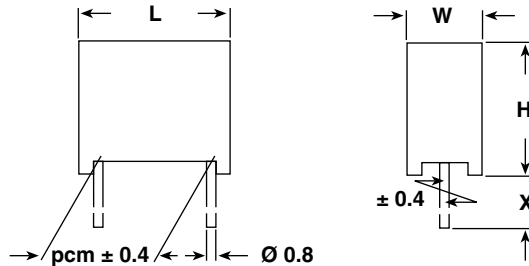
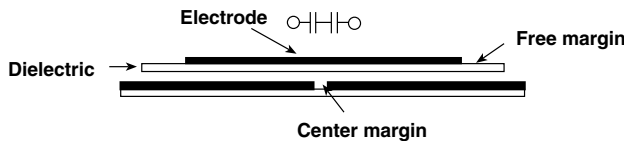


## AC-Capacitors, Suppression Capacitors Class X2 AC 440 V (MKT)

Dimensions in mm



LEAD LENGTH X (mm)	ORDERING CODE***
4 <sup>-1</sup>	F1772-...-4004
6 <sup>-1</sup>	F1772-...-4000
15 <sup>-1</sup>	F1772-...-4015
30 <sup>+5</sup>	F1772-...-4030



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

RATED 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

 E12 series 0.01 μF X2 - 1.0 μF X2  
preferred values acc. to E6

### FURTHER TECHNICAL DATA

See page 21 (Document No. 26504)

### FEATURES

- Compliant to RoHS directive 2002/95/EC

### CAPACITANCE TOLERANCE

Standard: ± 10 %

### 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 > 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

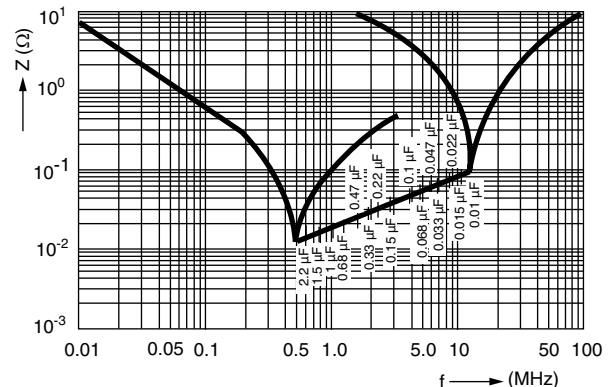
### CONSTRUCTION

Metallized film capacitor

Internal series connection



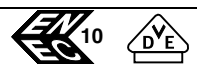
Between interconnected terminations and case (foil method):

