

|                                       |  |  |
|---------------------------------------|--|--|
| 101=10x10 <sup>1</sup> pF=0.1nF       | 102=10x10 <sup>2</sup> pF=1.0nF= 0.001uF | 103=10x10 <sup>3</sup> pF=10nF=0.01uF  |
| 104=10x10 <sup>4</sup> pF=100nF=0.1uF | 105=10x10 <sup>5</sup> pF=1000nF=1uF     | 106=10x10 <sup>6</sup> pF=10000nF=10uF |
| 107 =100uF                            | 108 =1000uF                              | 109 =10000uF                           |

#### ③ Capacitance tolerance

| Tolerance | ± 1% | ± 2% | ± 3% | ± 5% | ±10% | ±15% | ± 20% | 0~+10% | 0~-10% |  |  |
|-----------|------|------|------|------|------|------|-------|--------|--------|--|--|
| Code      | F    | G    | H    | J    | K    | L    | M     | T      | P      |  |  |

#### ④ Rated Voltage ( Remark : number and then letter indicate DC, letter and then number indicate AC )

|   | A     | B     | C     | D     | E     | F     | G     | H     | J    | K    | L    | M     | N     |
|---|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|-------|-------|
| 1 |       |       | 16V   | 20V   | 25V   |       |       | 50V   | 63V  | 80V  |      |       |       |
| 2 | 100V  | 125V  | 160V  | 200V  | 250V  |       | 400V  | 500V  | 630V | 800V | 230V | 120V  | 150V  |
| 3 | 1000V | 1250V | 1600V | 2000V | 2500V | 3000V | 4000V |       |      | 850V |      | 1200V | 1500V |
|   | P     | Q     | R     | S     | T     | U     | V     | W     | X    | Y    |      |       |       |
| 1 | 240V  | 300V  | 330V  | 440V  | 540V  | 600V  | 700V  | 1100V | 900V |      |      |       |       |
| 2 | 275V  | 305V  | 350V  | 450V  | 550V  | 690V  | 760V  | 1300V |      |      |      |       |       |
| 3 | 280V  | 310V  |       | 480V  | 520V  |       |       | 1700V |      |      |      |       |       |

#### ⑤ Pitch/ Length of Axial products

| Pitch | 3.5  | 4.0  | 4.5  | 5.0  | 5.5  | 6.0  | 6.5  | 7.0 | 7.5 | 10.0 | 12.5 | 15.0 | 20.0 |
|-------|------|------|------|------|------|------|------|-----|-----|------|------|------|------|
| Code  |      |      |      |      |      |      |      |     |     |      |      | P15  |      |
| Pitch | 22.0 | 22.5 | 25.0 | 27.0 | 27.5 | 30.0 | 31.0 | 32  | 37  | 26   | 8    |      |      |
| Code  |      |      |      |      |      |      |      |     |     |      |      |      |      |
| Pitch | 15   | 19   | 21   | 27   | 32   | 37   | 42   | 46  | 24  | 50   | 56   |      |      |
| Code  |      |      |      |      |      |      |      |     |     |      |      |      |      |

