



## Description

The AZ5125-01H.R7G protects sensitive semiconductor components from damage or upset due to electrostatic discharge (ESD) and other voltage induced transient events. Excellent clamping capability, low leakage, low capacitance, and fast response time provide best in class protection on designs that are exposed to ESD.

It gives designer the flexibility to protect one bi-directional line in applications where arrays are not practical.



SOD-523

## Features

- ★ Transient protection for high-speed data lines
  - IEC 61000-4-2(ESD)  $\pm 30\text{kV}$  (Contact)  
 $\pm 30\text{kV}$  (Air)
  - IEC 61000-4-4(EFT) 40A (5/50 ns)
- ★ Peak power dissipation: 128W (8/20us)
- ★ Working voltages : 5V
- ★ Protects one Vcc or data line
- ★ Low clamping voltage
- ★ Low leakage current



Circuit Diagram

## Ordering Information

Product ID	Pack	Qty(PCS)
AZ5125-01H.R7G	SOD-523	3000

## Absolute Ratings(Tamb = 25°C)

Symbol	Parameter	Value	Units
P <sub>PP</sub>	Peak Pulse Power ( $t_p = 8/20\text{ }\mu\text{ s}$ )	128	W
T <sub>L</sub>	Maximum lead temperature for soldering during 10s	260	°C
T <sub>stg</sub>	Storage Temperature Range	-55 to +155	°C
T <sub>op</sub>	Operating Temperature Range	-40 to +125	°C
T <sub>j</sub>	Maximum junction temperature	150	°C
	IEC61000-4-2 (ESD) air discharge contact discharge	$\pm 30$ $\pm 30$	KV
	IEC61000-4-4 (EFT)	40	A



### Electrical Characteristics

Symbol	Parameter	Test Condition	MMin	Typ	Maxx	Units
$V_{RWM}$	Reverse Working Voltage				5.0	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	5.6		9.0	V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5.0\text{V}$			0.1	$\mu\text{A}$
$V_C$	Clamping Voltage	$I_{RWM} = 5\text{A}, t_p = 8/20\mu\text{s}$			11.6	V
		$I_{RWM} = 8\text{A}, t_p = 8/20\mu\text{s}$			16	V
$C_J$	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$		10	15	pF



## Typical Characteristics

Fig 1 8/20 $\mu$ s Waveform per IEC61000-4-5

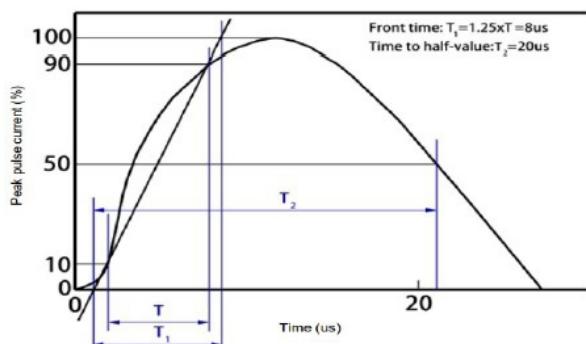


Fig 2 Contact Discharge Current Waveform per IEC 61000-4-2)

