

MPX/X2 Metallized Polypropylene Film Interference Suppression Capacitors (Class X2) Data Sheet







Feature

- Wide capacitance range from 0.001uF to 2.2uF.
- Operating Temperature: -40°C ~ 110°C.
- Storage Temperature: 15°C ~ 35°C.
- Withstanding over-voltage stressing.
- Excellent active and passive flame resistant abilities (UL94V-0).

Applications

- Widely used in across-the-line, interference suppression circuit.ect.

Applicable Standard

| Approval | | Organization | Safety Standards | Certificate No. |
|---------------|---|--------------|-------------------|-----------------|
| USA Canada |  | UL/CUL | UL60384 | E208107 |
| Germany |  | VDE | EN60384-14 | 40034679 |
| EU |  | ENEC | EN60384-14 | 40034679 |
| Korea |  | KTL | K60384 | SU03031-12001 |
| | | | | SU03031-12002 |
| | | | | SU03031-12003 |
| | | | | SU03031-12004 |
| China |  | CQC | GB/T 6346.14-2015 | CQC08001024360 |
| IEC |  | IEC-CB | IEC60384-14 | CN11932 |

Part Number Code

| | | | | | | | | | | | | |
|----|----|-----|---|---|---|----|-----|-----|-----|---|---|---|
| X2 | P2 | 104 | K | Q | 1 | B0 | 180 | 120 | 060 | E | S | 0 |
|----|----|-----|---|---|---|----|-----|-----|-----|---|---|---|

Songtian
X2

Capacitance
103:10nF
104:100nF
105:1.0μF
225:2.2μF

Pitch
N:10.0mm
Q:15.0mm
T:22.5mm
V:27.5mm

Width
060:6.0mm
180:18.0mm

Thickness
060:6.0mm
120:12.0mm

Inner Management

Voltage
P2:275VAC
Q2:305VAC
Q3:310VAC

Foot Type
1:Long Straight
2:Inside Kink Lead
5:Straight Lead Taping
6:Inner Crimped Tapping

Height
060:6.0mm
120:12.0mm

Client Catagoryt
S:Yellow
E:Grey

Environmental Standard
E:RoHS
F:RoHS+Halogen-Free

Tolerance
K:±10%

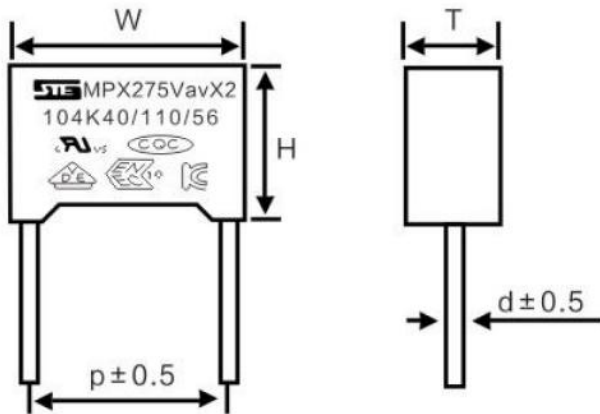
Lead Length
30~39:3.0~3.9mm
40~49:4.0~4.9mm
50~59:5.0~5.9mm
60~69:6.0~6.9mm
70~79:7.0~7.9mm
80~89:8.0~8.9mm
90~99:9.0~9.9mm

Lead Length
A0~A9:11.0~19.0mm
B0~B9:20.0~29.0mm
C0~C9:30.0~39.0mm

Specifications

| | |
|-------------------------------------|--|
| Climatic Category | 40/110/56 |
| Rated Voltage | 275VAC、305VAC、310VAC |
| Dissipation Factor(tanδ) | ≤0.1% |
| Withstand Voltage | Between terminals to case: 2U _R +1500VAC Minimum of 2000VAC |
| | Between terminals:4.3U _R (DC)/5S |
| Insulation Resistance (I.R.) | C _R ≤0.33μF, IR≥15000MΩ C _R >0.33μF, IR≥6000S Note: T[s]=I.R.[MΩ]*CN [μF] 20℃、100V、60S |

