TS1231LDX

1-Line, Uni-directional, TVS Protection

Features

- IEC61000-4-2 (ESD) +/-30kV (air), +/-30KV(contact)
  IEC61000-4-4 (EFT) 80A (5/50 ns)
- Peak Pulse Current(tp=8/20us) 25A
- Protects one I/O line
- Working voltages : 12.0V
- Low leakage current

Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports.
- Peripherals

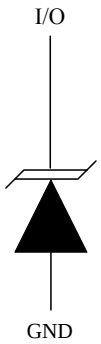
Mechanical Characteristics

- DFN1610-2L package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranted:260℃/10s
- Reel size: 7 inch
- ROHS compliant
- MSL-1

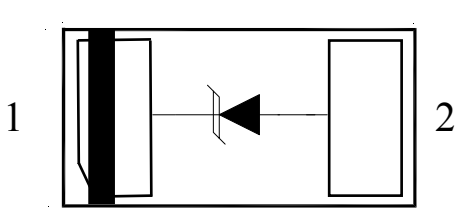
Description

The TS1231LDX is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines , communication systems , medical equipment and other applications. These devices are ideal for situations where board space is at a premium. This series has been specifically designed to protect sensitive components which are connected to power data and transmission lines from overvoltage caused by ESD(electrostatic discharge), CDE (Cable Discharge Events) , and EFT (electrical fast transients).

Circuit Diagram



Pin Configuration



DFN1610-2L

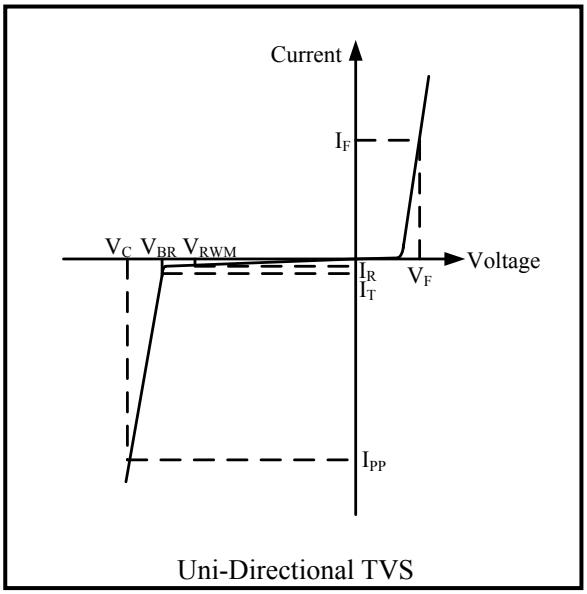
(Top View)

Absolute Maximum Rating

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±30 ±30	kV
I_{PP}	Peak Pulse Current(8/20us)	25	A
T_{OPT}	Operating Temperature	-55/+150	°C
T_{STG}	Storage Temperature	-55/+150	°C
T_L	Lead Soldering Temperature	260 (10 sec.)	°C

Electrical Characteristics (T = 25°C)

Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{t1}	Trigger Voltage
I_{t1}	Trigger Current @ V_{t1}
V_h	Holding Voltage
I_h	Holding Current @ V_h
V_C	Clamping Voltage @ I_{PP}
V_{CR}	Reverse Clamping Voltage @ I_{PP}
I_{PP}	Maximum Peak Pulse Current
C_{ESD}	Parasitic Capacitance

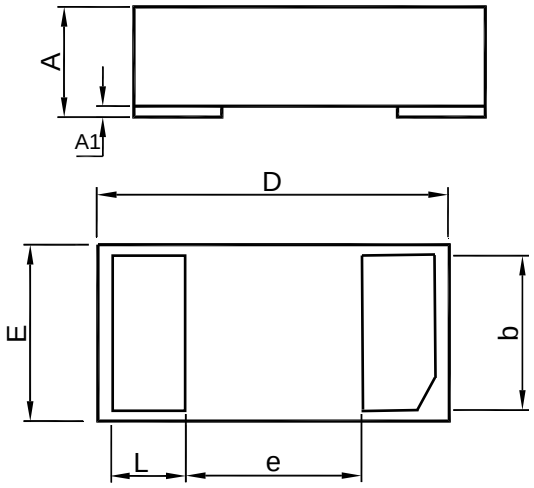


Uni-Directional TVS

Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}				12.0	V
I_R	V_{RWM} = 12.0V, T = 25°C		0.01	0.1	µA
V_{BR}	I_T = 1mA	13.3			V
V_F	I_T = 1mA			0.9	V
V_C	I_{PP} = 1A, t_p = 8/20µs			18.0	V
V_C	I_{PP} = 5 A, t_p= 8/20µs			20.0	V
V_C	I_{PP} =25 A, t_p= 8/20µs			30.0	V
C_{ESD}	V_R = 0V, f = 1MHz			160	pF

