Features

- Transient protection for high-speed data lines
  - IEC 61000-4-2 (ESD) ±30kV (Air)
    ±30kV (Contact)
  - IEC 61000-4-4 (EFT) 80A (5/50 ns)
  - IEC 61000-4-5 (Surge) 15A (8/20μs)
- Protection one I/O line
- Low operating and clamping voltage
- Low leakage current
- Green Part

Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Peripherals
- USB Interface

Mechanical Characteristics

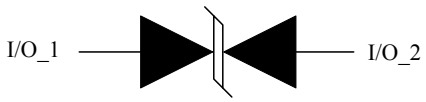
- DFN1006-2L package
- Flammability Rating: UL 94V-0
- Marking: Part number
- Packaging: Tape and Reel

Description

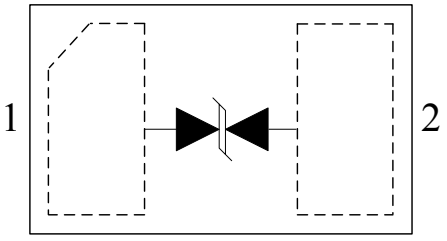
The TS0301TB is designed for applications requiring transient overvoltage protection capability. They are intended for use in voltage and ESD sensitive equipment such as computers, printers, business machines , communication systems , medical equipment and other applications. These devices are ideal for situations where board space is at a premium.

The TS0301TB 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



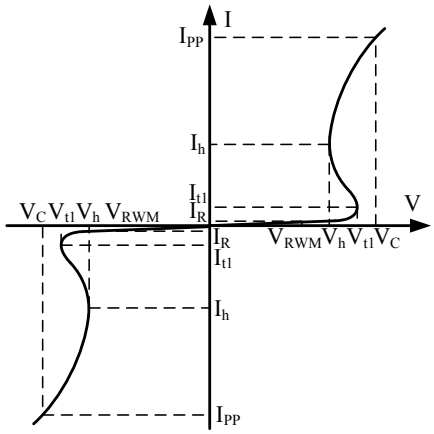
DFN1006-2L
(Top View)

Absolute Maximum Rating

Symbol	Parameter	Value	Units
I_{PP}	Peak Pulse Current (8/20μs)	15	A
P_{PK}	Peak Pulse Power (8/20μs)	150	Watts
V_{ESD}	ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	±30 ±30	kV
T_{OPT}	Operating Temperature	-55 to +125	°C
T_{STG}	Storage Temperature	-55 to +150	°C

Electrical Characteristics (T = 25°C)

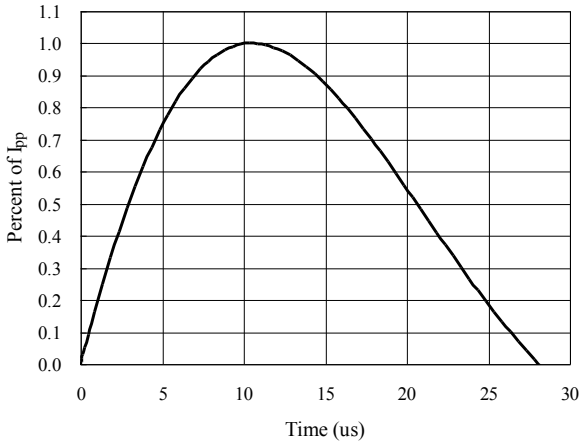
Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{t1}	Trigger Voltage
I_{t1}	Trigger Current @ V_{t1}
V_h	Holding Voltage
I_h	Holding Current @ V_h
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Peak Pulse Current
C_{ESD}	Parasitic Capacitance
C_Δ	Variation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



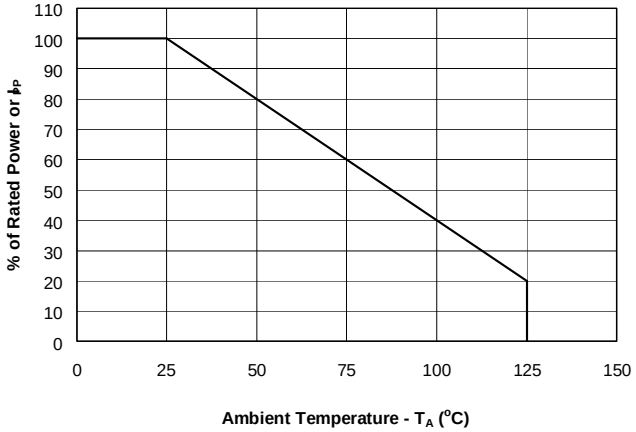
Bi-Directional TVS

Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}				3.3	V
I_R	V_{RWM} = 3.3V, T = 25°C		0.01	0.1	μA
V_{t1}	I_{t1} = 1mA	5.5		8.0	V
V_h	I_h = 100mA	3.0		4.0	V
V_C	I_{PP} = 1A, t_p = 8/20μs			5.0	V
V_C	I_{PP} = 15A, t_p = 8/20μs			10.0	V
C_{ESD}	V_R = 0V, f = 1MHz		0.8		pF

