



# Eaton MLVs: providing overvoltage protection in a wide range of applications

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## Product description

Eaton's surface-mount multilayer varistors (MLV) provide reliable protection in electronic circuits against electrostatic discharge (ESD), electrically fast transients (EFTs), and transients resulting from inductive load switching. They are ideal for protecting I/O interfaces as well as components and circuits sensitive to overvoltage and surge transients occurring on power supplies, control, and signal lines. Eaton MLVs come in a broad range of working voltages. Different sizes are available, including the most common industry footprints. With the standard high-energy MLVCs (along with MLVA & MLVB) and AMLVs, Eaton offers a full line of MLVs.

In addition to Eaton's overvoltage portfolio, TVS Diodes, and PolySurg™, Eaton MLVs protect against a broad range of overvoltage threats. The AMLV series automotive-grade MLV products are transient voltage surge suppression devices designed to suppress a variety of transient events. These products come in a variety of voltage ranges to provide high-reliability protection in diverse electronic applications on the power supply, control, and signal lines.

## Features and benefits

### MLVA (compact)

- Low working voltage range; down to 5.5 Vdc
- 0201 to 0603 footprints

### MLVB (low capacitance)

- Low capacitance ESD protection; down to 0.5 pF
- 0402 to 0603 footprints

### MLVC (standard)

- Expanded working voltage range; up to 68 Vdc
- 0402 to 1206 footprints

### MLVC (high-energy)

- High energy and working voltage protection; up to 200 Vdc/150 Vrms
- 0805 to 4032 footprints

### AMLV (Automotive-grade)

- Broad product offering with wide voltage up to 56 Vdc
- 0402 to 2220 footprints

# Multilayer varistors (MLV) selection guide

## MLVA - Compact

Package size	Working voltage (Vdc)	Clamping voltage (V)	Max peak current (8/20 $\mu$ s)	Capacitance (pF) range
0201	5.5	26 to 30	-	33 to 64
0402	5.5 to 18	28 to 54	20	85 to 270
0603	5.5 to 26	31 to 70	30	100 to 270

## MLVB - Low capacitance

Package size	Working voltage (Vdc)	Clamping voltage (V)	Max peak current (8/20 $\mu$ s)	Capacitance (pF) range
0402	9 to 18	35 to 250	-	0.5 to 5
0603	9 to 18	35 to 250	-	0.5 to 5

## MLVC - Standard

Package size	Working voltage (Vdc)	Clamping voltage (V)	Max peak current (8/20 $\mu$ s)	Capacitance (pF) range
0402	12 to 18	34 to 44	20	90 to 150
0603	12 to 33	34 to 79	35	80 to 210
0805	12 to 48	34 to 110	35	80 to 220
1206	12 to 68	34 to 151	35	90 to 450

## MLVC - High-energy

Package size	Working voltage (Vdc)	Clamping voltage (V)	Max peak current (8/20 $\mu$ s)	Capacitance (pF) range
0805	12 to 33	34 to 79	120	230 to 420
1206	12 to 60	34 to 134	150	180 to 850
1210	11 to 65	33 to 144	300	400 to 1800
1812	11 to 60	33 to 134	500	650 to 2400
2220	18 to 68	44 to 151	600	700 to 4000
3225	18 to 200	44 to 425	400	250 to 3500
4032	14 to 200	35 to 422	1200	700 to 5000

## AMLV - Automotive-grade

Package size	Working voltage (Vdc)	Clamping voltage (V)	Max peak current (8/20 $\mu$ s)	Capacitance (pF) range
0402	5.5 to 18	30 to 50	20	12 to 40
0603	9 to 32	29 to 120	30	10 to 490
0805	16 to 31	40 to 67	120	250 to 650
1206	18 to 56	42 to 110	200	250 to 1000
1210	18 to 45	42 to 90	500	600 to 3100
1812	16 to 30	40 to 77	800	1700 to 4500
2220	16 to 38	42 to 77	1200	3000 to 20000

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