



### Discription

The ESD9B5.0ST5G 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-923

### Features

- 80W peak pulse power per line ( $t_p = 8/20\mu s$ )
- SOD-923 package
- Replacement for MLV(0402)
- Bidirectional configurations
- Response time is typically  $< 1ns$
- Low clamping voltage
- RoHS compliant
- Transient protection for data lines to EC61000-4-2(ESD)  $\pm 30KV$ (air),  $\pm 30KV$ (contact ); IEC61000-4-4 (EFT) 40A (5/50ns)



Circuit Diagram

### Ordering information

Product ID	Pack	Qty(PCS)
ESD9B5.0ST5G	SOD-923	8000

### Absolute Ratings ( $T_{amb}=25^{\circ}C$ )

Symbol	Parameter	Value	Units
$P_{PP}$	Peak Pulse Power ( $t_p = 8/20 \mu s$ )	80	W
$T_L$	Maximum lead temperature for soldering during 10s	260	$^{\circ}C$
$T_{stg}$	Storage Temperature Range	-55 to +155	$^{\circ}C$
$T_{op}$	Operating Temperature Range	-40 to +125	$^{\circ}C$
$T_j$	Maximum junction temperature	150	$^{\circ}C$
	IEC61000-4-2 (ESD)	air discharge contact discharge	$\pm 30$ $\pm 30$ KV



**Electrical characteristics per line@25°C (unless otherwise specified)**

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Peak Reverse Working Voltage	$V_{RWM}$				5	V
Breakdown Voltage	$V_{BR}$	$I_t = 1mA$	5.6	6.7	7.8	V
Reverse Leakage Current	$I_R$	$V_{RWM} = 5V T=25^\circ C$			1.0	$\mu A$
Maximum Reverse Peak Pulse Current	$I_{PP}$			5		A
Clamping Voltage	$V_C$	$I_{PP}=1A$			8	V
Clamping Voltage	$V_C$	$I_{PP}=3A$			13	V
Clamping Voltage	$V_C$	$I_{PP}=5A$			15	V
Junction Capacitance	$C_j$	$V_R=0V f = 1MHz$		12	15	pF

**Typical Characteristics**

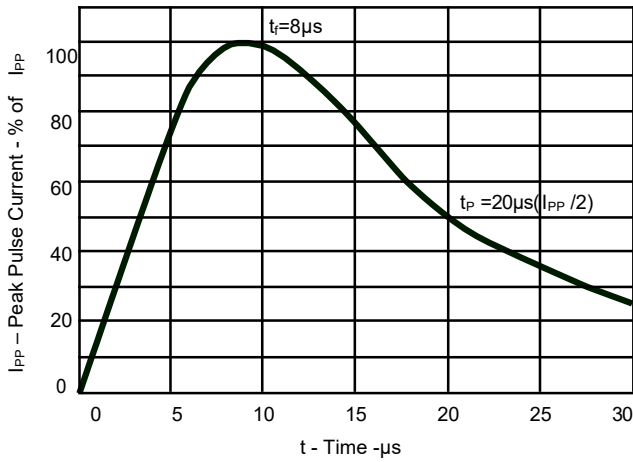


Fig 1. Pulse Waveform

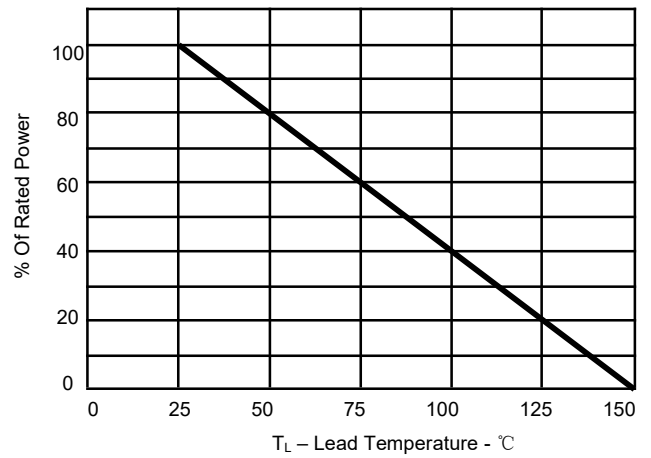
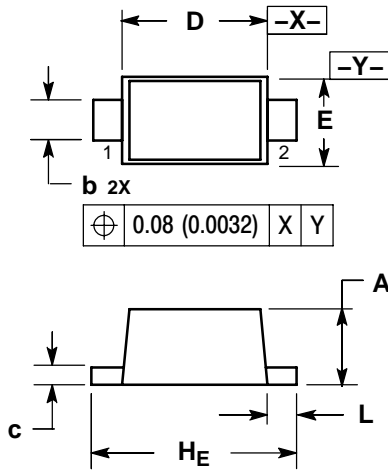


Fig 2. Power Derating Curve



SOD-923

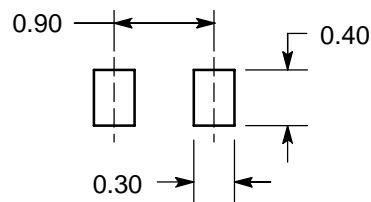


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.34	0.37	0.40	0.013	0.015	0.016
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
HE	0.95	1.00	1.05	0.037	0.039	0.041
L	0.05	0.10	0.15	0.002	0.004	0.006

SOLDERING FOOTPRINT\*



DIMENSIONS: MILLIMETERS



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