

Features

- ☐ Transient protection for high-speed data lines
IEC 61000-4-2 (ESD) $\pm 30\text{kV}$ (Air)
 $\pm 30\text{kV}$ (Contact)
IEC 61000-4-4 (EFT) 40A (5/50ns) IEC 61000-4-5 (Lightning) 14A (8/20us) Protects
- ☐ one I/O line (bidirectional)
- ☐ Low clamping voltage
- ☐ Working voltages : 8.0V
- ☐ Low leakage current
- ☐ Response Time is < 1 ns
- ☐ GREEN Part and RoHS Compliant

Description

TS0821VEX is an ultra-low capacitance ESD and Surge Protector designed to provide electrostatic discharge (ESD) protection for high-speed data interfaces. TS0821VEX is designed to protect parasitic-sensitive systems against over-voltage and over-current transient events. It complies with IEC 61000-4-2 (ESD), Level 4 ($\pm 15\text{kV}$ air, $\pm 8\text{kV}$ contact discharge), IEC 61000-4-4 (electrical fast transient - EFT) (40A, 5/50 ns), IEC 61000-4-5 (Surge) (14A, 8/20 μs), very fast charged device model (CDM) ESD and cable discharge event (CDE), etc.

TS0821VEX is in an SOD-323 package. The combined features of ultra-low capacitance and high ESD robustness make TS0801VE ideal for applications where arrays are not practical. The low clamping voltage of the TS0821VEX guarantees a minimum stress on the protected IC.

Applications

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

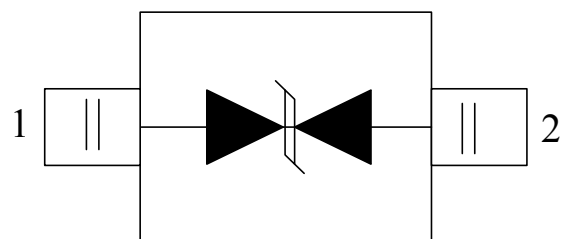
Mechanical Characteristics

- ☐ SOD-323 package
- ☐ Flammability Rating: UL 94V-0
- ☐ Packaging: Tape and Reel
- ☐ High temperature soldering guaranteed: 260°C/10s
- ☐ Reel size: 7 inch

Ordering Information

- ☐ Package: SOD-323
- ☐ Material: Halogen free
- ☐ Packing: Tape & Reel
- ☐ Quantity per reel: 3,000pcs

Pin Configuration



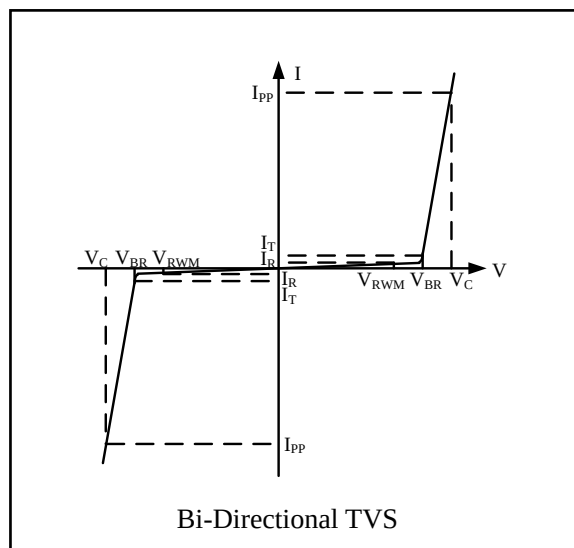
(Top View)

Absolute Maximum Rating

Symbol	Parameter	Value	Units
P_{PK}	Peak Pulse Power (8/20 μ s)	350	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 +150	°C
T_{STG}	Storage Temperature	-55 to +150	°C
T_{LST}	Lead Soldering Temperature	260	°C

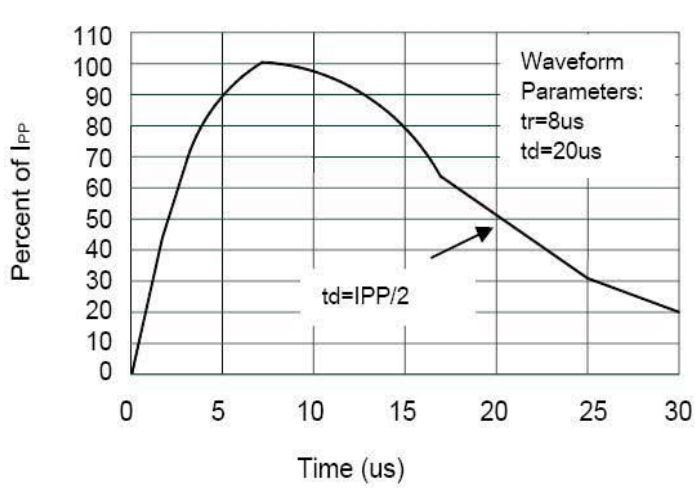
Electrical Characteristics (T = 25°C)

Symbol	Parameter
V_{RWM}	Nominal Reverse Working Voltage
I_R	Reverse Leakage Current @ V_{RWM}
V_{tl}	Trigger Voltage
I_{tl}	Trigger Current @ V_{tl}
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