\*When the products are axial products, it stands for the length of the products



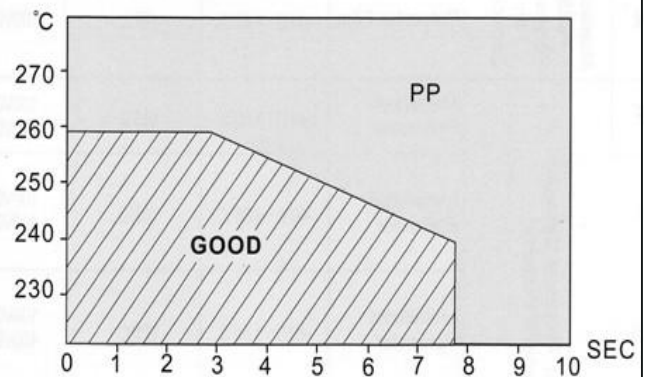
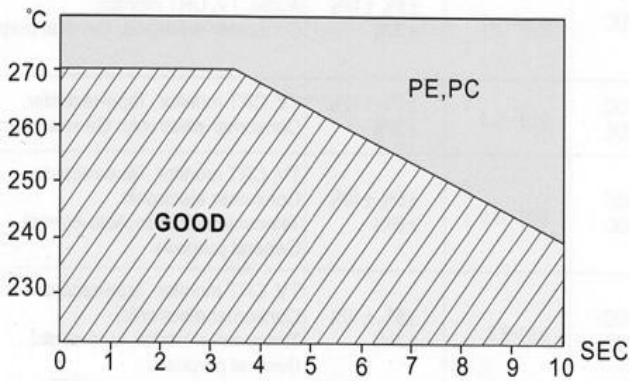
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|  |   |   |  |
|--|---|---|--|
| Solder ability<br>IEC 68-2-20  | Soldering temperature : 235°C±5°C<br>Immersion duration : 2.0s±0.5s<br>Good Tinning   |   |  |
| Soldering heat<br>IEC 68-2-20  | Soldering temperature : 260°C±5°C<br>Immersion duration : 10s±1s<br>Dip depth from the mounting surface 2+0/-0.5mm, using the thickness of 1.5mm ± 0.5mm insulation shielding plate<br>Capacitance change : $\Delta C/C$ : $\leq \pm 2\%$<br>DF change : $\tan \delta$ : $\leq 0.3\%$ at 1 KHZ                            |   |  |
| Temperature Cycling<br>IEC 68-2-14   | Temperature: $\theta A = -55^{\circ}\text{C}$ ; $\theta B = +105^{\circ}\text{C}$<br>Time duration : 30min ;<br>Cycle times : 5 次 ; Cycle times<br>Capacitance change : $\Delta C/C$ : $\leq \pm 5\%$<br>DF change : $\tan \delta$ : $\leq 0.3\%$ at 1 KHZ<br>Insulation Resistance: $\geq 50\%$ of the value before test |   |  |
| Vibration<br>IEC 68-2-6  | Frequency : 10 ~ 500Hz<br>Direction and Duration: Per direction 2hrs , Total 6hrs ;<br>Amplitude 0.75mm OR acceleration 98m/s <sup>2</sup> ( Taking the severity of lower )<br>No visible damage and deterioration in appearance  |   |  |
| Bump<br>IEC 68-2-29  | Bump times : 4000 times<br>Acceleration : 390m/s <sup>2</sup><br>Pulse duration : 6ms<br>No visible damage and deterioration in appearance  |   |  |
| Climatic Sequence  | Dry heat<br>IEC 68-2-2  | Temperature : +105°C<br>Duration : 16h  |  |
|  | Damp heat cycle   | Test Db, Severity b, the first cycle  |  |
|  | Cold<br>IEC 68-2-1  | Temperature : -55°C<br>duration : 2h  |  |
|  | Low Air pressure<br>IEC 68-2-13   | Temperature : 15°C—35°C<br>Pressure : 8.5KPa<br>Duration : 1h<br>apply UR at the last 1 minute. |  |
|  | Damp heat cycle<br>IEC 68-2-30  | Test Db, Severity b, the other cycles, apply UR for 1minute after the test finished.            |  |
| No breakdown or flashover ; No visible damage and deterioration in appearance and the marking shall be legible<br>Capacitance change : $\Delta C/C$ : $\leq \pm 5\%$<br>DF change : $\Delta \tan \delta$ : $\leq 0.3\%$ at 1 KHZ .<br>Insulation Resistance : $\geq 50\%$ of the value before test |   |   |  |