Dimensions (mm) and Approval



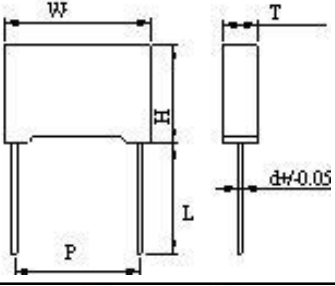
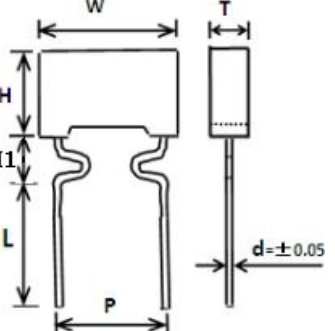
| Capacitance (uF) | Rated Voltage | Size (mm) | | | | |
|------------------|---------------|-----------|-------|-------|-------|--------|
| | | W±0.5 | H±0.5 | T±0.5 | P±1.0 | d±0.05 |
| 0.001 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.0022 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.0033 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.0039 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.0047 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.01 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.022 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.033 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |

| Capacitance (uF) | Rated Voltage | Size (mm) | | | | |
|------------------|---------------|-----------|-------|-------|-------|--------|
| | | W±0.5 | H±0.5 | T±0.5 | P±1.0 | d±0.05 |
| 0.047 | 275VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 11.0 | 5.0 | 10.0 | 0.6 |
| 0.068 | 275VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| 0.082 | 275VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| 0.1 | 275VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| | 305VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| | 310VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| 0.15 | 275VAC | 13.0 | 12.0 | 6.0 | 10.0 | 0.6 |
| 0.22 | 275VAC | 13.0 | 15.0 | 8.0 | 10.0 | 0.6 |
| 0.033 | 275VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| 0.047 | 275VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| 0.068 | 275VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 11.0 | 5.0 | 15.0 | 0.8 |
| 0.082 | 275VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| 0.1 | 275VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| 0.15 | 275VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 12.0 | 6.0 | 15.0 | 0.8 |
| 0.22 | 275VAC | 18.0 | 14.5 | 8.5 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 14.5 | 8.5 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 14.5 | 8.5 | 15.0 | 0.8 |

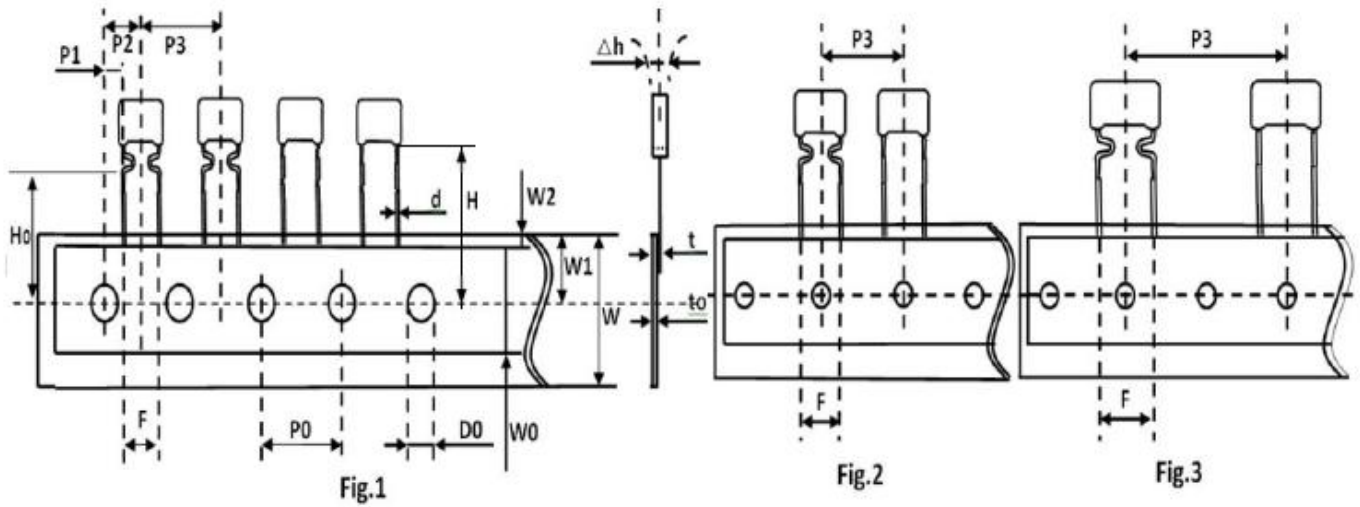
| Capacitance (uF) | Rated Voltage | Size (mm) | | | | |
|------------------|---------------|-----------|-------|-------|-------|--------|
| | | W±0.5 | H±0.5 | T±0.5 | P±1.0 | d±0.05 |
| 0.33 | 275VAC | 18.0 | 14.5 | 8.5 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| 0.47 | 275VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| 0.56 | 275VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 16.0 | 10.0 | 15.0 | 0.8 |
| 0.68 | 275VAC | 18.0 | 19.0 | 11.0 | 15.0 | 0.8 |
| | 305VAC | 18.0 | 19.0 | 11.0 | 15.0 | 0.8 |
| | 310VAC | 18.0 | 19.0 | 11.0 | 15.0 | 0.8 |
| 0.22 | 275VAC | 26.5 | 16.5 | 7.0 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 16.5 | 7.0 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 16.5 | 7.0 | 22.5 | 0.8 |
| 0.27 | 275VAC | 26.5 | 16.5 | 7.0 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 16.5 | 7.0 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 16.5 | 7.0 | 22.5 | 0.8 |
| 0.33 | 275VAC | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 |
| 0.47 | 275VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| 0.56 | 275VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| 0.68 | 275VAC | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 |
| 0.82 | 275VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| 1.0 | 275VAC | 26.5 | 17.0 | 8.5 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 20.0 | 11.0 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 20.0 | 11.0 | 22.5 | 0.8 |