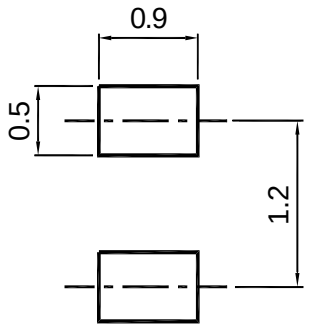
Package Outline Demensions

- ❑ DFN1610-2L Package
- ❑ MSL-1



UNIT	A	A1	b	D	E	e	L
mm	0.55 0.45	0.05 0	0.85 0.75	1.65 1.55	1.05 0.95	0.75 0.65	0.45 0.35

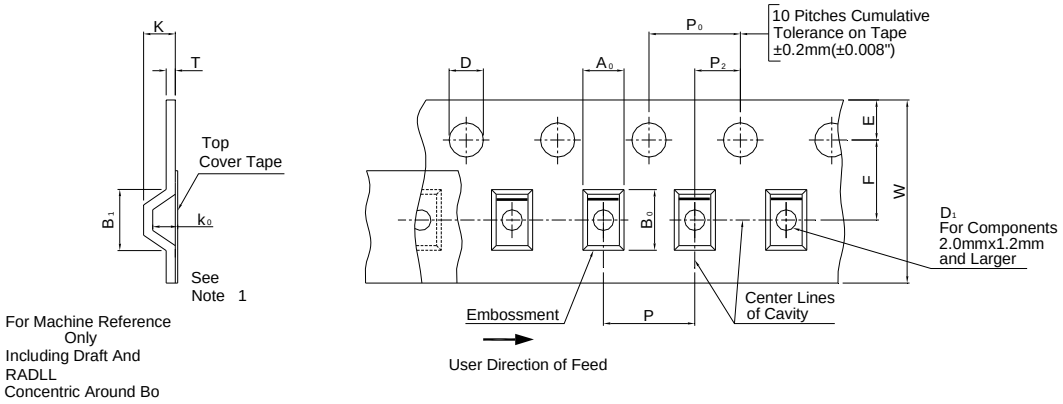
Recommended Soldering Footprint

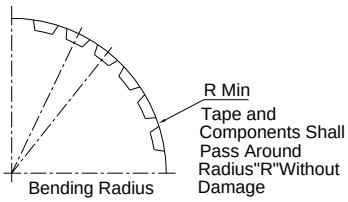


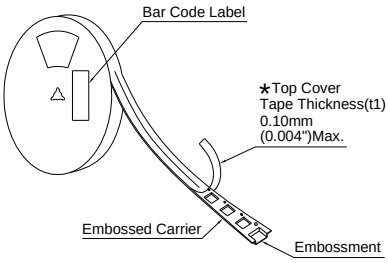
Packing information

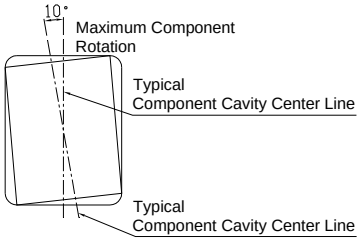
Package	Tape Width (mm)	Pitch		Reel Size		Per Reel Packing Quantity
		mm	inch	mm	inch	
DFN1610-2L	8	4 ± 0.1	0.157 ± 0.004	178	7	3,000

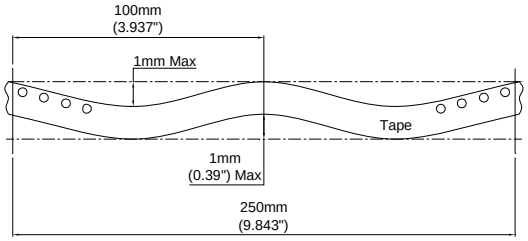
Tape and Reel Specification











Camber (Top View)

Allowable Camber To Lmm/100mm Nonaccumualtive Over 250mm

Dimensions

Tape Size	B1 Max.	D	D1	E	F	K	P0	P2	R Min.	T Max.	W Max.
8 mm	4.55mm (0.179")	1.5 +0.1mm -0.0 (0.059")	1.0 mm Min (0.039")	1.75± 0.1 mm (0.069± 0.004")	3.5 ± 0.05 mm (0.138 ± 0.002")	2.4 mm Max (0.094")	4 ± 0.1 mm (0.157 ± 0.004")	2 ± 0.1 mm (0.079 ± 0.002")	25 mm (0.98")	0.6 mm (0.024")	8.3 mm (0.327")
12 mm	8.2mm (0.323")	1.5 +0.1mm -0.0 (0.059")	1.5 mm Min (0.060")	1.75± 0.1 mm (0.069± 0.004")	5.5 ± 0.05 mm (0.217 ± 0.002")	6.4 mm Max (0.252")	4 ± 0.1 mm (0.157 ± 0.004")	2 ± 0.05 mm (0.079 ± 0.002")	30 mm (1.18")		12 ± 0.30 mm (0.47±0.012")

Metric dimensions govern-English are in parentheses for reference only.

Note 1: A_0, B_0, and K_0 are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max.

The component cannot rotate more than 10° within the determined cavity.

If B_1 exceeds 4.2 mm(0.165") for 8 mm embossed tape, the tape may not feed through all tape feeders.

Marking Codes

Note:

(1) "SB3D"is part number,fixed

Ordering Information

Part Number	Working Voltage	Quantity Per Reel	Reel Size
TS1231LDX	12.0V	3,000	7 Inch