



SPECIFICATION FOR APPROVAL

File No.: Q/FRK 0.GS.E.C42-X02

| | |
|---------------|--|
| Product Name | Box-type Metallized Polypropylene Film Interference Suppression Capacitor (Class X2) |
| Product Type | C42(MKP62 Series) |
| Product Code | |
| Customer | |
| Customer Code | |
| Issue Date | 2009-05 |



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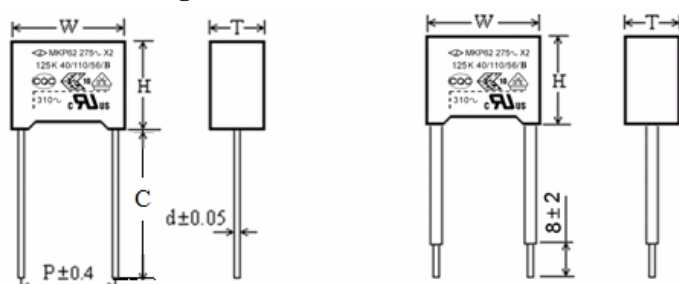
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Metallized polypropylene film interference suppression capacitor (Class X2, 275Vac/305Vac)

■ Outline Drawing



W±0.4mm, H±0.4mm, T±0.4mm

Lead Wire

Insulated Lead Wire(P≥10mm)

Note: There are two kind of the insulated lead wire:

1. Insulated rigid leads;
2. Insulated flexible leads.

| Lead Wire Dia. | 0.6 | 0.8 | 1.0 |
|---------------------------|-------|-------|-------|
| Insulated Lead Wire Gauge | AWG22 | AWG20 | AWG18 |

■ Features

- metallized polypropylene structure
- Withstanding overvoltage stressing
- Plastic case (UL94 V-0), Epoxy resin sealing.
- Widely used in interference suppression circuit

■ Safety Approvals

| | | |
|--|---------------------|---|
| | CQC | GB/T 14472-1998, 275/305VAC, 0.0010μF~10.0μF Certificate No.: CQC03001002875 |
| | ENEC-VDE | EN 60384-14:2005, 275/305VAC, 0.0010μF~10.0μF Certificate No.: 40000358 |
| | UL-CUL | UL1414 CSA C22.2 No.1, 250 VAC, 0.001μF to 1.0μF Certificate No.: E186600 |
| | | UL1283 CSA C22.2 No.8, 310 VAC, 0.001μF to 10.0μF Certificate No.: E186662 |
| | CB TEST CERTIFICATE | IEC 60384-14:2005 X2, 275/305 VAC, 0.001μF~10.0μF, 40/110/56/B Certificate No.: DE1--12559/M2, DE1-40344 |

■ Specifications

| | | | |
|--|--|--------------------------------------|-----------------------------------|
| Climatic Category/Passive Flammability Class | 40/110/56/B | | |
| Operating temperature range | -40°C ~ +110°C | | |
| Class | Class X2 | | |
| Rated Voltage (U _R) | 275/305Vac | | |
| Capacitance Range | 0.0010μF~10.0μF | | |
| Capacitance Tolerance | ±10%(K), ±20%(M) | | |
| Voltage Proof | Between Terminals | 2 000Vdc(2s) C _R ≤1.0 μ F | |
| | Between Terminals To Case | 1 800Vdc(2s) C _R >1.0 μ F | |
| Insulation Resistance | ≥15 000MΩ, C _R ≤0.33μF (20°C, 100V, 1min) | | |
| | ≥5 000s, C _R >0.33μF | | |
| Dissipation Factor | 0.0010μF≤C _R ≤0.47μF | ≤10×10 ⁻⁴ (1kHz,20°C) | ≤20×10 ⁻⁴ (10kHz,20°C) |
| | 0.47μF<C _R ≤1.0μF | ≤20×10 ⁻⁴ (1kHz,20°C) | ≤40×10 ⁻⁴ (10kHz,20°C) |
| | C _R >1.0μF | ≤30×10 ⁻⁴ (1kHz,20°C) | ≤40×10 ⁻⁴ (10kHz,20°C) |



Part number system

The 18 digits part number is formed as follow:

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| C | 4 | 2 | | | | | | | | | | | | | | | |

Digit 1 to 3 Series code of film capacitor

C42=MKP62

Digit 4 to 5 A.C. rated voltage

P2=275V Q2=305V

Digit 6 to 8 Rated capacitance value

For example : 103=10×10³ pF= 0.01μF

Digit 9 Capacitance tolerance

K=±10%, M=±20%

Digit 10 Pitch

3=7.5mm 4=10mm 6=15mm

9=22.5mm B=27.5mm F=37.5mm

Digit 11 Internal use

Digit 12 to 15 Lead dimensions and packaging code

Digit 16 to 18 Internal use

Table 1 lead dimensions and packaging code

| Digit 12 | | Digit 13 | | Digit 14 | | Digit 15 | |
|----------|---|-------------|--|----------|-------------|------------|---|
| code | explanation | code | explanation | code | explanation | code | explanation |
| A | ammo-pack | 3 4 6 | F=7.5mm F=10.0mm F=15.0mm | 0 | straight | 1 5 | each cap. among two consecutive holes P3=12.7mm, H=18.5mm(For pitch=7.5mm) P3=25.4mm;H=18.5mm (For pitch=10/15mm) (Detail parameter refer to page 15 of catalog) |
| C | straight lead "C" in the figure above | code | explanation | 0 | | 0 | Length tolerance ±0.5mm or standard length |
| | | 00 45 | standard lead length (18mm~26mm) lead length 4.5mm | | | | |
| D | Insulated flexible leads | 00 | lead length 150mm | | | 1 | Length tolerance ±5mm |
| E | Insulated rigid leads | C0 | lead length 30mm | | | 1 | Length tolerance 0~+5mm |