| Capacitance (uF) | Rated Voltage | Size (mm) | | | | |
|------------------|---------------|-----------|-------|-------|-------|--------|
| | | W±0.5 | H±0.5 | T±0.5 | P±1.0 | d±0.05 |
| 1.2 | 275VAC | 26.5 | 19.0 | 10.0 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 22.0 | 12.5 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 22.0 | 12.5 | 22.5 | 0.8 |
| 1.5 | 275VAC | 26.5 | 20.0 | 11.0 | 22.5 | 0.8 |
| | 305VAC | 26.5 | 22.0 | 12.5 | 22.5 | 0.8 |
| | 310VAC | 26.5 | 22.0 | 12.5 | 22.5 | 0.8 |
| 0.68 | 275VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 305VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 310VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| 0.82 | 275VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 305VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 310VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| 1.0 | 275VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 305VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 310VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| 1.2 | 275VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 305VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| | 310VAC | 32.0 | 20.0 | 11.0 | 27.5 | 0.8 |
| 1.5 | 275VAC | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 |
| | 305VAC | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 |
| | 310VAC | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 |
| 2.0 | 275VAC | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 |
| | 305VAC | 32.0 | 25.0 | 14.0 | 27.5 | 0.8 |
| | 310VAC | 32.0 | 25.0 | 14.0 | 27.5 | 0.8 |
| 2.2 | 275VAC | 32.0 | 22.0 | 13.0 | 27.5 | 0.8 |
| | 305VAC | 32.0 | 25.0 | 14.0 | 27.5 | 0.8 |
| | 310VAC | 32.0 | 25.0 | 14.0 | 27.5 | 0.8 |

Lead Configuration

| Lead Style | Drawing | Lead Length L (mm) | Coating Lead Length H1(mm) |
|---------------|--|--|---|
| Long Straight |  | ① $[2.5 \leq L < 6.0] \pm 0.5$; ② $[6.0 \leq L \leq 10] \pm 1.0$ | / |
| Inner Crimped |  | ① $[2.5 \leq L < 6.0] \pm 0.5$; ② $[6.0 \leq L \leq 10] \pm 1.0$ | Pitch $P > 10\text{mm}$: $H1 < 6.0\text{mm}$ Pitch $P \leq 10\text{mm}$: $H1 < 5.0\text{mm}$ |

Taping And Dimensions (mm)



| Symbol | Fig.1 | Fig.2 | Fig.2 | Fig.3 | Fig.3 | Tolerance |
|--------|-------|-------|-------|-------|-----------|-----------|
| | P=5.0 | P=7.5 | P=10 | P=15 | P=20/22.5 | |
| P3 | 12.7 | 12.7 | 12.7 | 25.4 | 30.0 | ±1.0 |
| P2 | 6.35 | / | / | / | / | ±1.3 |
| P0 | 12.7 | 12.7 | 12.7 | 12.7 | 15.0 | ±0.3 |
| P1 | 3.85 | / | / | / | / | ±0.7 |
| F | 5.0 | 7.5 | 10.0 | 15.0 | 20.0/22.5 | ±1.0 |
| H | 20.0 | 20.0 | 20.0 | 20.0 | 20.0 | ±1.0 |
| H0 | 16.5 | 16.5 | 16.5 | 16.5 | 16.5 | ±0.5 |
| Δh | 0 | 0 | 0 | 0 | 0 | ±2.0 |
| W | 18.0 | 18.0 | 18.0 | 18.0 | 18.0 | +1.0/-0.5 |
| W0 | 12.0 | 12.0 | 12.0 | 12.0 | 12.0 | ±1.0 |
| W1 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | ±0.5 |
| W2 | 3.0 | 3.0 | 3.0 | 3.0 | 3.0 | Max |
| D0 | 4.0 | 4.0 | 4.0 | 4.0 | 4.0 | ±0.3 |
| d | 0.5 | 0.6 | 0.6 | 0.8 | 0.8 | ±0.05 |
| t | 1.0 | 1.1 | 1.1 | 1.4 | 1.4 | ±0.2 |
| t0 | 0.38 | 0.38 | 0.38 | 0.47 | 0.47 | ±0.04 |

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