

ESDXXV23TS-LC Series

ROHS

Transient Voltage Suppressors for ESD Protection

Description

The ESDXXV23TS-LC series is low capacitance TVS arrays designed to protect high speed data interfaces. This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101, It is suitable for use in automotive applications. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Feature

- ◆ Moisture Sensitivity Level (MSL -1)
- ◆ AEC-Q101 qualified
- ◆ 180 and 300 Watts Peak Pulse Power per Line (tp=8/20µs)
- ◆ Protects two I/O lines
- ◆ Low clamping voltage
- ◆ Working Voltages: 3.3V~ 24V
- ◆ Low leakage current
- ◆ IEC61000-4-4 (EFT): 40A (5/50ns)
- ◆ IEC61000-4-2 (ESD) ±25kV (air), ±20kV (contact):3.3V~8V
- ◆ IEC61000-4-2 (ESD) ±15kV (air), ±8kV (contact):12V~24V

Applications

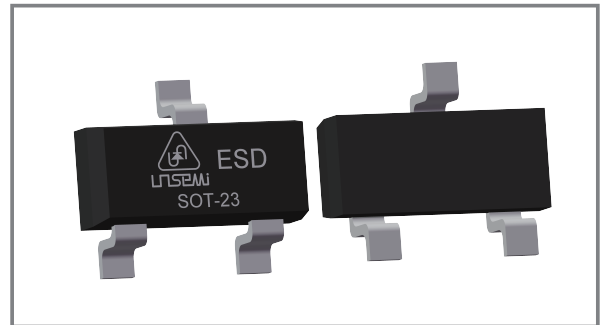
- ◆ High-Speed data lines
- ◆ Cellular handsets AND accessories
- ◆ Universal Serial Bus (USB) port protection
- ◆ Portable instrumentation
- ◆ LAN / WAN equipment
- ◆ Peripherals

Mechanical Characteristics

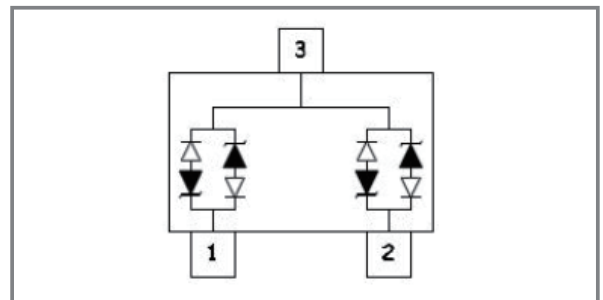
Parameter	Symbol	Value	Units
Peak Pulse Power (Tp=8/20µs waveform)	PPP	180 and 300	Watts
Lead Soldering Temperature	TL	260 (10 sec.)	°C
Storage Temperature Range	TSTG	-55 to +150	°C
Operating Junction Temperature Range	TJ	-55 to +150	°C



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Functional Diagram



Mechanical Data

- ◆ JEDEC SOT-23 Package
- ◆ Molding Compound Flammability Rating : UL 94V-O
- ◆ Weight 8.0 Milligrams (Approximate)
- ◆ Lead Finish : Lead Free

Electrical Characteristics @ 25°C Unless Otherwise Specified)

Part Number	Device Marking	V _{RWM} (V) (Max.)	V _{BR} (V) (Min.)	I _T (mA)	V _c @1A (Max.)	V _c		I _R (uA) (Max.)	C (pF) (Typ.)
						(Max.)	(@A)		
ESD03V23TS-LC	BW3	3.3	4.0	1.0	7.0	23	13	0.5	1.5
ESD05V23TS-LC	BW5	5.0	6.0	1.0	9.8	25	12	1	1.5
ESD08V23TS-LC	BW8	8.0	8.5	1.0	13.4	30	10	1	1.5
ESD12V23TS-LC	BWA	12.0	13.3	1.0	19.0	36	5	1	1.5
ESD15V23TS-LC	BWC	15.0	16.7	1.0	24.0	40	4.5	1	1.5
ESD18V23TS-LC	BWD	18.0	20.0	1.0	27.0	45	4	1	1.5
ESD24V23TS-LC	BWF	24.0	26.7	1.0	43.0	60	3	1	1.5

