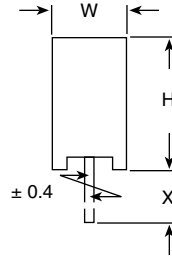
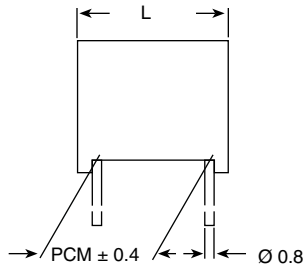
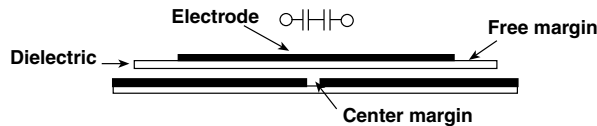


# AC-Capacitors, Suppression Capacitors Class X2 AC 440 V (MKT)

Dimensions in mm



| LEAD LENGTH<br>X (mm) | ORDERING CODE**     |
|-----------------------|---------------------|
| 4 <sup>-1</sup>       | F1772-...-4204/4264 |
| 6 <sup>-1</sup>       | F1772-...-4200/4260 |
| 15 <sup>-1</sup>      | F1772-...-4215/4265 |
| 30 <sup>+5</sup>      | F1772-...-4230/4263 |



## MAXIMUM PULSE RISE TIME: (dU/dt) in V/μs

| RATED<br>VOLTAGE | PITCH (mm) |      |      |      |
|------------------|------------|------|------|------|
|                  | 15.0       | 22.5 | 27.5 | 37.5 |
| AC 440 V         | 200        | 150  | 100  | 100  |

## RATED VOLTAGE

AC 440 V, 50 Hz/60 Hz

## PERMISSIBLE DC VOLTAGE

DC 1000 V

## TERMINALS

Radial tinned wire

## COATING

Plastic case, epoxy resin sealed, flame retardant UL 94 V-0

## CLIMATIC TESTING CLASS ACC.TO EN 60068-1

40/100/56

## CAPACITANCE RANGE

E6 series 0.01 μF X2 to 1.0 μF X2

E12 values on request

## FURTHER TECHNICAL DATA

See page 21 (Document No. 26504)

## FEATURES

- Compliant to RoHS directive 2002/95/EC

## CAPACITANCE TOLERANCE

Standard: ± 20 %

## DISSIPATION FACTOR TAN δ

&lt; 1 % measured at 1 kHz

## INSULATION RESISTANCE

FOR C ≤ 0.33 μF

30 GΩ average value

15 GΩ minimum value

## TIME CONSTANT

FOR C &gt; 0.33 μF

10 000 s average value

5000 s minimum value

## TEST VOLTAGE

(Electrode/electrode): DC 2150 V/2 s

## REFERENCE STANDARDS

EN 132 400, 1994

EN 60068-1

IEC 60384-14/2, 1993

UL 1283

UL 1414

CSA 22.2 No. 8-M 86

CSA 22.2 No. 1-M 90

## DIELECTRIC

Polyester film

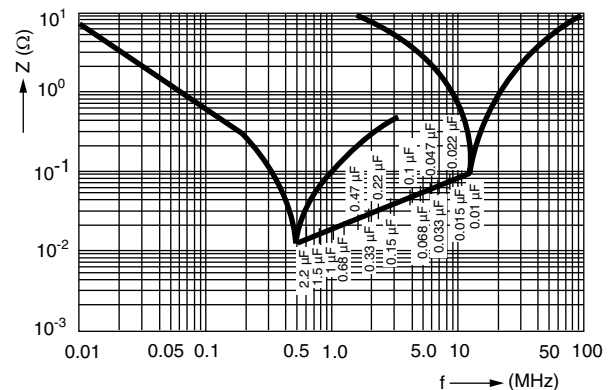
## ELECTRODES

Metal evaporated

## CONSTRUCTION

Metallized film capacitor

Internal series connection

Between interconnected terminations and case (foil method):  
AC 2500 V for 2 s at 25 °C.

Impedance (Z) as a function of frequency (f) at T<sub>a</sub> = 20 °C (average). Measurement with lead length 6 mm.

