



Features

- ❑ IEC61000-4-2 (ESD) $\pm 30\text{kV}$ (air),
 $\pm 30\text{kV}$ (contact)
IEC61000-4-4 (EFT) 40A (5/50ns)
- ❑ 350 Watts Peak Pulse Power per (tp=8/20us)
- ❑ Protects one I/O line (bidirectional)
- ❑ Working voltages : 24V
- ❑ Low leakage current
- ❑ ROHS compliant

Description

The TS2401LB Series 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).

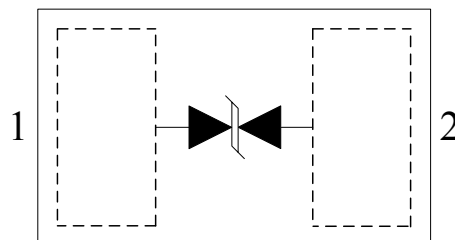
Applications

- ❑ 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

- ❑ DFN1006-2L package
- ❑ Flammability Rating: UL 94V-0
- ❑ Packaging: Tape and Reel
- ❑ High temperature soldering guaranteed: 260°C/10s
- ❑ Reel size: 7 inch

Pin Configuration



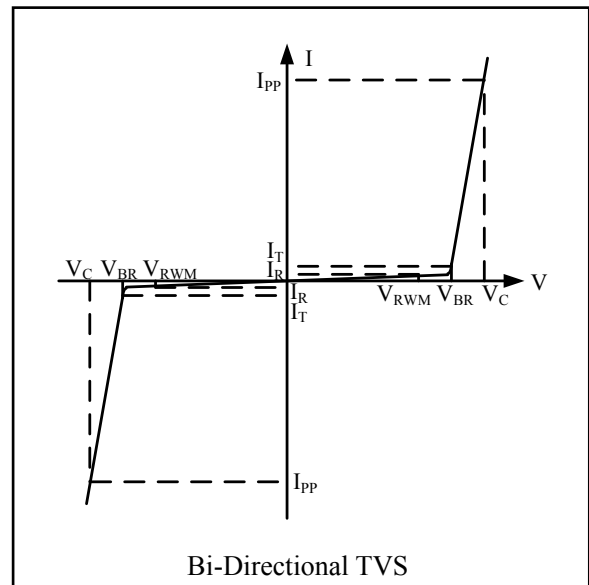
DFN1006-2L
(Top View)

**Absolute Maximum Rating**

Symbol	Parameter	Value	Units
V_{ESD}	ESD per IEC 61000-4-2 (Air)	± 30	kV
	ESD per IEC 61000-4-2 (Contact)	± 30	
P_{PP}	Peak Pulse Power (8/20 μ s)	350	W
T_{OPT}	Operating Temperature	-55/+150	$^{\circ}\text{C}$
T_{STG}	Storage Temperature	-55/+150	$^{\circ}\text{C}$
I_{PP}	Peak Pulse Current (8/20 μ s)	7	A

Electrical Characteristics (T = 25 $^{\circ}\text{C}$)

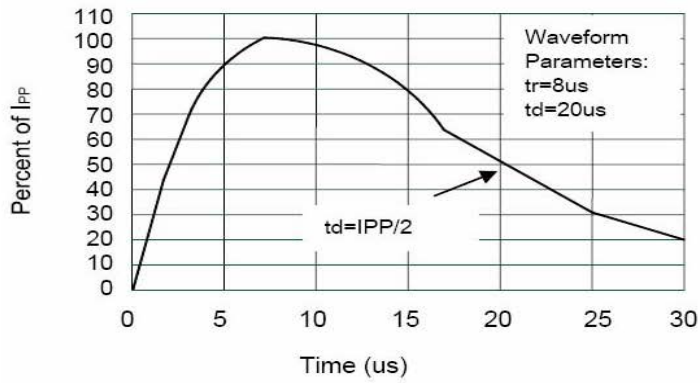
Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{BR}	Reverse Breakdown Voltage @ I_T
I_T	Test Current for Reverse Breakdown
V_C	Clamping Voltage @ I_{PP}
I_{PP}	Maximum Peak Pulse Current
C_{ESD}	Parasitic Capacitance
V_R	Reverse Voltage
f	Small Signal Frequency
I_F	Forward Current
V_F	Forward Voltage @ I_F



