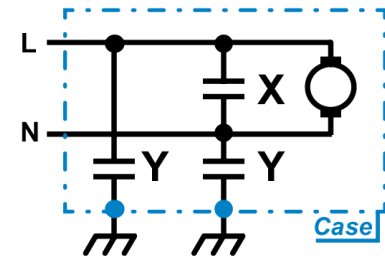


# MLCC - VJ Safety, SMD EMI Suppression

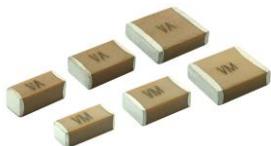


## Market Segments

- Industrial
- Automotive
- Telecommunications
- Medical

## Applications

- EMI and AC Line Filtering
- EV, Battery Charging and Storage Systems
- Power Supplies
- Lightning strike & Voltage surge protection



## Features

- Approved IEC 60384-14
- AEC-Q200 qualified
- 2008 and 2220 body sizes
- Voltage rating AC (DC):
  - X1/Y2: 250 Vac; (2,000 Vdc)
  - X2: 250 Vac; (1,500 Vdc)
  - Up to 10 nF



## Key Advantages

- SMD, Smaller size vs. leaded capacitors
- Ultra Stable NPO, & stable X7R Dielectric High dV/dt in the nV/s ranges
- Design kits available
- Harsh Environment capability
  - 1000 h; 85 C/85%RH)

# Vitramon VJ Safety Certified MLCC Capacitors



## EMI SAFETY CAPACITOR SOLUTIONS FILM AND CERAMIC

### CLASS X

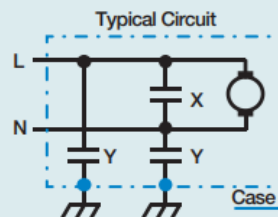
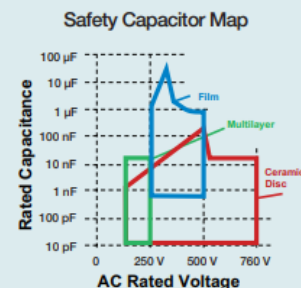
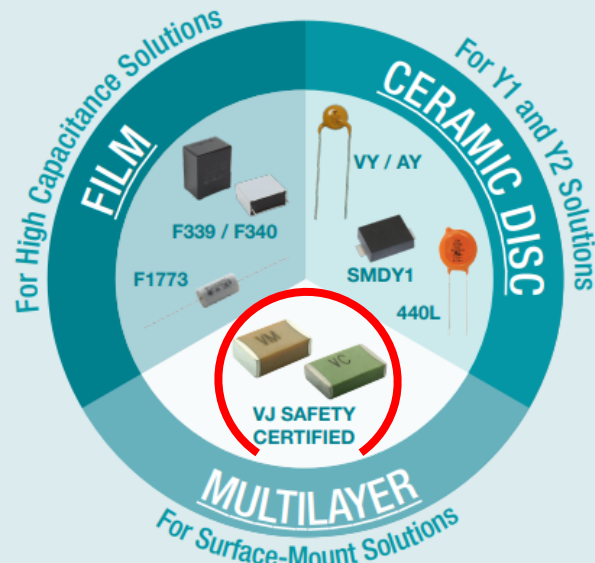
Differential Mode Filtering  
Across the Line

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



Technology	Rating	Series	Capacitance	Certificates	Special Features
Ceramic Disc	X1 / Y1	<a href="#">SMDY1</a>	470 pF to 4700 pF	IEC, UL, CSA, and CQC	Industry-first 500 V <sub>ac</sub> SMD type Y1 safety capacitor available
	X1 / Y1	<a href="#">VY1, VY1C, AY1, WKP, 440L</a>	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	<a href="#">VY2, AY2, WYQ</a>	10 pF to 12 nF	IEC, UL, CSA, and CQC	AEC-Q200 available
MLCC	X1 / Y2	<a href="#">VJ Safety Certified Capacitors</a>	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		IEC, cCSA	Meets IEC 60384-14 min. 4 mm creepage, AEC-Q200 available	
	X1 / Y2		IEC, cCSA	Meets IEC 60384-14 min. 4 mm creepage, AEC-Q200 available	
	X2		IEC, cCSA	Meets IEC 60384-14 min. 4 mm creepage, AEC-Q200 available	
Film	X1	<a href="#">F340X1, F339X1, and MKP3381</a>	0.001 µF to 2.2 µF	IEC, UL, CSA, and CQC	THB Class IIIB available
	X2	<a href="#">F340X2, F339X2, and F1773</a>	0.001 µF to 40 µF	IEC, UL, CSA, and CQC	THB Class IIB, IIIB, and AEC-Q200 available
	Y2	<a href="#">F340Y2, MKP3386Y2</a>	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/doc748140](http://www.vishay.com/doc748140)

© 2021 VISHAY INTERTECHNOLOGY, INC. ALL RIGHTS RESERVED.

MS7286-2107

[www.vishay.com](http://www.vishay.com)

Full range of safety caps

Class X and Y

- 1nF NP0/COG
- 12nF X7R

Surface Mount

- Pick & Place Assembly

**Auto grade available**

**Applications:**

- Power supply boards
- AC line filtering
- Switching power supplies
- Battery charger
- AC adaptor
- Power and energy storage, distribution, control

***If it plugs into the wall...***