

EMI/ RFI Interference suppression

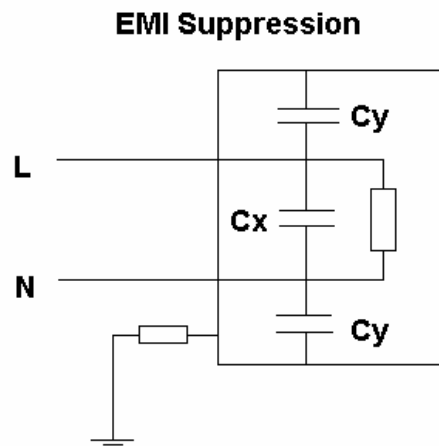
EMI/ RFI Interference suppression capacitors are used to filter out any noise or high voltage spikes that can cause damage to a circuit device.

There are two classes of interference suppression capacitors, Class X and Y.

Class X capacitors are connected from line to line while Y capacitors are connected from line to ground. Another significant difference between these two classes is if an X capacitor fails it does not expose anyone to electrical shock as apposed to a Y capacitor, which upon failure would expose anyone to electrical shock. Of the two types of interference capacitors the Class X is more common with the Class X2 being the most common.

Class X capacitors are subdivided into 3 types, class X1, X2 and X3. The difference is in the peak voltage rating for the capacitors.

Class Y capacitors are divided into 4 types, Y1, Y2, Y3 and Y4. Like X capacitors the different classes have different peak voltage ratings.



Class X capacitors are divided into the following subgroups:

Subgroup	Peak service voltage	Peak test voltage
X1	>2500V	4kV, $C \leq 1.0\mu\text{F}$
	$\leq 4000\text{V}$	$4/\sqrt{(CkV)}$, $C > 1.0\mu\text{F}$
X2	$\leq 2500\text{V}$	2.5kV, $C \leq 1.0\mu\text{F}$
		$2.5/\sqrt{(CkV)}$, $C > 1.0\mu\text{F}$
X3	$\leq 1200\text{V}$	None

Class Y capacitors are divided into the following subgroups:

Sub class	Rated Voltage	Peak test Voltage
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Y1	$\leq 500V$	8kV
Y2	$150 \leq V < 300$	5kV
Y3	$\leq 250V$	None
Y4	$\leq 150V$	2.5kV