

CAPACITORS FOR INTERFERENCE SUPPRESSION

X1/Y2, X2 MLCCs and X2 Film Capacitors

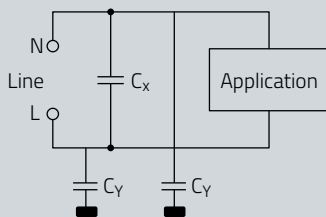


All series are used as filters in power supplies to suppress interferences. Additional the series WCAP-FTXH are used for applications with harsh environments - humidity and temperature.

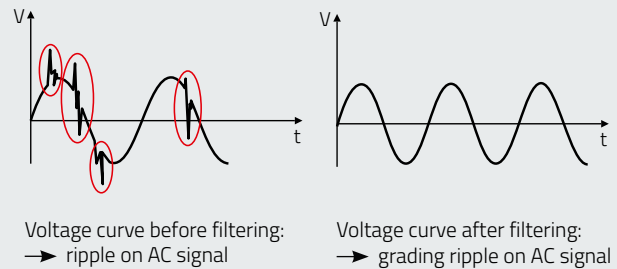
	MLCCs – Ceramic Capacitors	Film Capacitors	
Available series:	WCAP-CSSA	WCAP-FTX2 WCAP-FTXX	WCAP-FTXH
Safety class:	X1/Y2, X2	X2	X2 THB
Type:	SMT 1808, 1812, 2211, 2220	THT boxed	THT boxed
Rated Voltage:	250 V _{AC}	275 V _{AC} , 310 V _{AC}	310 V _{AC}
Special robustness (Temperature & Humidity):	–	–	1.000 hours at 85 °C / 85 % RH with rated voltage applied
Dielectric:	NPO, X7R	Polypropylene (PP)	Polypropylene (PP)
Capacitance Range:	33 pF – 4.7 nF	5.6 nF – 6.8 µF	33 nF – 10 µF
Approvals:	TUV (EN 60384-14), file numbers: R 50268363 & R 50376984 cULus, file numbers: E331896 & E345659	ENEC 10 by VDE, file number: 40038405 ENEC 15 by UL, file number: ENEC-02986 cULus, file number: E345659 CQC, file number: 13001104050 & 13001104051	ENEC 10 by VDE, file number: 40053418 cULus, file number: E345659

Application of X and Y Capacitors:

To filter possible spikes X capacitors (Cx) are used in parallel to the voltage source between the power lines whereas Y capacitors (Cy) are set between power line and ground.



Function of X and Y Capacitors:



Classification according to IEC 60384-14: 2013

Safety Class	Peak impulse voltage in use	Application	Peak impulse voltage applied before endurance test
X1	> 2.5 kV ≤ 4 kV	High pulse application	4 kV (C ≤ 1 µF), $U_p = \frac{4 \text{ kV}}{\sqrt{\frac{C_N(C > 1 \mu\text{F})}{10^{-6} \text{ F}}}}$
X2	≤ 2.5 kV	General Purpose	2.5 kV (C ≤ 1 µF), $U_p = \frac{2.5 \text{ kV}}{\sqrt{\frac{C_N(C > 1 \mu\text{F})}{10^{-6} \text{ F}}}}$

Safety Class	Type of bridged insulation	Range of rated voltages	Peak impulse voltage applied before endurance test
Y1	Double or reinforced	≤ 500 V	8 kV
Y2	Basic or supplemental	≥ 150 V ≤ 500 V	5 kV (C ≤ 1 µF), $U_p = \frac{5 \text{ kV}}{\sqrt{\frac{C_N(C > 1 \mu\text{F})}{10^{-6} \text{ F}}}}$