■ Dimensions(mm)

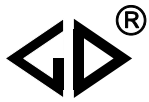
Reduced sizes

| 275Vac | | | | | | |
|--------|------|------|------|------|-----|-------------------|
| C (μF) | W | H | T | P | d | Part number |
| 0.033 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2333-4S****++ |
| 0.039 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2393-4S****++ |
| 0.047 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2473-4S****++ |
| 0.056 | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2563-4S****++ |
| 0.068 | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2683-4S****++ |
| 0.082 | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2823-4S****++ |
| 0.10M | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2104M4S****++ |
| 0.10K | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | C42P2104K4S****++ |
| 0.12 | 13.0 | 13.0 | 7.0 | 10.0 | 0.6 | C42P2124-4S****++ |
| 0.15 | 13.0 | 13.0 | 7.0 | 10.0 | 0.6 | C42P2154-4S****++ |
| 0.18 | 13.0 | 14.0 | 8.0 | 10.0 | 0.6 | C42P2184-4S****++ |
| 0.22M | 13.0 | 14.0 | 8.0 | 10.0 | 0.6 | C42P2224M4S****++ |
| 0.10M | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2104M6A****++ |
| 0.10 | 17.5 | 11.0 | 5.0 | 15.0 | 0.6 | C42P2104-6S****++ |
| 0.12 | 17.5 | 11.0 | 5.0 | 15.0 | 0.6 | C42P2124-6S****++ |
| 0.15M | 17.5 | 11.0 | 5.0 | 15.0 | 0.6 | C42P2154M6S****++ |
| 0.15K | 17.5 | 12.0 | 6.0 | 15.0 | 0.6 | C42P2154K6S****++ |
| 0.18 | 17.5 | 12.0 | 6.0 | 15.0 | 0.6 | C42P2184-6S****++ |
| 0.22M | 17.5 | 12.0 | 6.0 | 15.0 | 0.6 | C42P2224M6S****++ |
| 0.22K | 17.5 | 13.5 | 7.5 | 15.0 | 0.6 | C42P2224K6S****++ |
| 0.22K | 17.5 | 12.5 | 9.0 | 15.0 | 0.6 | C42P2224K6A****++ |
| 0.22K | 17.5 | 13.5 | 6.0 | 15.0 | 0.6 | C42P2224K6B****++ |
| 0.27 | 17.5 | 13.5 | 7.5 | 15.0 | 0.6 | C42P2274-6S****++ |
| 0.33M | 17.5 | 13.5 | 7.5 | 15.0 | 0.6 | C42P2334M6S****++ |
| 0.33K | 17.5 | 14.0 | 8.0 | 15.0 | 0.6 | C42P2334K6S****++ |
| 0.33M | 17.5 | 12.5 | 9.0 | 15.0 | 0.6 | C42P2334M6A****++ |
| 0.33M | 17.5 | 17.5 | 6.0 | 15.0 | 0.6 | C42P2334M6B****++ |
| 0.33K | 17.5 | 18.5 | 7.5 | 15.0 | 0.8 | C42P2334K6A****++ |
| 0.39 | 17.5 | 14.5 | 8.5 | 15.0 | 0.6 | C42P2394-6S****++ |
| 0.47M | 17.5 | 14.5 | 8.5 | 15.0 | 0.6 | C42P2474M6S****++ |
| 0.47M | 17.5 | 18.5 | 7.5 | 15.0 | 0.8 | C42P2474M6A****++ |
| 0.47K | 17.5 | 16.0 | 10.0 | 15.0 | 0.8 | C42P2474K6S****++ |
| 0.56 | 17.5 | 19.0 | 11.0 | 15.0 | 0.8 | C42P2564-6S****++ |
| 0.60 | 17.5 | 19.0 | 11.0 | 15.0 | 0.8 | C42P2604-6S****++ |
| 0.68 | 17.5 | 19.0 | 11.0 | 15.0 | 0.8 | C42P2684-6S****++ |
| 0.82M | 17.5 | 19.0 | 11.0 | 15.0 | 0.8 | C42P2824M6S****++ |