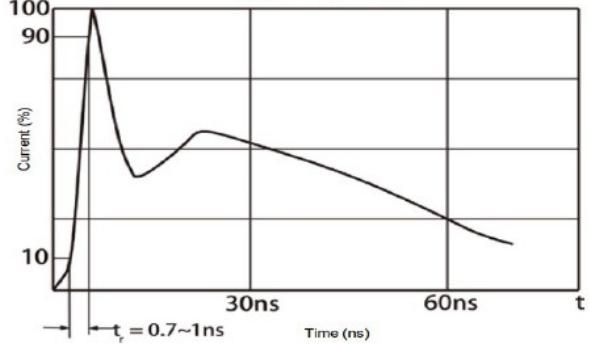


Fig 3 Power Derating Curve

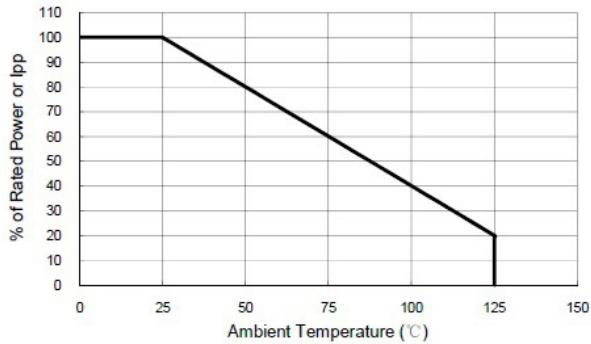


Fig 4 Voltage vs Capacitance

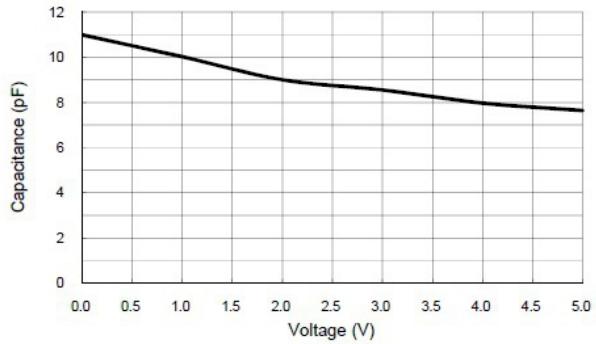


Fig 5 Voltage Sweeping

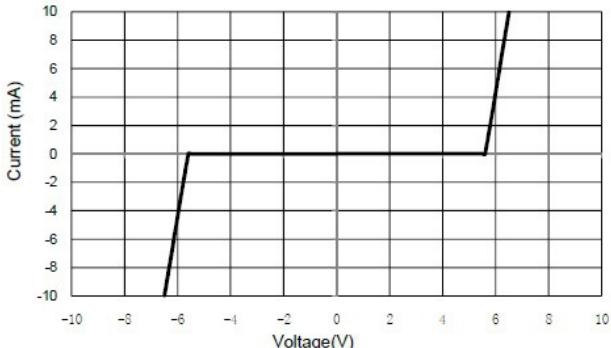
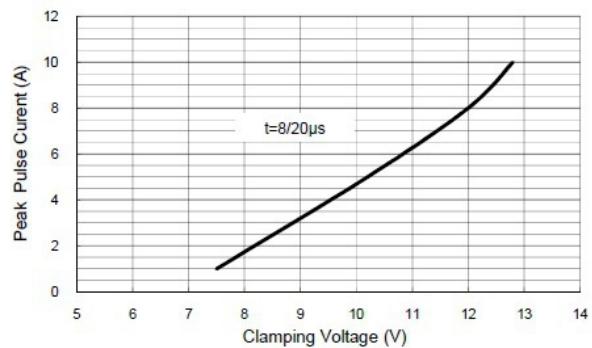
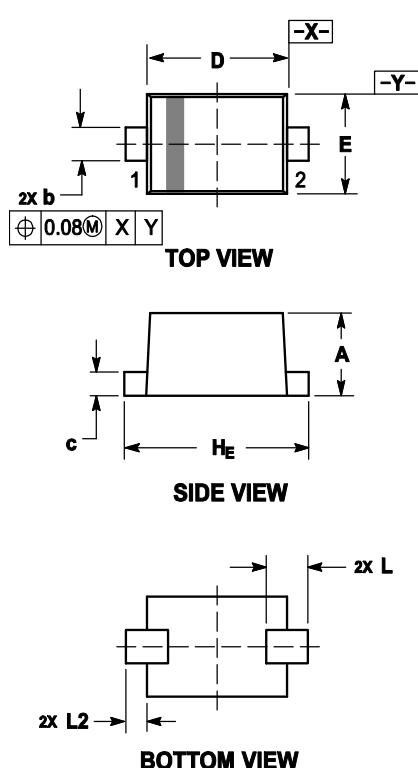


Fig 6 Clamping Voltage vs Peak Pulse Current





## Outline And Dimensions

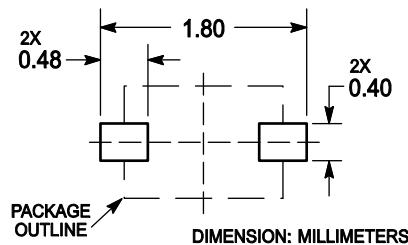


### Notes:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.50	0.60	0.70	0.020	0.024	0.028
b	0.25	0.30	0.35	0.010	0.012	0.014
c	0.07	0.14	0.20	0.003	0.006	0.008
D	1.10	1.20	1.30	0.043	0.047	0.051
E	0.70	0.80	0.90	0.028	0.031	0.035
H <sub>E</sub>	1.50	1.60	1.70	0.059	0.063	0.067
L	0.30 REF			0.012 REF		
L <sub>2</sub>	0.15	0.20	0.25	0.006	0.008	0.010

## Soldering Footprint





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