|             |                                    |         |            |
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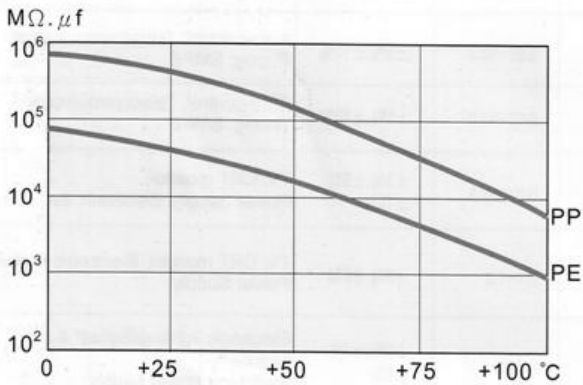
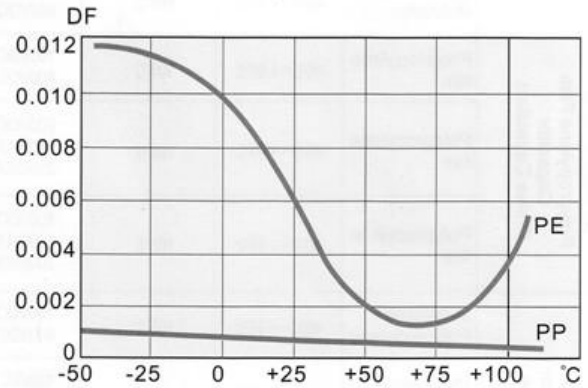
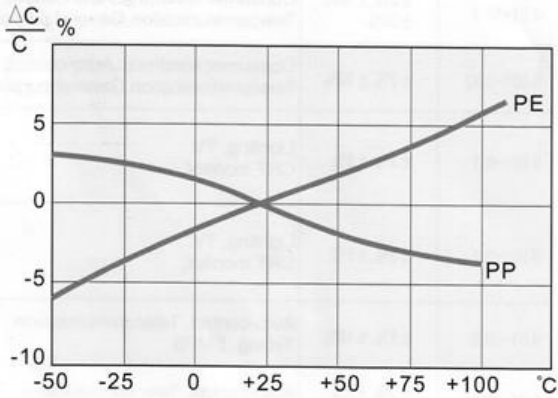
|                                      |   |
|--------------------------------------|---|
| <p>Damp Heat Test<br/>IEC 68-2-3</p> | <p>Temperature : <math>40^{\circ}\text{C} \pm 2^{\circ}\text{C}</math><br/> Humidity : <math>93 \pm 2/-3 \%</math><br/> Duration : 21 days<br/> No visible damage and deterioration in appearance and the marking shall be legible<br/> Capacitance change : <math>\Delta C/C : \leq \pm 5\%</math><br/> DF Change : <math>\tan \delta : \leq 0.5\%</math> at 1 KHZ<br/> Insulation Resistance: <math>\geq 50\%</math> of the value before test</p> |
|--------------------------------------|---|

✧ Soldering Temperature VS Time



|             |                                    |         |            |
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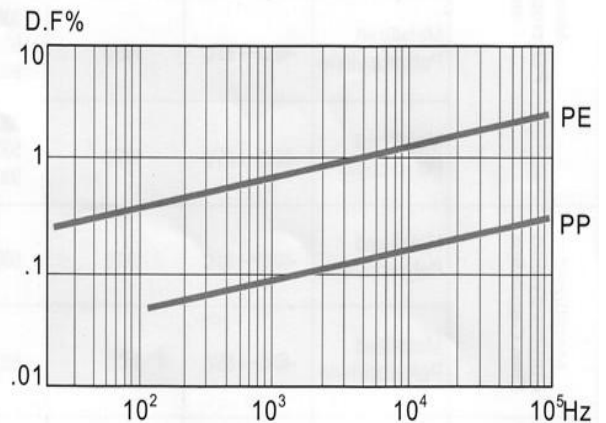
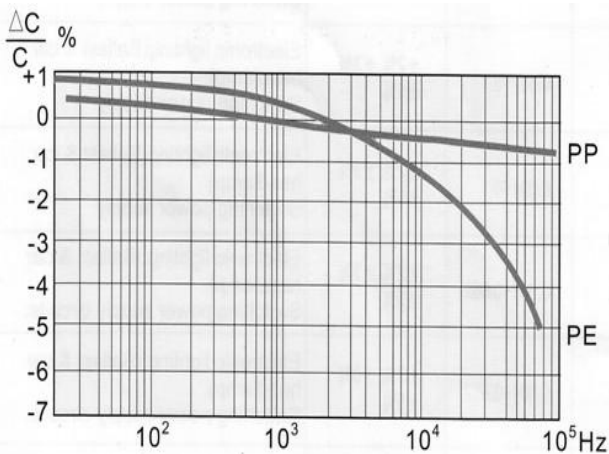
### ✧ Temperature Characteristics