| 275Vac | | | | | | |
|--------|------|------|------|------|-----|-------------------|
| C (μF) | W | H | T | P | d | Part number |
| 0.22 | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2224-9S****++ |
| 0.27 | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2274-9S****++ |
| 0.33 | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2334-9S****++ |
| 0.39 | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2394-9S****++ |
| 0.47M | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2474M9S****++ |
| 0.47K | 26.5 | 16.0 | 7.0 | 22.5 | 0.8 | C42P2474K9S****++ |
| 0.56 | 26.5 | 16.0 | 7.0 | 22.5 | 0.8 | C42P2564-9S****++ |
| 0.60 | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 | C42P2604-9S****++ |
| 0.68 | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 | C42P2684-9S****++ |
| 0.82 | 26.5 | 18.5 | 10.0 | 22.5 | 0.8 | C42P2824-9S****++ |
| 1.0 | 26.5 | 18.5 | 10.0 | 22.5 | 0.8 | C42P2105-9S****++ |
| 1.2 | 26.5 | 20.0 | 11.0 | 22.5 | 0.8 | C42P2125-9S****++ |
| 1.5M | 26.5 | 20.0 | 11.0 | 22.5 | 0.8 | C42P2155M9S****++ |
| 1.5K | 26.5 | 22.0 | 12.0 | 22.5 | 0.8 | C42P2155K9S****++ |
| 1.8 | 26.5 | 24.5 | 15.5 | 22.5 | 0.8 | C42P2185-9S****++ |
| 2.2 | 26.5 | 24.5 | 15.5 | 22.5 | 0.8 | C42P2225-9S****++ |
| 0.82 | 32.0 | 18.0 | 9.0 | 27.5 | 0.8 | C42P2824-BS****++ |
| 1.0 | 32.0 | 18.0 | 9.0 | 27.5 | 0.8 | C42P2105-BS****++ |
| 1.2 | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 | C42P2125-BS****++ |
| 1.5 | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 | C42P2155-BS****++ |
| 1.8 | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 | C42P2185-BS****++ |
| 2.2M | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 | C42P2225MBS****++ |
| 2.2K | 32.0 | 25.0 | 13.0 | 27.5 | 0.8 | C42P2225KBS****++ |
| 2.7 | 32.0 | 28.0 | 14.0 | 27.5 | 0.8 | C42P2275-BS****++ |
| 3.3 | 32.0 | 33.0 | 18.0 | 27.5 | 0.8 | C42P2335-BS****++ |
| 3.9 | 32.0 | 33.0 | 18.0 | 27.5 | 0.8 | C42P2395-BS****++ |
| 4.7M | 32.0 | 33.0 | 18.0 | 27.5 | 0.8 | C42P2475MBS****++ |
| 4.7K | 32.0 | 37.0 | 22.0 | 27.5 | 0.8 | C42P2475KBS****++ |
| 5.6 | 32.0 | 37.0 | 22.0 | 27.5 | 0.8 | C42P2565-BS****++ |
| 6.8M | 32.0 | 37.0 | 22.0 | 27.5 | 0.8 | C42P2685MBS****++ |
| 1.8 | 41.0 | 22.0 | 11.0 | 37.5 | 1.0 | C42P2185-FS****++ |
| 2.2 | 41.0 | 24.0 | 13.0 | 37.5 | 1.0 | C42P2225-FS****++ |
| 2.7 | 41.0 | 24.0 | 13.0 | 37.5 | 1.0 | C42P2275-FS****++ |
| 3.3 | 41.0 | 28.0 | 14.0 | 37.5 | 1.0 | C42P2335-FS****++ |
| 3.9 | 41.0 | 30.0 | 16.0 | 37.5 | 1.0 | C42P2395-FS****++ |
| 4.7 | 41.0 | 30.0 | 16.0 | 37.5 | 1.0 | C42P2475-FS****++ |
| 5.6 | 41.0 | 33.5 | 18.5 | 37.5 | 1.0 | C42P2565-FS****++ |
| 6.8 | 41.0 | 33.5 | 18.5 | 37.5 | 1.0 | C42P2685-FS****++ |
| 8.2 | 41.0 | 37.0 | 22.0 | 37.5 | 1.0 | C42P2825-FS****++ |
| 10.0M | 41.0 | 37.0 | 22.0 | 37.5 | 1.0 | C42P2106MFS****++ |
| 10.0K | 41.0 | 41.0 | 26.0 | 37.5 | 1.0 | C42P2106KFS****++ |

Note: 1. “-”=capacitance tolerance code, M=±20%,K=±10%

2. “****”=lead dimensions and packing mode code (refer to table 1)



■ Dimensions(mm)

| 275Vac/305Vac [#] | | | | | | |
|----------------------------|------|------|-----|------|-----|--------------------|
| C (μF) | W | H | T | P | d | Part number |
| 0.0010 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2102-30*****++ |
| 0.0012 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2122-30*****++ |
| 0.0015 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2152-30*****++ |
| 0.0018 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2182-30*****++ |
| 0.0022 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2222-30*****++ |
| 0.0027 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2272-30*****++ |
| 0.0033 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2332-30*****++ |
| 0.0039 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2392-30*****++ |
| 0.0047 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2472-30*****++ |
| 0.0056 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2562-30*****++ |
| 0.0068 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2682-30*****++ |
| 0.0082 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2822-30*****++ |
| 0.010 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2103-30*****++ |
| 0.012 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2123-30*****++ |
| 0.015 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2153-30*****++ |
| 0.018 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2183-30*****++ |
| 0.022 | 10.5 | 9.0 | 4.0 | 7.5 | 0.6 | C42P2223-30*****++ |
| 0.027 | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | C42P2273-30*****++ |
| 0.033 | 10.5 | 11.0 | 5.0 | 7.5 | 0.6 | C42P2333-30*****++ |
| 0.039 | 10.5 | 12.0 | 6.0 | 7.5 | 0.6 | C42P2393-30*****++ |
| 0.047 | 10.5 | 12.0 | 6.0 | 7.5 | 0.6 | C42P2473-30*****++ |
| 0.0047 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2472-40*****++ |
| 0.0056 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2562-40*****++ |
| 0.0068 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2682-40*****++ |
| 0.0082 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2822-40*****++ |
| 0.010 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2103-40*****++ |
| 0.012 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2123-40*****++ |
| 0.015 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2153-40*****++ |
| 0.018 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2183-40*****++ |
| 0.022 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2223-40*****++ |
| 0.027 | 13.0 | 9.0 | 4.0 | 10.0 | 0.6 | C42P2273-40*****++ |
| 0.033 | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2333-40*****++ |
| 0.039 | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2393-40*****++ |
| 0.047 | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2473-40*****++ |
| 0.056 | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 | C42P2563-40*****++ |
| 0.068 | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | C42P2683-40*****++ |
| 0.082 | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | C42P2823-40*****++ |
| 0.10 | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 | C42P2104-40*****++ |
| 0.12 | 13.0 | 14.0 | 8.0 | 10.0 | 0.6 | C42P2124-40*****++ |
| 0.15 | 13.0 | 14.0 | 8.0 | 10.0 | 0.6 | C42P2154-40*****++ |

