ESD suppressor selection guide

ESD Suppressor Selection Guide

Part Number	Image Ref.	Rated Volts Vdc	Clamping Typ Voltage(V) Typical	Capacitance (pF) Typical	Trigger Voltage(V) Typical	Leakage Current	Size (mm) LxWxH	Packaging (pcs/reel)
Voltage variable material (VVM) Ultra-Low Capacitance ESD Suppressors								
0402ESDA-MLP1	1	30	35	0.05pF@1MHz	300	<0.1nA	1.1x0.53x0.36	10000
PS04LTVA1	1	5	25	0.05pF@1MHz	150	<0.1nA	1.1x0.53x0.36	10000
0603ESDA-MLP7	2	30	35	0.05pF@1MHz	300	<0.1nA	1.6x0.8x0.5	5000
0603ESDA2-TR2	3	30	35	0.15pF@1MHz	350	<0.1nA	1.6x0.8x0.5	5000
41206ESDA-TR1	4	12	35	0.15pF@1kHz~1.8GHz	150	<0.1nA	3.2x1.6x0.8	5000
42510ESDA-TR1	5	12	30	0.1pF@1MHz	300	<0.01µA	2.5x1.0x0.5	5000
MLVA Family standard capacitance multi-layer varistors								
MLVA02V05C033	6	5.5	30	33pF@1MHz	***	<10µA	0.6x0.3x0.3	15000
MLVA02V05C047	6	5.5	26	47pF@1MHz	***	<10µA	0.6x0.3x0.3	15000
MLVA02V05C064	6	5.5	26	64 pF@1MHz	***	<10µA	0.6x0.3x0.3	15000
MLVA04V05C270	7	5.5	20	270pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVA04V09C130	7	9	32	130pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVA04V14C090	7	14	38	90pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVA04V18C085	7	18	45	85pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVA06V05C270	8	5.5	22	270pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVA06V09C210	8	9	27	210pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVA06V14C150	8	14	35	150pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVA06V18C130	8	18	40	130pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVA06V26C100	8	26	58	100pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVB Family low capacitance multi-layer varistors								
MLVB04V18C0R5	9	18	250	0.5pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVB04V18C001	9	18	110	1pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVB04V18C003	9	18	58	3pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVB04V09C005	9	9	35	5pF@1MHz	***	<10µA	1.0x0.5x0.5	10000
MLVB06V18C0R5	10	18	250	0.5pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVB06V18C001	10	18	110	1pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVB06V18C003	10	18	58	3pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
MLVB06V09C005	10	9	35	5pF@1MHz	***	<10µA	1.6x0.8x0.8	4000
TVSA Family discrete transient voltage suppressors								
TVSA02V05C004	11	5	17	4pF@1MHz	***	<10nA	0.6x0.3x0.3	15000
TVSA04V05C006	12	5	17	6pF@1MHz	***	<10nA	1.0x0.5x0.5	10000

Image References

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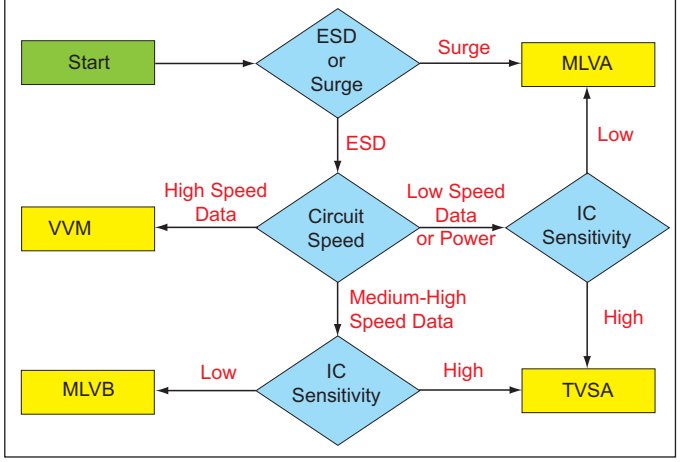
Applications	Technology	Feature / Benefit
High Speed Data Circuits	**Voltage variable material**  Discrete  Array	• Ultra-low capacitance (0.05 pF typical) maintains signal integrity • 1 ns Reaction time protects ICs from ESD damage • Withstands 1000 ESD strikes for long lasting protection • Small 0402, 0603, 1206 and 2510 arrays meet the demands of many applications
Cost Sensitive Applications	MLVA & MLVB  Discrete	• Small 0201, 0402, and 0603 SMD footprints save PCB space • Low capacitance (0.5-5 pF) delivers superior protection for USB 2.0 • Low leakage currents (<10 μA) permit maintaining circuit functionality • Fast response time (<1 ns) meets the needs of IEC 61000-4-2
Highly Sensitive ICs	TVS Diodes  Discrete	• Solid-state silicon-avalanche technology protects against high voltage surges • Bi-directional functionality protects against positive and negative voltage spikes • Small 0201 and 0402 SMD footprints save PCB space • Low leakage currents and clamping voltages reduce power consumption and increase efficiency

Overvoltage Protection Selection Guide



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