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**

### APPROVALS

COUNTRY	SPECIFICATION	ELECTRICAL VALUES	APPROVAL REFERENCE	APPROVAL MARK
U.S.A. (for AC 250 V)	UL 1283 UL 1414	0.01 $\mu$ F X - 1.0 $\mu$ F X 0.01 $\mu$ F X - 1.0 $\mu$ F X	E 76297 E 100682	
Canada (for AC 250 V)	C 22.2 No. 8-M 1986 C 22.2 No. 1-M 1994	0.01 $\mu$ F X - 1.0 $\mu$ F X 0.01 $\mu$ F X - 0.82 $\mu$ F X	LR 64546 LR 64546-8	
<b>CB TEST-CERTIFICATE (for AC 440 V)</b>		0.01 $\mu$ F X2 - 1.0 $\mu$ F X2	DE 1-8221	
Germany	EN 132 400; 1999 IEC 60384-14, 2nd edition, 1995	0.01 $\mu$ F X2 - 1.0 $\mu$ F X2	40005095	
This approval mark together with the CB-Certificate replace all national approval marks of the following countries (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. (%)	PITCH (mm)	BOX NO.	DIMENSIONS W x H x L (+ 0.2/- 0.4 mm)	WEIGHT LEAD LENGTH 6 <sup>-1</sup> mm (g)	QUANTITY PACKAGE LEAD LENGTH 6 <sup>-1</sup> mm (pcs) <sup>(2)</sup>	ORDERING CODE <sup>(3)</sup>
0.01 $\mu$ F X2	$\pm 10$	15.0	06	6.3 x 12.3 x 17.8	2.0	500	F1772-310-4 ...
0.012 $\mu$ F X2	$\pm 10$	15.0	06	6.3 x 12.3 x 17.8	2.0	500	F1772-312-4 ...
0.015 $\mu$ F X2	$\pm 10$	15.0	07	7.3 x 13.3 x 17.8	2.4	450	F1772-315-4 ...
0.018 $\mu$ F X2	$\pm 10$	15.0	07	7.3 x 13.3 x 17.8	2.4	450	F1772-318-4 ...
0.022 $\mu$ F X2	$\pm 10$	15.0	08	8.3 x 14.3 x 17.8	2.7	325	F1772-322-4 ...
0.027 $\mu$ F X2	$\pm 10$	15.0	08	8.3 x 14.3 x 17.8	2.7	325	F1772-327-4 ...
0.033 $\mu$ F X2	$\pm 10$	15.0	28	8.3 x 17.3 x 17.8	2.7	300	F1772-333-4 ...
0.039 $\mu$ F X2	$\pm 10$	22.5 <sup>(1)</sup>	09	6.3 x 14.3 x 26.3	3.3	260	F1772-339-4 ...
0.047 $\mu$ F X2	$\pm 10$	22.5 <sup>(1)</sup>	11	7.3 x 15.3 x 26.3	4.1	235	F1772-347-4 ...
0.056 $\mu$ F X2	$\pm 10$	22.5 <sup>(1)</sup>	12	8.3 x 16.3 x 26.3	4.6	200	F1772-356-4 ...
0.068 $\mu$ F X2	$\pm 10$	22.5 <sup>(1)</sup>	12	8.3 x 16.3 x 26.3	4.6	200	F1772-368-4 ...
0.082 $\mu$ F X2	$\pm 10$	22.5 <sup>(1)</sup>	12	8.3 x 16.3 x 26.3	4.6	200	F1772-382-4 ...
0.1 $\mu$ F X2	$\pm 10$	22.5 <sup>(1)</sup>	13	10.3 x 18.3 x 26.3	6.7	170	F1772-410-4 ...
0.12 $\mu$ F X2	$\pm 10$	22.5 <sup>(1)</sup>	13	10.3 x 18.3 x 26.3	6.7	170	F1772-412-4 ...
0.15 $\mu$ F X2	$\pm 10$	27.5 <sup>(1)</sup>	14	11.0 x 21.0 x 31.0	9.1	125	F1772-415-4 ...
0.18 $\mu$ F X2	$\pm 10$	27.5 <sup>(1)</sup>	14	11.0 x 21.0 x 31.0	9.1	125	F1772-418-4 ...
0.22 $\mu$ F X2	$\pm 10$	27.5 <sup>(1)</sup>	15	13.0 x 23.3 x 31.3	12.9	110	F1772-422-4 ...
0.27 $\mu$ F X2	$\pm 10$	27.5 <sup>(1)</sup>	15	13.0 x 23.3 x 31.3	12.9	110	F1772-427-4 ...
0.33 $\mu$ F X2	$\pm 10$	27.5 <sup>(1)</sup>	18	14.5 x 24.3 x 31.3	15.0	100	F1772-433-4 ...
0.39 $\mu$ F X2	$\pm 10$	37.5 <sup>(1)</sup>	14	12.0 x 22.3 x 41.3	15.2	90	F1772-439-4 ...
0.47 $\mu$ F X2	$\pm 10$	37.5 <sup>(1)</sup>	16	14.0 x 24.3 x 41.3	18.9	80	F1772-447-4 ...
0.56 $\mu$ F X2	$\pm 10$	37.5 <sup>(1)</sup>	19	15.5 x 28.3 x 41.3	24.0	70	F1772-456-4 ...
0.68 $\mu$ F X2	$\pm 10$	37.5 <sup>(1)</sup>	19	15.5 x 28.3 x 41.3	24.0	70	F1772-468-4 ...
0.82 $\mu$ F X2	$\pm 10$	37.5 <sup>(1)</sup>	20	17.9 x 32.4 x 41.3	31.6	60	F1772-482-4 ...
1.0 $\mu$ F X2	$\pm 10$	37.5 <sup>(1)</sup>	42	19.8 x 39.9 x 42.3	44.2	55	F1772-510-4 ...

Preferred values in bold print.

#### Notes

- Inbuilt discharging resistor on request (with larger case dimensions).
- (1) Different pitch on request.
- (2) 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
- (3) These capacitors can be delivered on continuous tape and reel - see page 14/15 (Document Number 27622).  
The ordering code is F1772-...-4900 at H = 16.5 mm, F1772-...-4901 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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