| 275Vac/305Vac [#] | | | | | | |
|----------------------------|------|------|------|------|-----|--------------------|
| C (μF) | W | H | T | P | d | Part number |
| 0.010 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2103-6A*****++ |
| 0.012 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2123-6A*****++ |
| 0.015 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2153-6A*****++ |
| 0.018 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2183-6A*****++ |
| 0.022 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2223-6A*****++ |
| 0.027 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2273-6A*****++ |
| 0.033 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2333-6A*****++ |
| 0.039 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2393-6A*****++ |
| 0.047 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2473-6A*****++ |
| 0.056 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2563-6A*****++ |
| 0.068 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2683-6A*****++ |
| 0.082 | 17.5 | 9.5 | 5.0 | 15.0 | 0.6 | C42P2823-6A*****++ |
| 0.010 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2103-60*****++ |
| 0.012 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2123-60*****++ |
| 0.015 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2153-60*****++ |
| 0.018 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2183-60*****++ |
| 0.022 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2223-60*****++ |
| 0.027 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2273-60*****++ |
| 0.033 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2333-60*****++ |
| 0.039 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2393-60*****++ |
| 0.047 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2473-60*****++ |
| 0.056 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2563-60*****++ |
| 0.068 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2683-60*****++ |
| 0.082 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2823-60*****++ |
| 0.10 | 17.5 | 11.0 | 5.0 | 15.0 | 0.8 | C42P2104-60*****++ |
| 0.12 | 17.5 | 12.0 | 6.0 | 15.0 | 0.8 | C42P2124-60*****++ |
| 0.15 | 17.5 | 12.0 | 6.0 | 15.0 | 0.8 | C42P2154-60*****++ |
| 0.18 | 17.5 | 13.5 | 7.5 | 15.0 | 0.8 | C42P2184-60*****++ |
| 0.22 | 17.5 | 13.5 | 7.5 | 15.0 | 0.8 | C42P2224-60*****++ |
| 0.27 | 17.5 | 14.5 | 8.5 | 15.0 | 0.8 | C42P2274-60*****++ |
| 0.33 | 17.5 | 16.0 | 10.0 | 15.0 | 0.8 | C42P2334-60*****++ |
| 0.39 | 17.5 | 19.0 | 11.0 | 15.0 | 0.8 | C42P2394-60*****++ |
| 0.47 | 17.5 | 19.0 | 11.0 | 15.0 | 0.8 | C42P2474-60*****++ |

- Note: 1. “-”=capacitance tolerance code, M=±20%,K=±10%
 2. “****”=lead dimensions and packing mode code (refer to table 1)
 3. ”#”when the rated voltage is 305VAC,the digit 4~5 is Q2.



■ Dimensions(mm)

| 275Vac/305Vac [#] | | | | | | |
|----------------------------|------|------|------|------|-----|--------------------|
| C (μF) | W | H | T | P | d | Part number |
| 0.15 | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2154-90*****++ |
| 0.18 | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2184-90*****++ |
| 0.22 | 26.5 | 15.0 | 6.0 | 22.5 | 0.8 | C42P2224-90*****++ |
| 0.27 | 26.5 | 16.0 | 7.0 | 22.5 | 0.8 | C42P2274-90*****++ |
| 0.33 | 26.5 | 16.0 | 7.0 | 22.5 | 0.8 | C42P2334-90*****++ |
| 0.39 | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 | C42P2394-90*****++ |
| 0.47 | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 | C42P2474-90*****++ |
| 0.56 | 26.5 | 18.5 | 10.0 | 22.5 | 0.8 | C42P2564-90*****++ |
| 0.68 | 26.5 | 18.5 | 10.0 | 22.5 | 0.8 | C42P2684-90*****++ |
| 0.82 | 26.5 | 22.0 | 12.0 | 22.5 | 0.8 | C42P2824-90*****++ |
| 1.0 | 26.5 | 22.0 | 12.0 | 22.5 | 0.8 | C42P2105-90*****++ |
| 1.2 | 26.5 | 24.5 | 15.5 | 22.5 | 0.8 | C42P2125-90*****++ |
| 1.5 | 26.5 | 24.5 | 15.5 | 22.5 | 0.8 | C42P2155-90*****++ |

