

## Features

- ◆ 150 Watts peak pulse power ( $t_p = 8/20\mu s$ )
- ◆ Transient protection for high speed data lines to IEC 61000-4-2 (ESD)  $\pm 30kV$  (air),  $\pm 30kV$  (contact) IEC 61000-4-4 (EFT) 40A (5/50ns)
- ◆ Working voltages : 5.5V
- ◆ Protects one bidirectional line or two unidirectional lines
- ◆ Low operating and clamping voltages
- ◆ Solid-state silicon avalanche technology

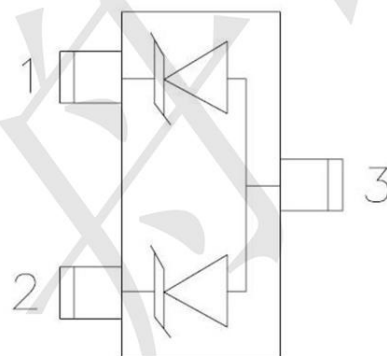
## Mechanical Characteristics

- ◆ Package: SOT23
- ◆ Lead Finish: Matte Tin
- ◆ UL Flammability Classification Rating 94V-0
- ◆ Pb-Free, Halogen Free, RoHS/WEEE Compliant
- ◆ Shipping Qty : 3000pcs/7Inch Tape & Reel

## Applications

- ◆ USB Power & Data Line Protection
- ◆ Monitors and Flat Panel Displays
- ◆ I<sup>2</sup>C Bus Protection
- ◆ Portable Instrumentation
- ◆ Set Top Box

## Dimensions and Pin Configuration



Circuit and Pin Schematic

**Marking:502B**

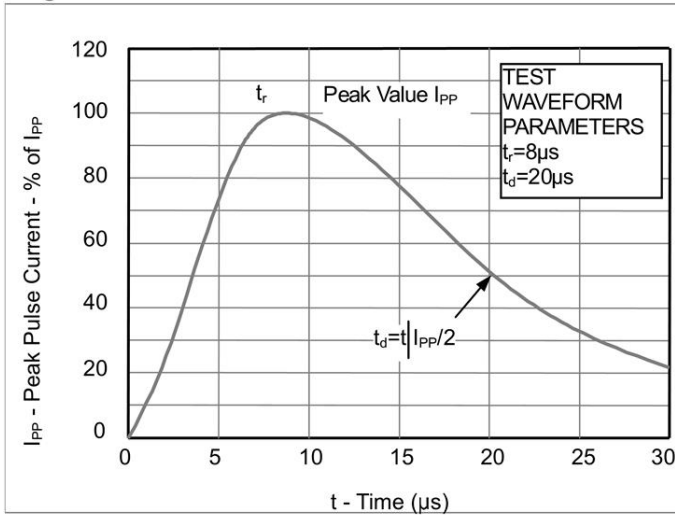
**Absolute Maximum Ratings ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Value	Unit
Peak Pulse Power(8/20 $\mu\text{s}$ )	Ppk	150	W
ESD per IEC 61000-4-2 (Air)	VESD	$\pm 30$	kV
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	TJ	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	Tstg	-55 to +150	$^\circ\text{C}$

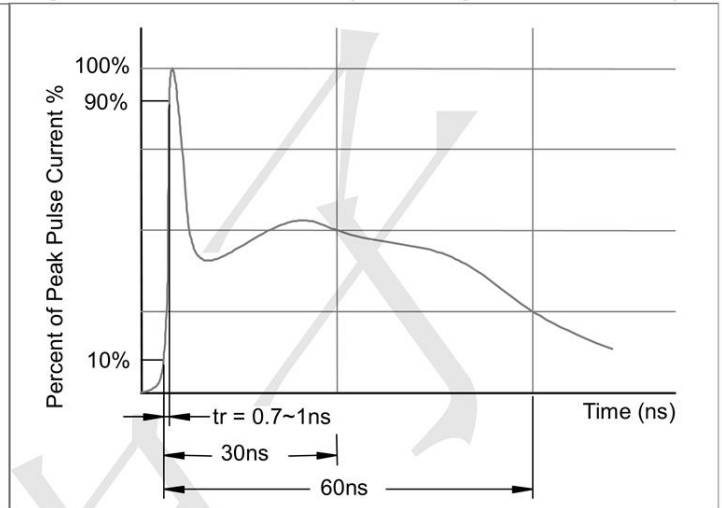
**Electrical Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise specified)**

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM			5.5	V	
Breakdown Voltage	VBR	6.5			V	$I_T = 1\text{mA}$
Reverse Leakage Current	IR		0.01	0.1	$\mu\text{A}$	$VRWM = 5\text{V}$
Clamping Voltage	VC			10	V	$I_{PP} = 1\text{A}$ (8 x 20 $\mu\text{s}$ pulse)
Clamping Voltage	VC			18	V	$I_{PP} = 8\text{A}$ (8 x 20 $\mu\text{s}$ pulse)
Peak Pulse Current	I <sub>PP</sub>			8	A	$t_P=8/20\mu\text{s}$
Junction Capacitance	CJ			50	pF	$V_R=0$ , $f=1\text{MHz}$ , IO to IO