PP: 聚丙烯薄膜 (Polypropylene Film)

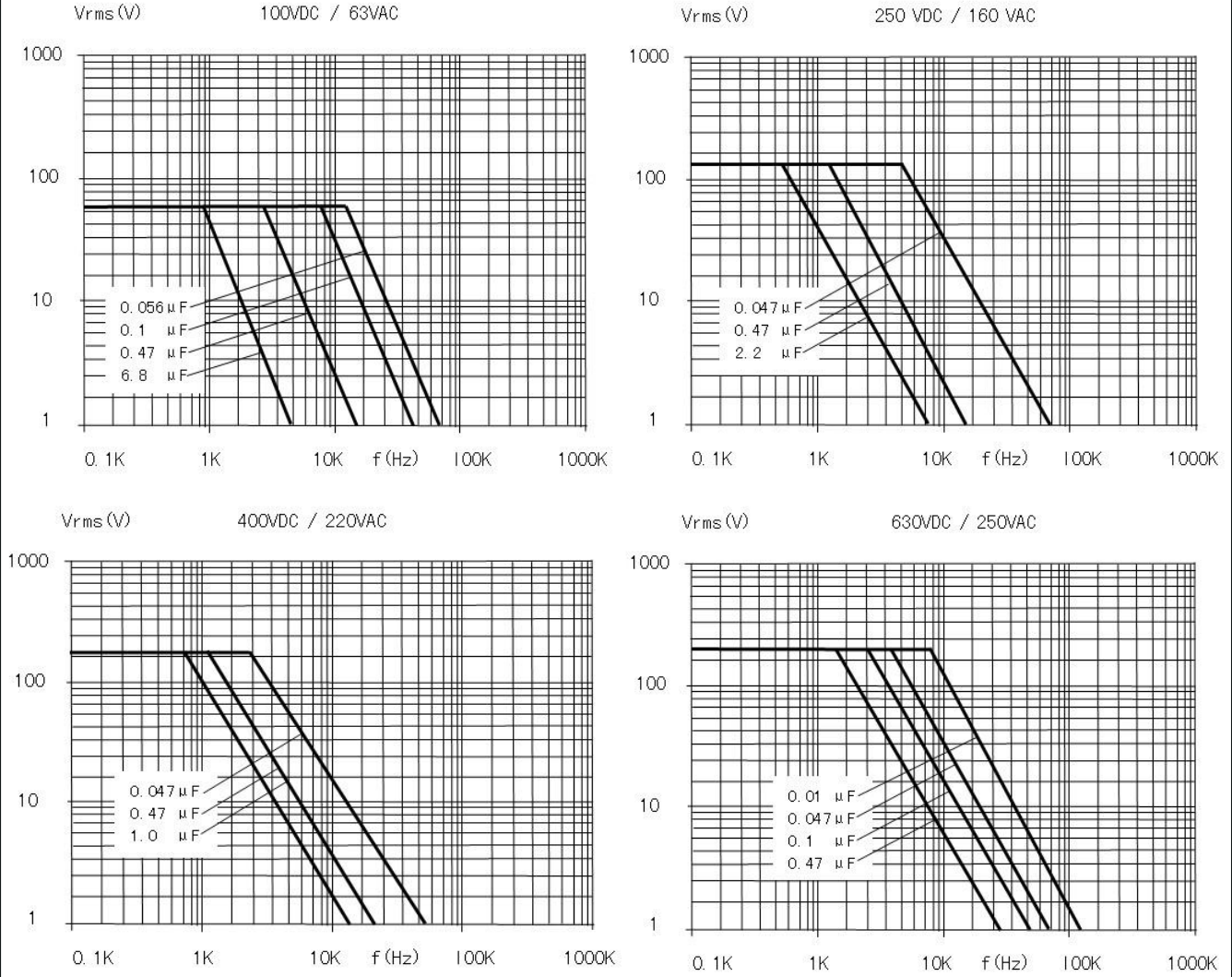
PE: 聚酯薄膜 (Polyester Film)