| 275Vac/305Vac [#] | | | | | | |
|----------------------------|------|------|------|------|-----|--------------------|
| C (μF) | W | H | T | P | d | Part number |
| 0.47 | 32.0 | 18.0 | 9.0 | 27.5 | 0.8 | C42P2474-B0*****++ |
| 0.56 | 32.0 | 18.0 | 9.0 | 27.5 | 0.8 | C42P2564-B0*****++ |
| 0.68 | 32.0 | 18.0 | 9.0 | 27.5 | 0.8 | C42P2684-B0*****++ |
| 0.82 | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 | C42P2824-B0*****++ |
| 1.0 | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 | C42P2105-B0*****++ |
| 1.2 | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 | C42P2125-B0*****++ |
| 1.5 | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 | C42P2155-B0*****++ |
| 1.8 | 32.0 | 24.5 | 15.0 | 27.5 | 0.8 | C42P2185-B0*****++ |
| 2.2 | 32.0 | 28.0 | 14.0 | 27.5 | 0.8 | C42P2225-B0*****++ |
| 2.7 | 32.0 | 33.0 | 18.0 | 27.5 | 0.8 | C42P2275-B0*****++ |
| 3.3 | 32.0 | 33.0 | 18.0 | 27.5 | 0.8 | C42P2335-B0**** ++ |
| 3.9 | 32.0 | 37.0 | 22.0 | 27.5 | 0.8 | C42P2395-B0*****++ |
| 4.7 | 32.0 | 37.0 | 22.0 | 27.5 | 0.8 | C42P2475-B0*****++ |
| 1.8 | 41.0 | 26.0 | 12.0 | 37.5 | 1.0 | C42P2185-F0*****++ |
| 2.2M | 41.0 | 26.0 | 12.0 | 37.5 | 1.0 | C42P2225-F0*****++ |
| 2.2K | 41.0 | 28.0 | 14.0 | 37.5 | 1.0 | C42P2225-F0*****++ |
| 2.7 | 41.0 | 28.0 | 14.0 | 37.5 | 1.0 | C42P2275-F0*****++ |
| 3.3 | 41.0 | 30.0 | 16.0 | 37.5 | 1.0 | C42P2335-F0*****++ |
| 3.9 | 41.0 | 32.0 | 17.0 | 37.5 | 1.0 | C42P2395-F0*****++ |
| 4.7 | 41.0 | 33.5 | 18.5 | 37.5 | 1.0 | C42P2475-F0*****++ |
| 5.6 | 41.0 | 37.0 | 22.0 | 37.5 | 1.0 | C42P2565-F0*****++ |
| 6.8 | 41.0 | 37.0 | 22.0 | 37.5 | 1.0 | C42P2685-F0*****++ |
| 8.2 | 41.0 | 41.0 | 26.0 | 37.5 | 1.0 | C42P2825-F0*****++ |
| 10.0 | 41.0 | 43.0 | 28.0 | 37.5 | 1.0 | C42P2106-F0*****++ |

- Note: 1. “-”=capacitance tolerance code, M=±20%,K=±10%
 2. “****”=lead dimensions and packing mode code (refer to table 1)
 3. ”#”when the rated voltage is 305VAC,the digit 4~5 is Q2.

Maximum permissible voltage change per unit of time

| Rated Voltage (Vac) | dv/dt(V/us) | | | | | |
|------------------------|-------------|--------|--------|----------|----------|----------|
| | P=7.5mm | P=10mm | P=15mm | P=22.5mm | P=27.5mm | P=37.5mm |
| 275/305 | 500 | 500 | 400 | 200 | 150 | 100 |

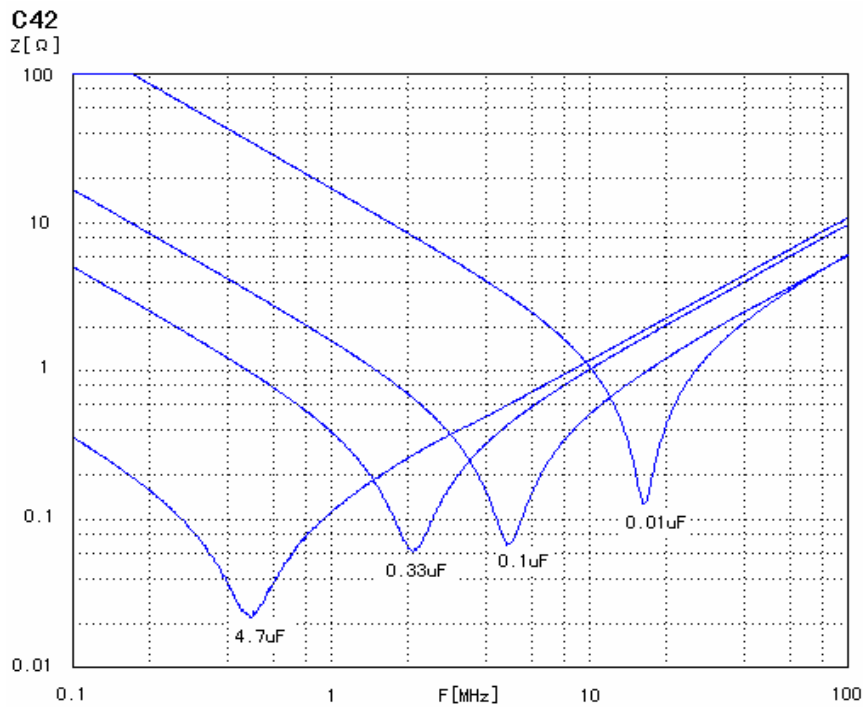
Note:

- 1、 Rated voltage pulse slope $(dv/dt)_R$ at rated voltage.
- 2、 If the working voltage(U) is lower than the rated voltage(U_R),the capacitor can be worked at a higher dv/dt. In this case, the maximum allowed dv/dt is obtain by multiplying the right value with U_R/U .