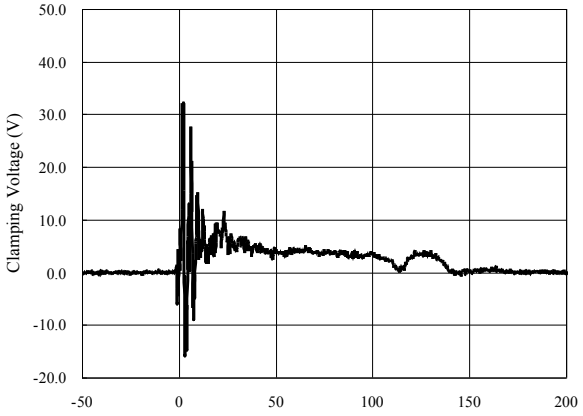
8/20μs Pulse Waveform



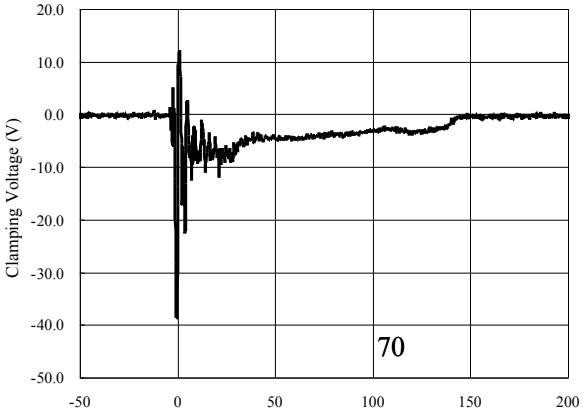
Power Derating Curve



ESD Clamping of I/O to I/O (+8kV Contact per IEC 61000-4-2)

