

## X1M series 跨接抑制射頻突波電容器

FOR INTERFERENCE SUPPRESSION AND  
ACROSS-THE-LINE, CLASS X1

### INTRODUCTION

X1 are non-inductively wound with a metallized polypropylene film dielectric/electrode, encapsulated in flame retardant(UL94,V-0) plastic case and epoxy resin end seal.

### X1

- S Tinned copper clad steel wire radial leads.
- P UL 1015 or UL 1017 AwG#16~24 solid PVC insulation wire radial leads.

### APPLICATIONS

- Ideal for use in line by pass, antenna coupling, across-the line and spark killer circuits.
- Available for EMI filter.
- Switching power supply application.
- Business machines appliances, such as: typewriters, adding machines, computer displays and monitors.
- Household appliances, such as: mixers, fans, coffee grinders audion and circuits.
- Thyristor and triac appliances, such as: dimmers:

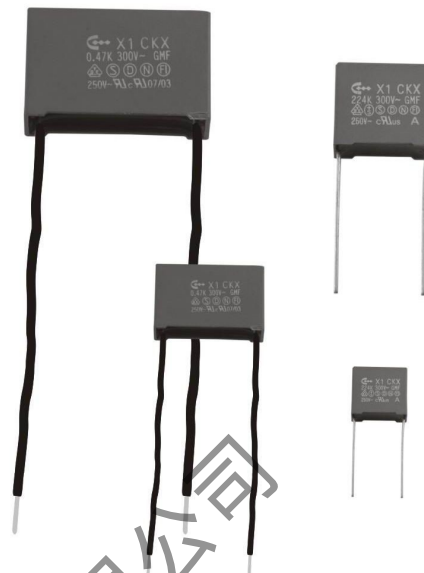
### FEATURES

- Provides interference suppression, all safety approval
- Cvervoltage stress withstanding
- Self-healing properties
- Active and passive flame retardent

### SPECIFICATIONS

Climate Category: In accordance with DIN40040 GMF  
a/G=Minimum Limit Temperature...-40℃  
b/M=Maximum Limit Temperature...+100℃  
c/F=Humidity Category...Average relative humidity  
≤75%, 95% for 30 days per year, continuously:  
85% for the remaining days, occasionally.

- Rated Voltage:..... 250 V/300 V.AC, 50~60Hz
- Capacitance Range:.....0.0047~10  $\mu$  F
- Capacitance Tolerance:
- Withstand Voltage: J( $\pm 5\%$ ), K( $\pm 10\%$ ), (M $\pm 20\%$ )  
a/Between Terminals..1200V.AC, 60HZ OR 2200 V.DC 1s.  
b/Between Terminals and Case.....2200 V.AC. 60Hz 60s.
- Dissipation Factor:  
a/ $\leq 0.1\%$  at 1 KHz and 20℃  
b/ $\leq 0.3\%$  10 KHz and 20℃
- Insulation Resistance:  
■ A/Between Terminals..... $\geq 3 \times 10^4$  M  $\Omega$  for  $c \leq 0.33 \mu$  F;  
 $\geq 1 \times 10^4$  M  $\Omega$  /  $\mu$  F for  $C > 0.33 \mu$  F;  
B/Between Terminals and Case..... $\geq 3 \times 10^4$  M  $\Omega$   
Measured at 100 $\pm$ 15V.DC, 60s 20℃

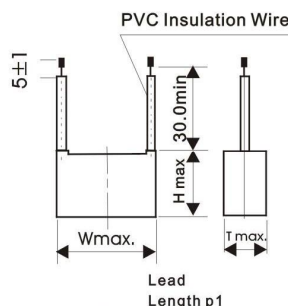
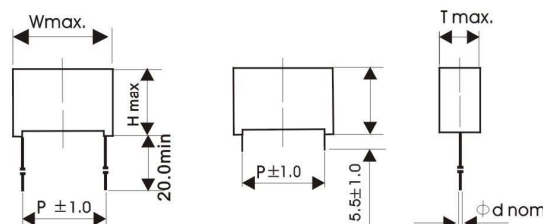


### DIAGRAM OF DIMENSIONS

(Unit:mm)

Pitch and lead dimensions(mm)

| W        | 13.0 | 18.0 | 26.5 | 31.5 | 37.0 | 51.0 |
|----------|------|------|------|------|------|------|
| P        | 10.0 | 15.0 | 22.5 | 27.5 | 32.5 | 47.5 |
| d $\phi$ | 0.6  | 0.8  | 0.8  | 0.8  | 0.8  | 0.8  |