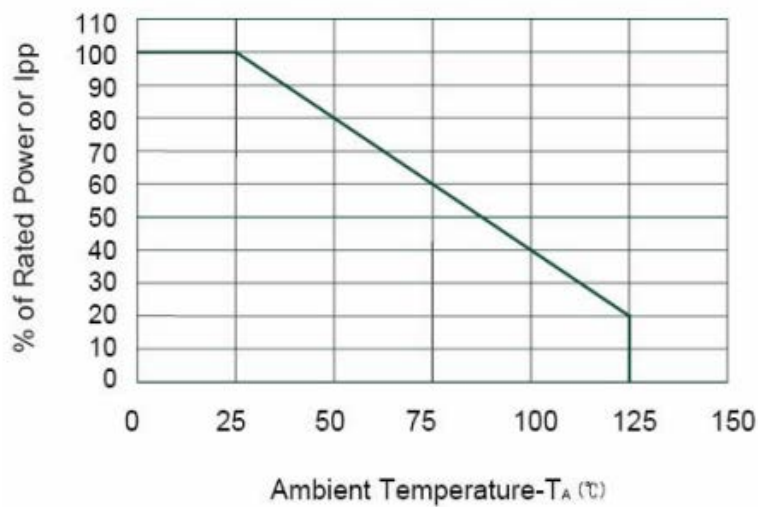
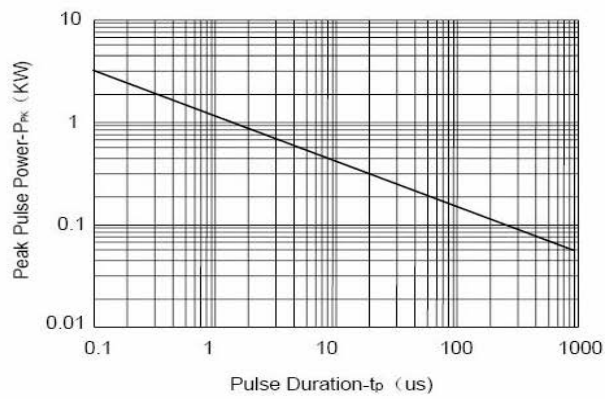
Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}				24	V
I_R	$V_{RWM} = 24\text{V}$, T = 25 $^{\circ}\text{C}$ Between I/O and GND			0.1	μA
V_{BR}	$I_T = 1\text{mA}$ Between I/O and GND	26.7			V
V_C	$I_{PP} = 1\text{A}$, $t_p = 8/20\mu\text{s}$ Between I/O and GND			36	V
V_C	$I_{PP} = 7\text{A}$, $t_p = 8/20\mu\text{s}$ Between I/O and GND			50	V
C_{ESD}	$V_R = 0\text{V}$, f = 1MHz Between I/O and GND			30	pF