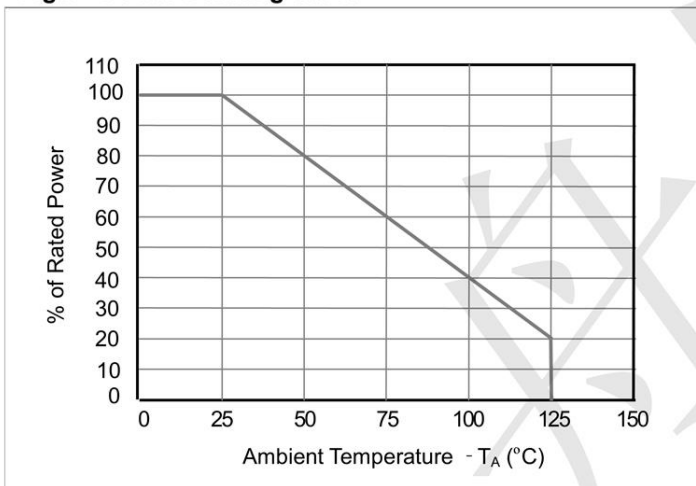
**Fig1. 8/20 $\mu$ s Pulse Waveform**



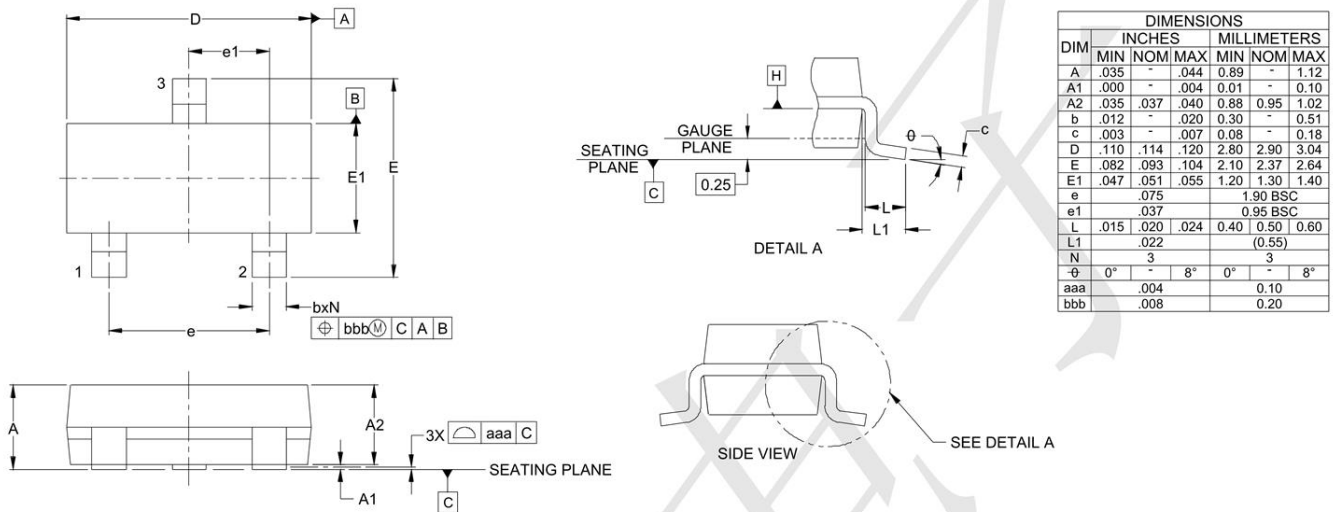
**Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)**



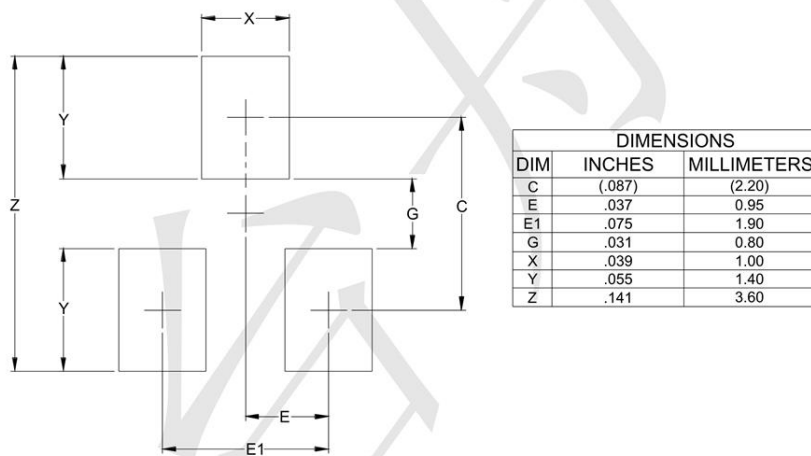
**Fig3. Power Derating Curve**



**Outline Drawing - SOT23**



**Land Pattern - SOT23**



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