Wire Size:  
AWG#22 for W=18.0mm.  
AWG#20 for W $\leq$ 26.5mm

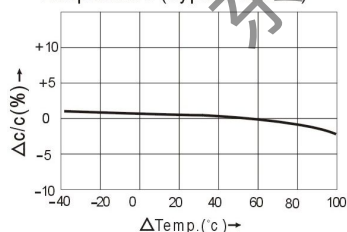


## Dimensions

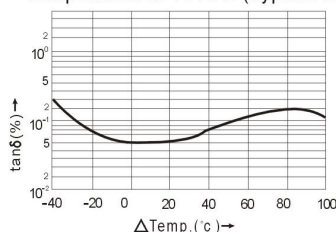
| Capacitance<br>$\mu\text{F}$ | Rated-Voltage<br>VAC | Dimensions in mm |           |        |           |     |
|------------------------------|----------------------|------------------|-----------|--------|-----------|-----|
|                              |                      | W                | H         | T      | P         | D   |
| 0.0047                       | 300                  | 13               | 11        | 5      | 10        | 0.6 |
| 0.0056                       | 300                  | 13               | 11        | 5      | 10        | 0.6 |
| 0.0068                       | 300                  | 13               | 11        | 5      | 10        | 0.6 |
| 0.0082                       | 300                  | 13               | 11        | 5      | 10        | 0.6 |
| 0.01                         | 300                  | 13/18            | 11        | 5      | 10/15     | 0.8 |
| 0.012                        | 300                  | 13/18            | 11        | 5      | 10/15     | 0.8 |
| 0.015                        | 300                  | 13/18            | 11        | 5      | 10/15     | 0.8 |
| 0.018                        | 300                  | 13/18            | 11        | 5      | 10/15     | 0.8 |
| 0.022                        | 300                  | 13/18            | 11        | 5      | 10/15     | 0.8 |
| 0.027                        | 300                  | 13/18            | 11        | 5      | 10/15     | 0.8 |
| 0.033                        | 300                  | 13/18            | 12/11     | 6/5    | 10/15     | 0.8 |
| 0.047                        | 300                  | 13/18            | 12/11     | 6/5    | 10/15     | 0.8 |
| 0.056                        | 300                  | 13/18            | 12/11     | 6/5    | 10/15     | 0.8 |
| 0.068                        | 300                  | 13/18            | 12/11     | 6/5    | 10/15     | 0.8 |
| 0.082                        | 300                  | 13/18            | 12/11     | 6/5    | 10/15     | 0.8 |
| 0.1                          | 300                  | 13/18            | 12/11     | 6/5    | 10/15     | 0.8 |
| 0.12                         | 300                  | 18               | 12        | 6.0    | 15        | 0.8 |
| 0.15                         | 300                  | 18               | 13.5      | 7.5    | 15        | 0.8 |
| 0.22                         | 300                  | 18               | 15.5      | 8.5    | 15        | 0.8 |
| 0.22                         | 300                  | 26.5             | 16.5      | 7.0    | 22.5      | 0.8 |
| 0.27                         | 300                  | 18/26.5          | 16.5      | 10/7   | 15/22.5   | 0.8 |
| 0.33                         | 300                  | 18/26.5          | 16.5      | 10/7   | 15/22.5   | 0.8 |
| 0.39                         | 300                  | 18/26.5          | 18.0      | 10/8.5 | 15/22.5   | 0.8 |
| 0.47                         | 300                  | 18/26.5          | 18.0      | 10/8.5 | 15/22.5   | 0.8 |
| 0.56                         | 300                  | 26.5             | 19.0      | 10.0   | 22.5      | 0.8 |
| 0.60                         | 300                  | 31.5/26.5        | 20.0      | 11.0   | 27.5/22.5 | 0.8 |
| 0.68                         | 300                  | 31.5/26.5        | 20.0      | 11.0   | 27.5/22.5 | 0.8 |
| 0.82                         | 300                  | 31.5/26.5        | 21.5      | 13.0   | 27.5/22.5 | 0.8 |
| 1.0                          | 300                  | 31.5/26.5        | 21.5/21.5 | 13.0   | 27.5/22.5 | 0.8 |
| 1.0                          | 300                  | 37.0             | 24.0      | 13.5   | 32.5      | 0.8 |
| 1.2                          | 300                  | 37.0/31.5        | 24.0/25.0 | 14.0   | 32.5/27.5 | 0.8 |
| 1.5                          | 300                  | 37.0/31.5        | 24.0/25.0 | 14.0   | 32.5/27.5 | 0.8 |
| 1.8                          | 300                  | 37.0             | 26.5      | 16.0   | 32.5      | 0.8 |
| 2.2                          | 300                  | 37.0             | 26.5      | 16.0   | 32.5      | 0.8 |
| 2.7                          | 300                  | 37.0             | 28.5      | 18.0   | 32.5      | 0.8 |
| 3.3                          | 300                  | 37.0             | 31.0      | 20.0   | 32.5      | 0.8 |
| 3.9                          | 300                  | 37.0             | 34.0      | 22.0   | 32.5      | 0.8 |
| 4.7                          | 300                  | 51.0             | 30.5      | 20.0   | 47.5      | 0.8 |
| 6.8                          | 300                  | 51.0             | 43.0      | 30.0   | 47.5      | 0.8 |
| 10                           | 300                  | 51.0             | 43.0      | 30.0   | 47.5      | 0.8 |

## Temperature and Frequency Characteristics

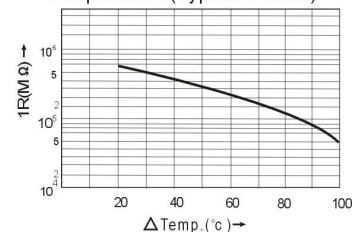
Capacitance Change vs. Temperature (Typical Values)



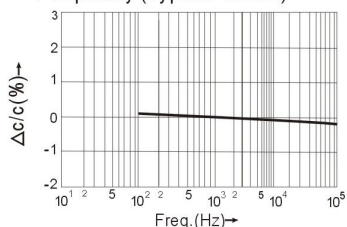
Dissipation Factor vs. Temperature at 10 KHz (Typical Values)



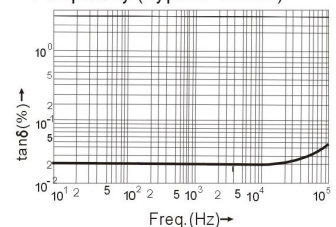
Insulation Resistance vs. Temperature (Typical Values)



Capacitance Change vs. Frequency (Typical Values)



Dissipation Factor vs. Frequency (Typical Values)



## Surge Voltage Test

According to VDE 0565-1 and IEC 384-14:  
 $U_p = 4\text{KV}$  for  $C \leq 1.0 \mu\text{F}$   
 $U_p = 4\text{KV}$  (e) for  $C > 1.0 \mu\text{F}$   
 According to SEV 1055:  
 $U_p = 3\text{KV}$