Typical Characteristics



Pulse Waveform



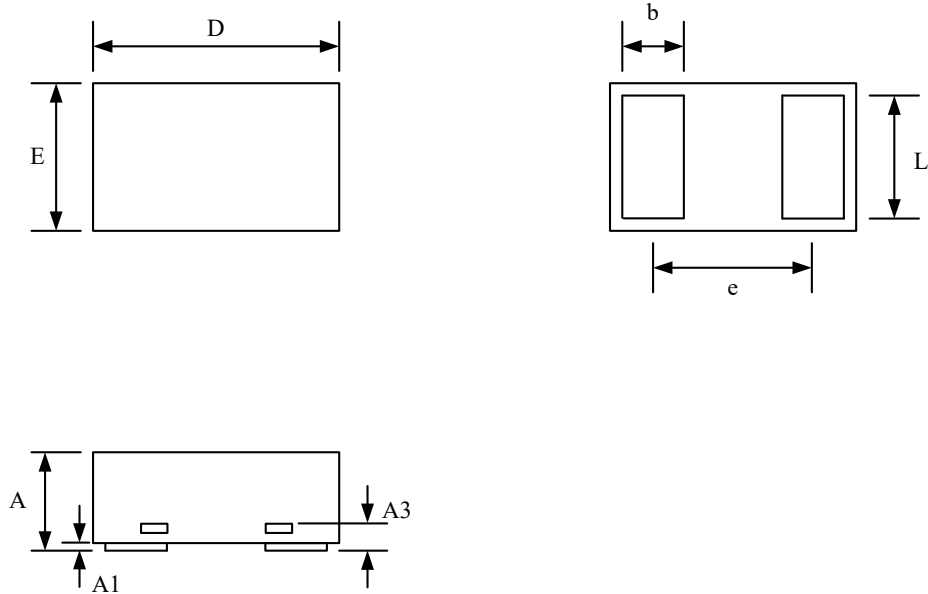
Power Derating Curve



Package Outline Dimensions

□ DFN1006-2L Package

□ MSL-1

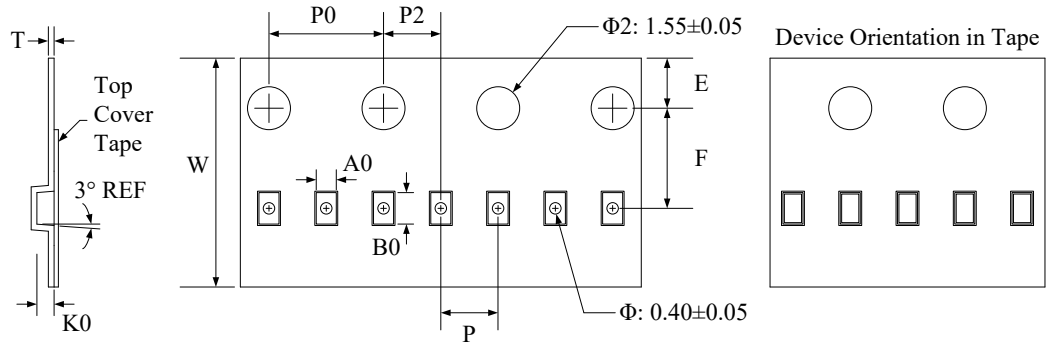


Package Dimensions (Controlling dimensions are in millimeters)

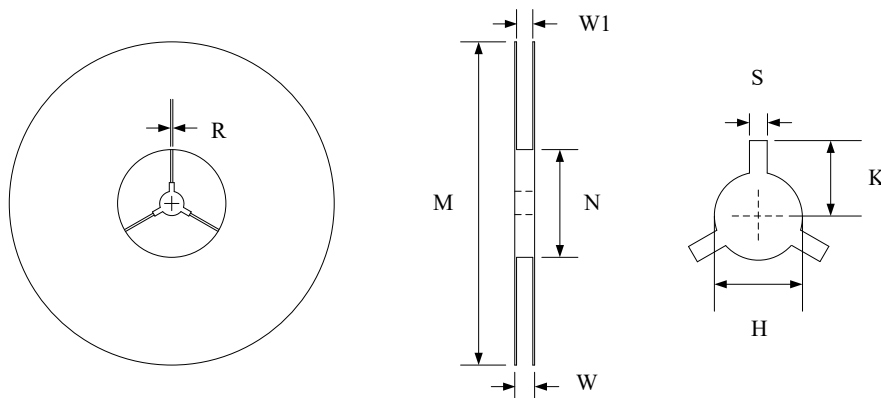
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Minimum	Maximum	Minimum	Maximum
A	0.400	0.550	0.016	0.022
A1	0.000	0.050	0.000	0.002
A3	0.125 REF		0.005 REF	
D	0.950	1.050	0.037	0.041
E	0.550	0.650	0.022	0.026
b	0.200	0.300	0.008	0.012
e	0.650 BSC		0.026 BSC	
L	0.450	0.550	0.018	0.022



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



Ordering Information

Part Number	Qty per Reel	Reel Size
TS2401LB	10,000	7 inch

Note:

(1) "OL" is part number, fixed