Impedance Vs. Frequency

TYPICAL GRAPHS

Z=f(f) Typical values



2 Test Method And Performance

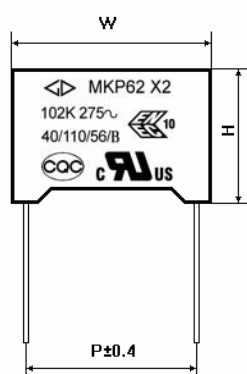
| No. | Item | Performance | Test Method (IEC 60384-14) |
|-----|-----------------------------------|---|--|
| 1 | Solderability | Good quality of tinning | Solder temperature: 245°C ±5°C Immersion time: 2.0s±0.5s |
| 2 | Terminal strength | There shall be no visible damage | Tense: 0.50<d≤0.80, 10N 0.80<d≤1.25, 20N Bend: 0.50<d≤0.80, 5N 0.80<d≤1.25, 10N The terminals shall be bent 2 times in each direction |
| 3 | Resistance to solder heat | There shall be no visible damage $\Delta C/C \leq \pm 5\%$ (relative to the initial value) | Solder temperature: 260°C ±5°C Immersion time: 10s ±1s |
| 4 | Solvent resistance of the marking | The marking shall be legible | Solvent: Industrial isopropanol. Solvent temperature: 23°C ±5°C Dipping time: 5min ±0.5min Condition: scrub Scrub material: absorbent cotton Reverting time: No |
| 5 | Initial measurement | Capacitance, Tgδ | |
| | Rapid change of temperature | There shall be no evidence of deterioration. | $\theta_A = -40^\circ\text{C}$, $\theta_B = +110^\circ\text{C}$ 5 cycles Duration: t=30min |
| | Vibration | There shall be no evidence of deterioration. | Amplitude 0.75mm or acceleration 100m/s ² (whichever is the smaller severity), f: 10Hz to 500Hz. Three directions, 2h for each direction, total 6h. |
| | Bump | There shall be no evidence of deterioration. | 4 000 times, Acceleration: 400m/s ² , Pulse duration, 6ms |
| | Final measurement | There shall be no visible damage $\Delta C/C \leq \pm 5\%$ (relative to the initial value) | |
| 6 | climate sequence | Initial measurement | |
| | | Dry heat | +110°C, 16h |
| | | Damp heat, Cyclic | Test Db, Severity: b, the first cycle |
| | | Cold | -40°C, 2h |
| | | Damp heat, cyclic other | Test Db, Severity b, the other cycles, |
| | | Final measurement | There shall be no visible damage, legible marking $\Delta C/C \leq \pm 5\%$ (relative to the initial value) Increase of tgδ: $C_R \leq 1\mu\text{F}$: ≤0.008 (10kHz) $C_R > 1\mu\text{F}$: ≤0.005 (1kHz) Dielectric strength : there shall be no permanent breakdown or flashover I.R.: ≥ 50% of the rated value |



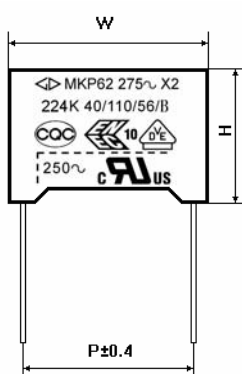
| No. | Item | Performance | Test Method (IEC 60384-14) |
|-----|--------------------------|---|---|
| 7 | Damp heat steady state | <p>There shall be no visible damage, legible marking</p> <p>$\Delta C/C \leq \pm 5\%$ (relative to the initial value)</p> <p>Increase of $\text{tg}\delta$:</p> <p>$C_R \leq 1\mu\text{F}$: ≤ 0.008 (10kHz)</p> <p>$C_R > 1\mu\text{F}$: ≤ 0.005 (1kHz)</p> <p>Dielectric strength : there shall be no permanent breakdown or flashover</p> <p>I.R.: $\geq 50\%$ of the rated value</p> | <p>Temperature: $40^\circ\text{C} \pm 2^\circ\text{C}$</p> <p>Humidity: $93 \pm 3\%$ RH</p> <p>Duration: 56 days</p> |
| 8 | Impulse voltage | <p>There are three or more waveforms which indicate that no self-heating breakdown have occurred when it is monitored by the monitor</p> | <p>Each individual capacitor shall be subjected to 24 impulses of the same polarity (when any three successive impulses are shown by the monitor to have a wave form indicating that no self-healing breakdown have taken place the impulses can be stopped), the time between impulses shall not be less than 10S, and the peak value of the voltage impulse: 2.5kV (suitable for $C_R \leq 1\mu\text{F}$; When $C_R > 1\mu\text{F}$, the capacitor can endure pulse voltage value is $2.5/\sqrt{C_R}$ kV)</p> |
| 9 | Endurance | <p>There shall be no visible damage, legible marking</p> <p>$\Delta C/C \leq \pm 10\%$ (relative to the initial value)</p> <p>Increase of $\text{tg}\delta$: $C_R \leq 1\mu\text{F}$: ≤ 0.008 (10kHz)</p> <p>$C_R > 1\mu\text{F}$: ≤ 0.005 (1kHz)</p> <p>Dielectric strength : There shall be no breakdown or flashover</p> <p>I.R. : $\geq 50\%$ of the rated value</p> | <p>$+110^\circ\text{C}$, $1.25U_R$ V a.c., 1 000h</p> <p>The voltage shall be subjected to 1000Vrms for 0.1s every one hour during test.</p> |
| 10 | Charging and discharging | <p>$\Delta C/C \leq \pm 10\%$ (relative to the initial value)</p> <p>Increase of $\text{tg}\delta$:</p> <p>$C_R \leq 1\mu\text{F}$: ≤ 0.008 (10kHz)</p> <p>$C_R > 1\mu\text{F}$: ≤ 0.005 (1kHz)</p> <p>I.R.: $\geq 50\%$ of the rated value</p> | <p>Times: 10 000</p> <p>Duration of charging: 0.5s</p> <p>Duration of discharging: 0.5s</p> <p>Charging voltage: $\sqrt{2}U_R$ V d.c.</p> <p>Charging resistance: $220/C_R$ (Ω) or the current $\leq 1.0\text{A}$ (whichever is the minor)</p> <p>Discharging resistance:</p> $R = \frac{\sqrt{2}U_R}{C_R \times \frac{dU}{dt}} (\Omega)$ <p>C_R: Capacitance (μF)</p> <p>dU/dt (V/us) : 100V/μs</p> |