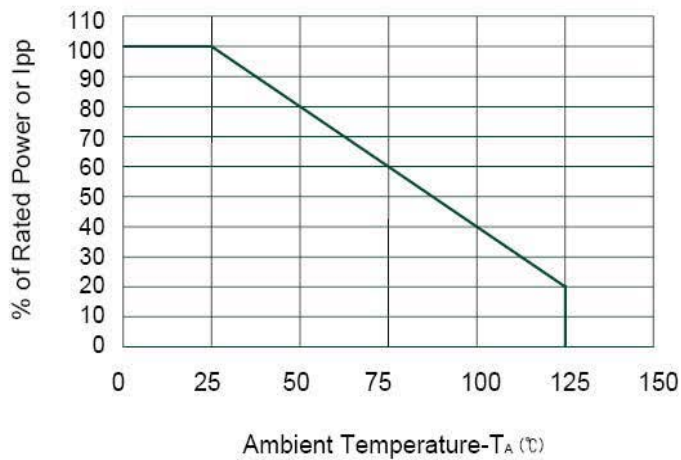
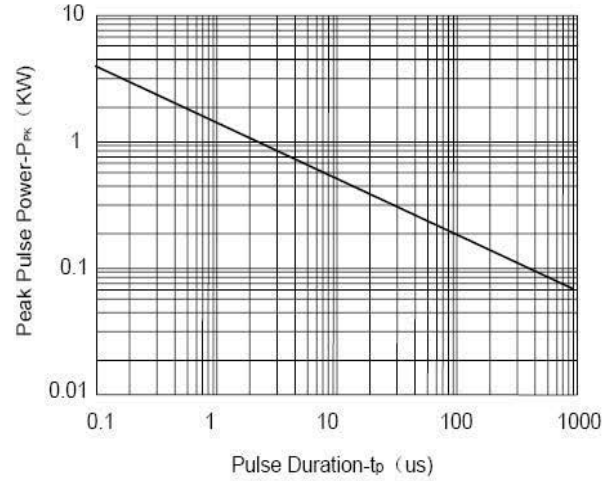


Symbol	Test Condition	Minimum	Typical	Maximum	Units
V_{RWM}				8.0	V
I_R	$V_{RWM} = 8.0V, T = 25^{\circ}C$		0.01	0.1	μA
V_{BR}	$I_T = 1mA$	9.3			V
V_C	$I_{PP} = 1A, t_p = 8/20\mu s$			17.0	V
V_C	$I_{PP} = 14A, t_p = 8/20\mu s$			25.0	V
C_{ESD}	$V_R = 8.0V, f = 1MHz$		1.5		pF

Electrical Characteristics Curve



Pulse Waveform



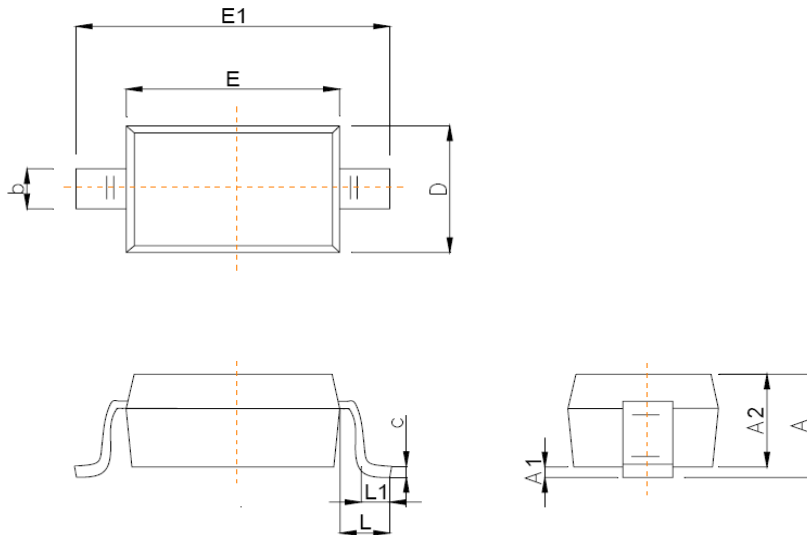
Power Derating Curve

Package Outline

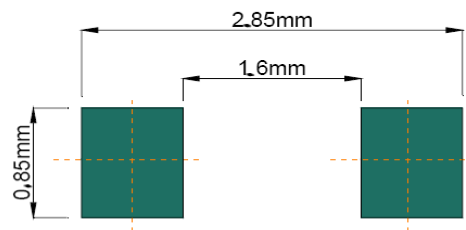
- SOD-323 package
- MSL-3 Level



Package Outline Dimensions



Symbol	Dimensions In Millimeters	
	Min	Max
A		1.00
A1	0.000	0.100
A2	0.800	0.900
b	0.250	0.350
c	0.080	0.150
D	1.200	1.400
E	1.600	1.800
E1	2.500	2.700
e	1.800	2.040
L	0.475 REF	
L1	0.250	0.400
θ	0°	8°



Recommended Pad outline

Marking Codes



Note:

(1) A0VE is the Part Number, fixed.

Ordering Information

Part Number	Working Voltage	Quantity Per Reel	Reel Size
TS0821VEX	8.0V	3,000	7 Inch