Characteristic Curves

Fig1. 8/20μs Pulse Waveform

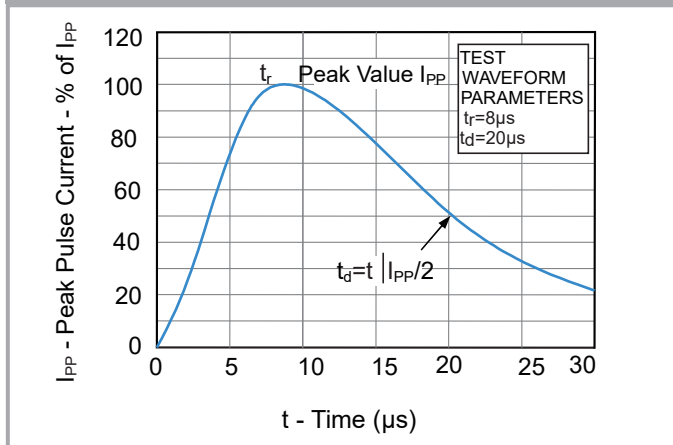


Fig2. Power Rating Derating Curve

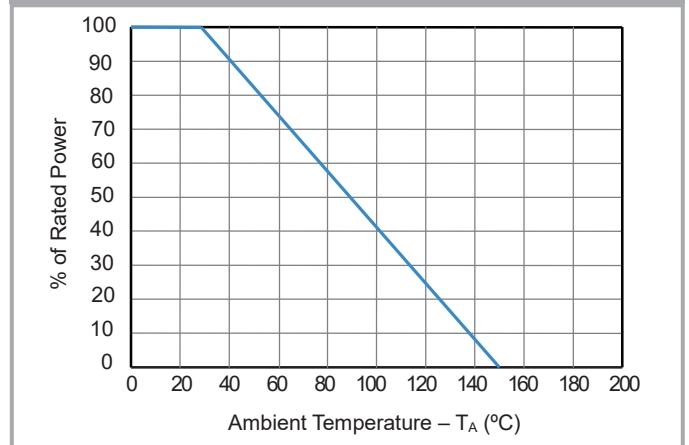
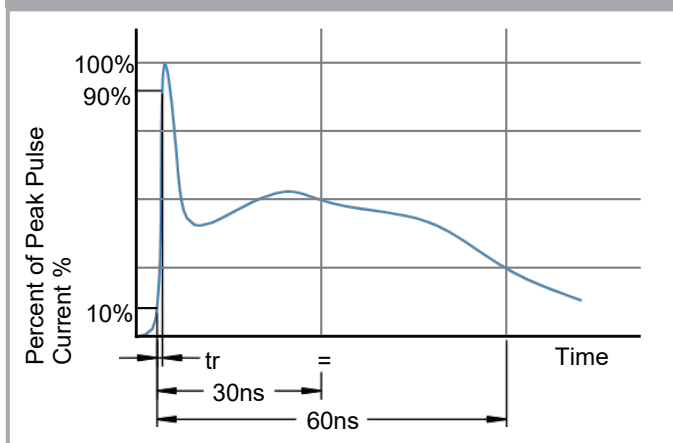
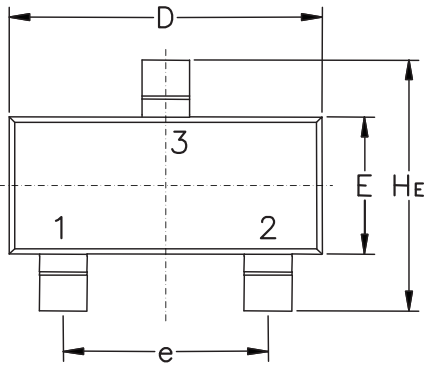


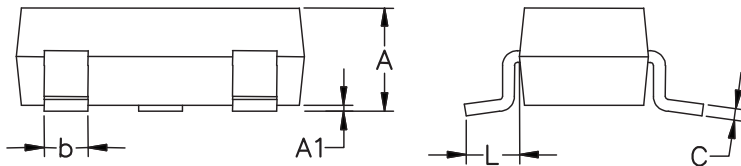
Fig3. ESD Pulse Waveform (according to IEC61000-4-2)



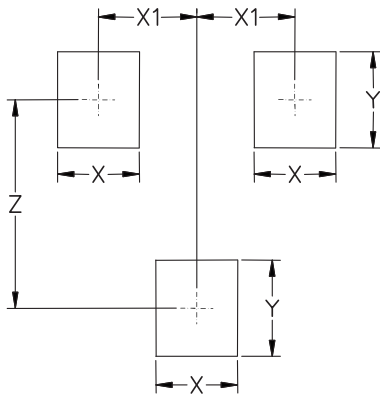
SOT-23 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
A	0.10	1.00	1.10	0.004	0.040	0.043
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.30	0.44	0.50	0.012	0.017	0.020
C	0.09	0.13	0.15	0.003	0.005	0.006
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.00	1.10	1.10	0.039	0.043	0.043
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.027
HE	2.50	2.10	2.10	0.098	0.083	0.083



Soldering Footprint



Symbol	Millimeters	Inches
X	0.80	0.031
X1	0.91	0.037
Y	0.90	0.035
Z	2.00	0.079

Ordering Information

Device	Package	Quantity	Reel Size
ESDXXV23TS-LC Series	SOT-23	3,000pcs/Reel	7 inch

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