| No. | Item | Performance | Test Method (IEC 60384-14) |
|-----|----------------------|---|---|
| 11 | Passive flammability | The flaming time of each capacitor shall not go beyond 10s after it is taken apart from the flame. Drop of each capacitor caused by flame shall not fire the tissue below. | Ref.item 4.17 Needle flame test The category of flammability: B Expose time: 1 time Capacitor Volume Exposing time $250 < V(\text{mm}^3) \leq 500$ 20s $500 < V(\text{mm}^3) \leq 1750$ 30s $V(\text{mm}^3) > 1750$ 60s |
| 12 | Active flammability | The cheese cloth around the capacitor shall not burn with a flame. | The specimens shall be individually wrapped in at least 1, but not more than 2, complete layers of cheesecloth, the cheesecloth shall be untreated pure cotton cloth. Each sample shall be subjected to 20 discharged, the interval between successive discharges shall be 5s. $U_i = 2.5kV_0^{+7\%}$ U_R be applied and be maintained for 2 min after the last discharge. |

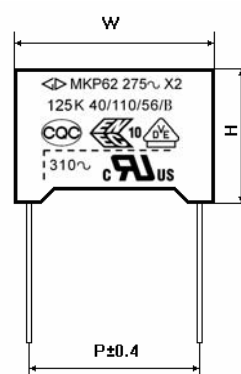
3 Marking



$P=7.5$ or 10.0mm



$P \geq 15.0\text{mm}$ and $C_R \leq 1.0\mu\text{F}$



$C_R > 1.0\mu\text{F}$

Marking Introduction

| Sign | explain | Sign | explain |
|--------------|---------------------------------|-------------|---|
| | Brand | | ENEC-VDE Approval |
| MKP62 | Type | | CQC Approval |
| 275~ | Rated voltage | | UL, CUL Approval |
| X2 | Class | 250~/310~ | Rated voltage (UL, UCL) |
| 102/224/125K | Rated capacitance and tolerance | 40/110/56/B | Climate category / Passive Flammability Class |

4 Taping specification for box-type capacitor

■ Outline Drawing

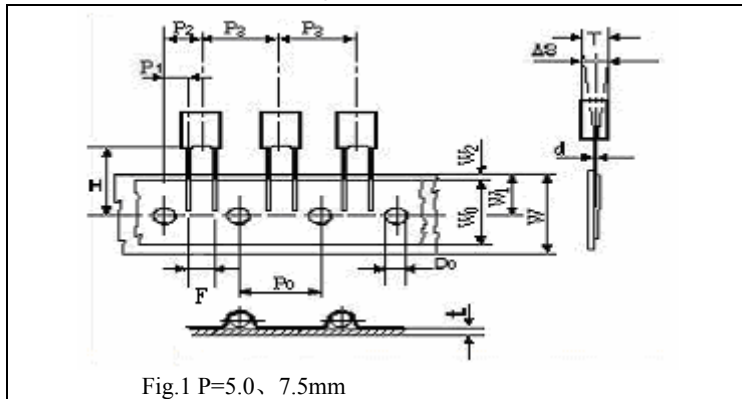


Fig.1 P=5.0、7.5mm

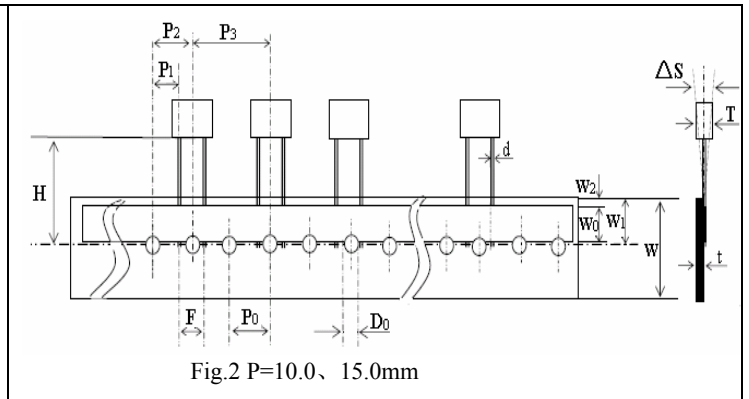


Fig.2 P=10.0、15.0mm

■ Taping Dimensions(mm)