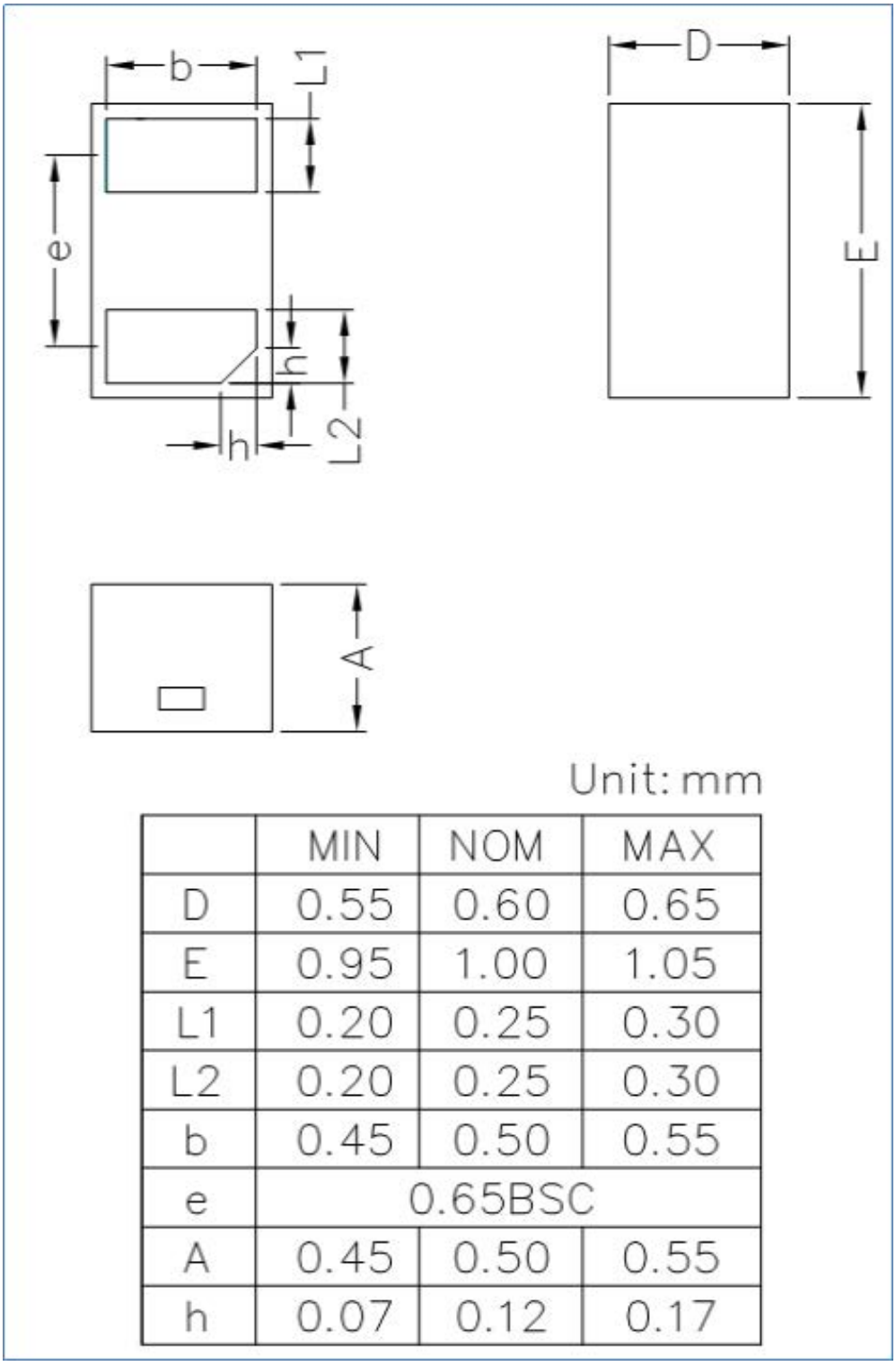


ESD Clamping of I/O to I/O (-8kV Contact per IEC 61000-4-2)



Package Outline

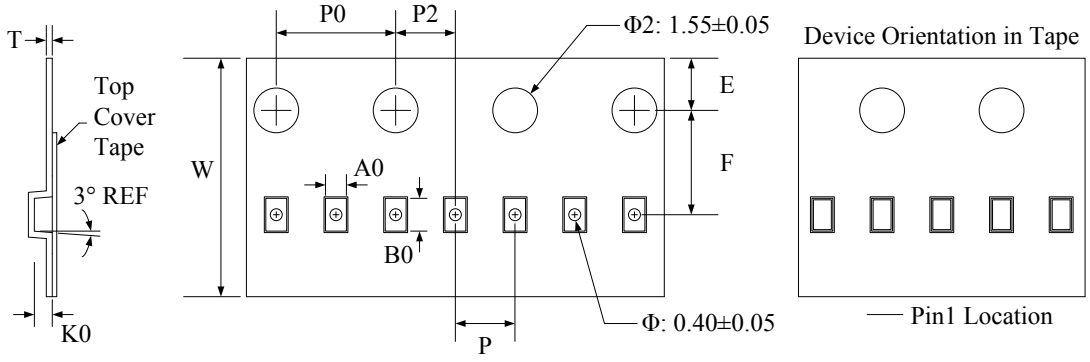
- DFN1006-2L package
- MSL-1



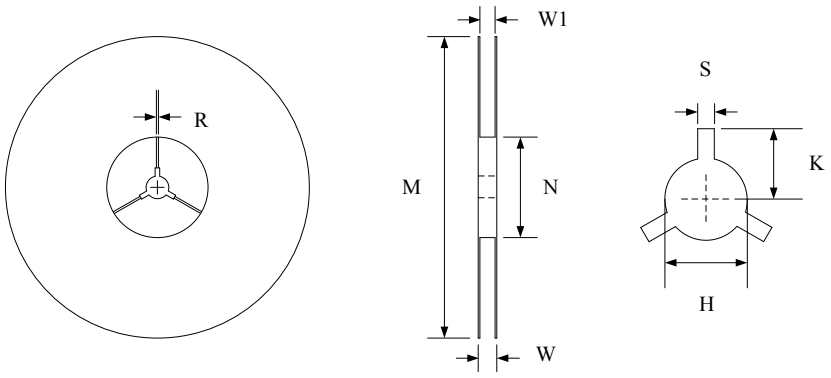
Unit: mm

	MIN	NOM	MAX
D	0.55	0.60	0.65
E	0.95	1.00	1.05
L1	0.20	0.25	0.30
L2	0.20	0.25	0.30
b	0.45	0.50	0.55
e	0.65BSC		
A	0.45	0.50	0.55
h	0.07	0.12	0.17

Tape and Reel Specification



Symbol	W	A0	B0	K0	E	F	P	P0	P2	T
Dimensions (mm)	8.00±0.1	0.7±0.05	1.15±0.05	0.55±0.05	1.75±0.1	3.5±0.05	2.0±0.1	4.0±0.1	2.0±0.05	0.2±0.05



Symbol	Reel Size	M	N	W	W1	H	S	K	R
Dimensions (mm)	Φ178	178.0±1.0	60.0±1.0	11.5±0.5	9.0±0.5	13.0±0.5	2.0±0.1	11.0±0.2	1.0±0.05

Marking Codes

3T

Ordering Information

Part Number	Working Voltage	Quantity Per Reel	Reel Size
TS0301TB	3.3V	10,000	7 Inch

Note:

(1) "3T " is part number, fixed