### ✧ Frequency Characteristics



|             |                                    |         |            |
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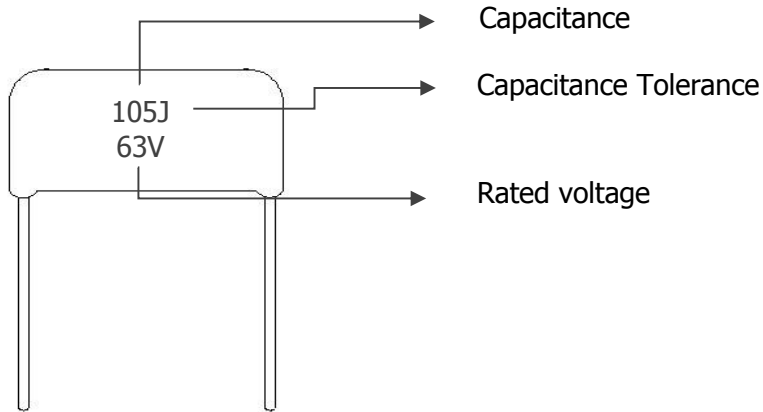
### ✧ Permissible AC Voltage VS Frequency Curve



Remark : Sine wave , Environmental temperature  $\leq 85^{\circ}C$

|             |                                    |         |            |
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### Marking Specification



### ✧ Taping Drawing & Dimensions

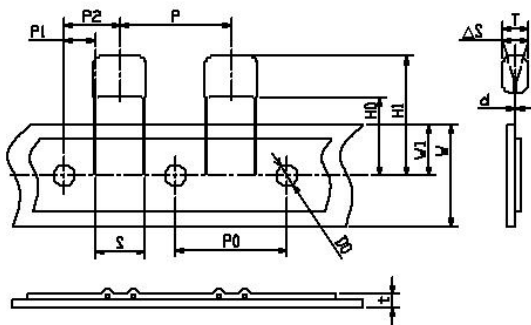


Fig.1

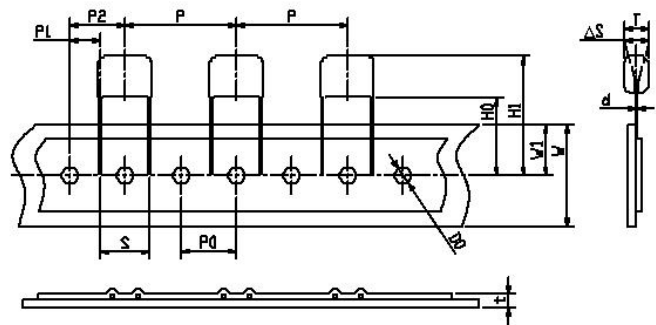
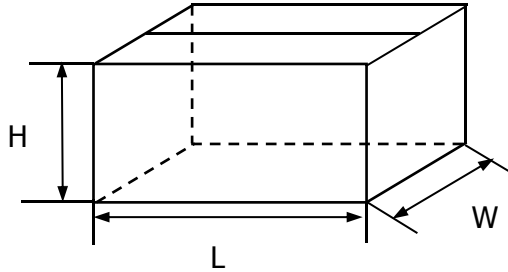


