



EMI SAFETY CAPACITOR SOLUTIONS

FILM AND CERAMIC

CLASS X

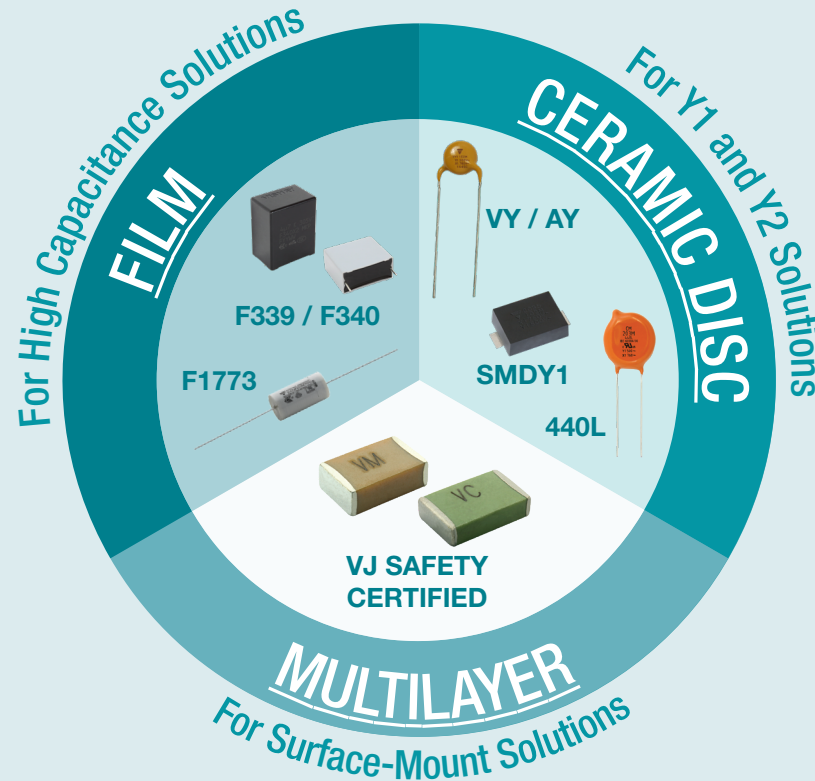
Differential Mode Filtering
Across the Line

Sub class	Peak Impulse Voltage	Typical Application
X1	4.0 kV	High Pulse
X2	2.5 kV	General Purpose

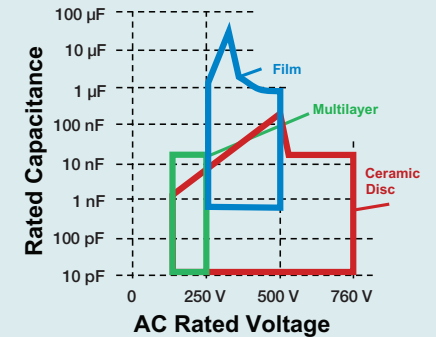
CLASS Y

Common Mode Filtering
Line to Ground

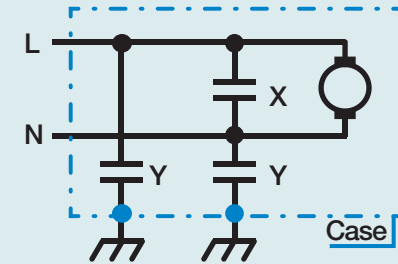
Sub class	Peak Impulse Voltage	Typical Application
Y1	8.0 kV	High Pulse
Y2	5.0 kV	General Purpose



Safety Capacitor Map



Typical Circuit



Technology	Rating	Series	Capacitance	Certificates	Special Features
Ceramic Disc	X1 / Y1	SMDY1	470 pF to 4700 pF	IEC, UL, CSA, and CQC	Industry-first 500 V _{AC} SMD type Y1 safety capacitor available
	X1 / Y1	VY1 , VY1C , AY1 , WKP , 440L	10 pF to 20 nF	IEC, UL, CSA, and CQC	Industry-first 20 nF, 85 °C / 85 % RH 1000 h available. AEC-Q200 available
	X1 / Y2	VY2 , AY2 , WYO	10 pF to 12 nF	IEC, UL, CSA, and CQC	AEC-Q200 available
MLCC	X1 / Y2	VJ Safety Certified Capacitors	10 pF to 1000 pF	IEC, cCSA	1 nF in X1 / Y2 with COG (NP0) Meets IEC 60384-14 min. 4 mm creepage, AEC-Q200 available
	X2		10 pF to 470 pF	IEC, cCSA	Meets IEC 60384-14 min. 4 mm creepage, AEC-Q200 available
	X1 / Y2		100 pF to 4700 pF	IEC, cCSA	Meets IEC 60384-14 min. 4 mm creepage, AEC-Q200 available
	X2		100 pF to 12 nF	IEC, cCSA	Meets IEC 60384-14 min. 4 mm creepage, AEC-Q200 available
Film	X1	F340X1 , F339X1 , and MKP3381	0.001 μF to 2.2 μF	IEC, UL, CSA, and CQC	THB Class IIIB available
	X2	F340X2 , F339X2 , and F1773	0.001 μF to 40 μF	IEC, UL, CSA, and CQC	THB Class IIB, IIIB, and AEC-Q200 available
	Y2	F340Y2 , MKP3386Y2	0.001 μF to 0.47 μF	IEC, UL, and CSA	THB Class IIIB and AEC-Q available

For a full overview of RFI capacitors, please visit www.vishay.com/doc?48140