RoHS  
COMPLIANT

# Vishay Roederstein AC-Capacitors, Suppression Capacitors Class X2 AC 440 V (MKT)

## APPROVALS

| COUNTRY                                                                                                                                                            | SPECIFICATION                                       | ELECTRICAL VALUES                               | APPROVAL REFERENCE     | APPROVAL MARK                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------------------------------|------------------------|-------------------------------------------------------------------------------------|
| U.S.A.<br>(for AC 250 V)                                                                                                                                           | UL 1283<br>UL 1414                                  | 0.01 to 1.0 $\mu$ F X<br>0.01 to 1.0 $\mu$ F X  | E 76297<br>E 100682    |  |
| Canada<br>(for AC 250 V)                                                                                                                                           | C 22.2 No. 8-M 1986<br>C 22.2 No. 1-M 1994          | 0.01 to 1.0 $\mu$ F X<br>0.01 to 0.82 $\mu$ F X | LR 64546<br>LR 64546-8 |  |
| <b>CB TEST-CERTIFICATE (for AC 440 V)</b>                                                                                                                          |                                                     | 0.01 to 1.0 $\mu$ F X2                          | DE 1-8221              |                                                                                     |
| Germany                                                                                                                                                            | EN 132 400; 1999<br>IEC 60384-14, 2nd edition, 1995 | 0.01 to 1.0 $\mu$ F X2                          | 40005095               |  |
| This approval mark together with the CB-Certificate replace all national approval marks of the following countries<br>(they have already signed the CB-Agreement): |                                                     |                                                 |                        |                                                                                     |
| Austria                                                                                                                                                            | Belgium                                             | Denmark                                         | Finland                | Sweden                                                                              |
| France                                                                                                                                                             | Germany                                             | Ireland                                         | Italy                  | Switzerland                                                                         |
| Netherlands                                                                                                                                                        | Israel                                              | Portugal                                        | Spain                  | Great Britain                                                                       |
| Japan                                                                                                                                                              | Norway                                              | China                                           | Poland                 | Czech. Republic                                                                     |
| Singapore                                                                                                                                                          | Rep. of Korea                                       | Hungary                                         | Iceland                | Slovenia                                                                            |