Fig.2

| Technique Data            | Code | ( mm ) Size |       |      |      |           | Technique Data   | Code | ( mm ) Size |       |      |      |           |
|---------------------------|------|-------------|-------|------|------|-----------|------------------|------|-------------|-------|------|------|-----------|
|                           |      | P=5         | P=7.5 | P=10 | P=15 | Tolerance |                  |      | P=5         | P=7.5 | P=10 | P=15 | Tolerance |
| Taping Type               |      | Fig1        | Fig1  | Fig2 | Fig2 |           | Taping Type      |      | Fig1        | Fig1  | Fig2 | Fig2 |           |
| Section distance          | P    | 12.7        | 12.7  | 25.4 | 25.4 | ±1.0      | Tape width       | W    | 18.0        | 18.0  | 18.0 | 18.0 | ±0.5      |
| Distance between two hole | P0   | 12.7        | 12.7  | 12.7 | 12.7 | ±0.3      | Jack position    | W1   | 9.0         | 9.0   | 9.0  | 9.0  | ±0.5      |
| Leads position            | P1   | 3.85        | 2.6   | 7.7  | 5.2  | ±0.7      | Bending height   | H0   | 18.5        | 18.5  | 18.5 | 18.5 | ±0.5      |
| Pitch for forming type    | S    | 5.0         | 7.5   | 10.0 | 15.0 | ±0.5      | Upper size       | H1   | 39          | 39    | 39   | 39   | max       |
| Body position             | P2   | 6.35        | 6.35  | 12.7 | 12.7 | ±1.3      | Dia. Of the hole | Do   | 4.0         | 4.0   | 4.0  | 4.0  | ±0.3      |
| Product Inclination       | ΔS   | 0           | 0     | 0    | 0    | ±0.2      | Tape thickness   | t    | 0.7         | 0.7   | 0.7  | 0.7  | ±0.2      |

|             |                                    |         |            |
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❖ Carton Size

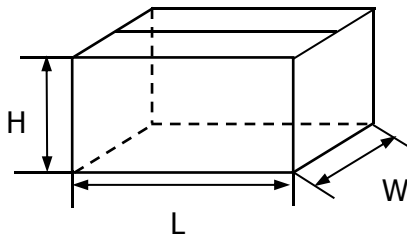


**Out packaging box for bulk**

L: 480mm

W: 320mm

H: 280mm

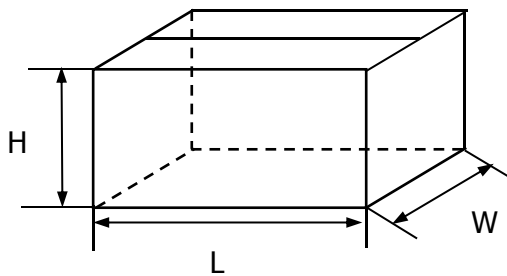


**Inner packing box for bulk**

L: 280mm

W: 225mm

H: 120mm

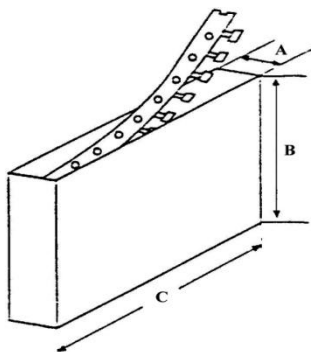


**Out packaging box for taping**

L: 640mm

W: 360mm

H: 290mm



**Inner packing box for taping**

A: 50mm

B: 320mm

C: 330mm