| Technology index title | Code | Dimensions | | | | Tolerance |
|--------------------------------------|----------------|------------|--------|--------|--------|--------------|
| | | P=5.0 | P=7.5 | P=10.0 | P=15.0 | |
| Taping type | — | Fig 1 | Fig 1 | Fig2 | Fig 2 | — |
| Part number Digit12-15 | Ammo-pack | A201 | A301 | A405 | A605 | |
| Taping pitch | P ₃ | 12.7 | 12.7 | 25.4 | 25.4 | ±1.0 |
| Feed hole pitch | P ₀ | 12.7 | 12.7 | 12.7 | 12.7 | ±0.2 |
| Center of wire | P ₁ | 3.85 | 2.6 | 7.7 | 5.2 | ±0.7 |
| Center of body | P ₂ | 6.35 | 6.35 | 12.7 | 12.7 | ±1.3 |
| Pitch of taping wire | F** | 5.0 | 7.5 | 10.0 | 15.0 | +0.6 -0.1 |
| Component alignment | △S | 0 | 0 | 0 | 0 | ±2.0 |
| Height of component from tape center | H*** | 18.5 | 18.5 | 18.5 | 18.5 | ±0.5 |
| Carrier tape width | W | 18.0 | 18.0 | 18.0 | 18.0 | +1.0 -0.5 |
| Hold down tape width | W ₀ | 6min | 12min | 12min | 12min | — |
| Hole position | W ₁ | 9.0 | 9.0 | 9.0 | 9.0 | ±0.5 |
| Hold down tape position | W ₂ | 1.5max | 1.5max | 1.5max | 1.5max | — |
| Feed hole dia. | D ₀ | 4.0 | 4.0 | 4.0 | 4.0 | ±0.2 |
| Tape thickness | t | 0.7 | 0.7 | 0.7 | 0.9 | ±0.2 |

■ Packing Quantity

| Pitch (mm) | Box thickness T(mm) | Ammo-pack (pcs/box) | |
|---------------|---------------------|---------------------|--------|
| | | Domestic | Export |
| 5.0 | 3.5 | 1 700 | 1 500 |
| | 4.5 | 1 400 | 1 300 |
| | 5.0 | 1 200 | 1 000 |
| | 6.0 | 1 000 | 800 |
| 7.5 | 3.5 | 1 700 | 1 500 |
| | 4.0 | 1 500 | 1 300 |
| | 5.0 | 1 200 | 1 000 |
| | 6.0 | 1 000 | 800 |
| 10.0/ 15.0 | 4.0 | 750 | 650 |
| | 5.0 | 600 | 500 |
| | 6.0 | 500 | 450 |
| 15.0 | 7.5 | 400 | 350 |
| | 8.5 | 350 | 300 |
| | 10.0 | 300 | 250 |
| | 11.0 | 250 | 200 |

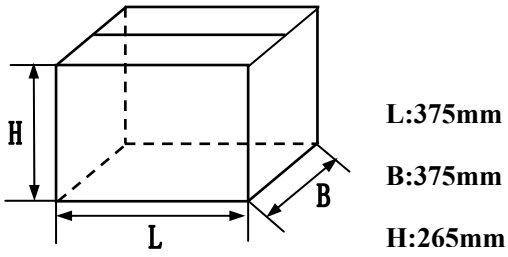
Note: * P₀=15mm is also available;

**F can be other lead spacing;

***H=16.5mm is available;

5 Packing in bulk

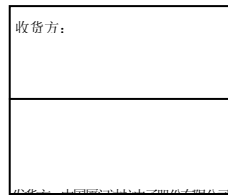
5.1 Out packing box for bulk



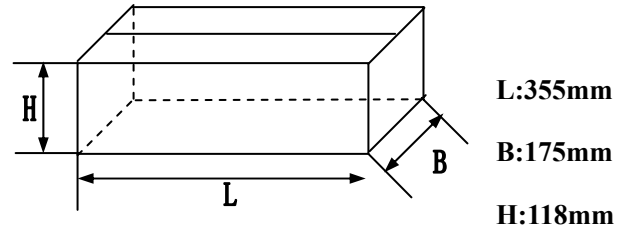
Plane drawing



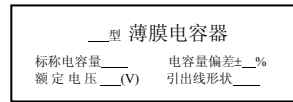
Overlooking Drawing



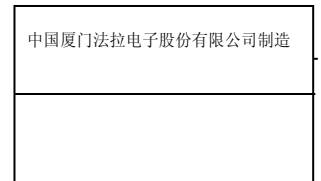
5.2 Inner packing box for bulk



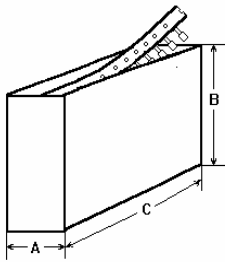
Plane drawing



Overlooking Drawing



5.3 Box size for Ammo-pack



A=48±3; B=260±3; C=330±3