| CAPACITANCE      | TOL.<br>(%) | PITCH<br>(mm) | BOX<br>NO. | DIMENSIONS<br>W x H x L (mm)<br>(+ 0.2/- 0.4 mm) | WEIGHT<br>LEAD LENGTH<br>6 <sup>-1</sup> mm<br>(g) | QUANTITY<br>PACKAGE<br>LEAD LENGTH<br>≤ 6 <sup>-1</sup> mm<br>(pcs) <sup>(1)</sup> | ORDERING CODE <sup>(2)</sup> |
|------------------|-------------|---------------|------------|--------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------|------------------------------|
| 0.01 $\mu$ F X2  | ± 20        | 15.0          | 05         | 5.3 x 10.3 x 17.8                                | 1.4                                                | 750                                                                                | F1772-310-42 ..              |
| 0.015 $\mu$ F X2 | ± 20        | 15.0          | 49         | 6.0 x 12.0 x 17.9                                | 2.0                                                | 600                                                                                | F1772-315-42 ..              |
| 0.022 $\mu$ F X2 | ± 20        | 15.0          | 07         | 7.3 x 13.3 x 17.8                                | 2.0                                                | 450                                                                                | F1772-322-42 ..              |
| 0.033 $\mu$ F X2 | ± 20        | 15.0          | 08         | 8.3 x 14.3 x 17.8                                | 2.7                                                | 325                                                                                | F1772-333-42 ..              |
| 0.047 $\mu$ F X2 | ± 20        | 22.5          | 09         | 6.3 x 14.3 x 26.3                                | 3.3                                                | 260                                                                                | F1772-347-42 ..              |
| 0.047 $\mu$ F X2 | ± 20        | 15.0          | 28         | 8.3 x 17.3 x 17.8                                | 3.5                                                | 300                                                                                | F1772-347-426 .              |
| 0.068 $\mu$ F X2 | ± 20        | 22.5          | 11         | 7.3 x 15.3 x 26.3                                | 4.1                                                | 235                                                                                | F1772-368-42 ..              |
| 0.068 $\mu$ F X2 | ± 20        | 15.0          | 35         | 10.3 x 17.3 x 17.8                               | 4.3                                                | 225                                                                                | F1772-368-426 .              |
| 0.1 $\mu$ F X2   | ± 20        | 22.5          | 12         | 8.3 x 16.3 x 26.3                                | 4.6                                                | 200                                                                                | F1772-410-42 ..              |
| 0.1 $\mu$ F X2   | ± 20        | 15.0          | 36         | 13.3 x 22.3 x 17.8                               | 4.2                                                | 185                                                                                | F1772-410-426 .              |
| 0.15 $\mu$ F X2  | ± 20        | 27.5          | 29         | 8.8 x 18.3 x 31.3                                | 6.8                                                | 160                                                                                | F1772-415-42 ..              |
| 0.15 $\mu$ F X2  | ± 20        | 22.5          | 13         | 10.3 x 18.3 x 26.3                               | 6.7                                                | 170                                                                                | F1772-415-426 .              |
| 0.22 $\mu$ F X2  | ± 20        | 27.5          | 14         | 11.0 x 21.0 x 31.0                               | 9.1                                                | 125                                                                                | F1772-422-42 ..              |
| 0.22 $\mu$ F X2  | ± 20        | 22.5          | 27         | 12.3 x 19.8 x 26.3                               | 8.7                                                | 125                                                                                | F1772-422-426 .              |
| 0.33 $\mu$ F X2  | ± 20        | 27.5          | 15         | 13.0 x 23.3 x 31.3                               | 12.9                                               | 110                                                                                | F1772-433-42 ..              |
| 0.33 $\mu$ F X2  | ± 20        | 22.5          | 38         | 15.3 x 26.3 x 26.3                               | 14.3                                               | 110                                                                                | F1772-433-426 .              |
| 0.47 $\mu$ F X2  | ± 20        | 37.5          | 44         | 12.0 x 22.3 x 41.3                               | 15.2                                               | 90                                                                                 | F1772-447-42 ..              |
| 0.47 $\mu$ F X2  | ± 20        | 27.5          | 17         | 16.0 x 29.3 x 31.3                               | 20.0                                               | 85                                                                                 | F1772-447-426 .              |
| 0.68 $\mu$ F X2  | ± 20        | 37.5          | 19         | 15.5 x 28.3 x 41.3                               | 24.0                                               | 70                                                                                 | F1772-468-42 ..              |
| 0.68 $\mu$ F X2  | ± 20        | 27.5          | 40         | 17.8 x 32.8 x 31.3                               | 24.4                                               | 80                                                                                 | F1772-468-426 .              |
| 1.0 $\mu$ F X2   | ± 20        | 37.5          | 20         | 17.8 x 32.3 x 41.3                               | 31.6                                               | 60                                                                                 | F1772-510-42 ..              |
| 1.0 $\mu$ F X2   | ± 20        | 27.5          | 41         | 19.5 x 34.8 x 31.3                               | 29.5                                               | 70                                                                                 | F1772-510-426 .              |

### Notes

- Inbuilt discharging resistor on request (with larger case dimensions).
- (1) Further information about packaging quantities with different lead length and/or taped versions.  
See page 16 (Document No. 27608 Packaging Quantities). Use Box No. as reference
- (2) These capacitors can be delivered on continuous tape and reel - see page 14/15 (Document Number 27622).  
The ordering code is: F1772-...-4290 at H = 16.5 mm  
F1772-...-4291 at H = 18.5 mm  
F1772-...-4960 at H = 16.5 mm  
F1772-...-4961 at H = 18.5 mm

**APPLICATION NOTES**

- For X2 electromagnetic interference suppression in **across the line applications** (50 Hz/60 Hz) with a maximum mains voltage of 440 V<sub>AC</sub>.
- These capacitors are not intended for continuous pulse applications. For these situations, capacitors of the AC and pulse programs must be used.
- These capacitors can be used for series impedance application in case safety approvals are requested.
- The maximum ambient temperature must not exceed 100 °C.
- Rated voltage pulse slope:  
If the pulse voltage is lower than the rated voltage, the values of the specific reference data can be multiplied by 620 V<sub>DC</sub> and divided by the applied voltage.



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