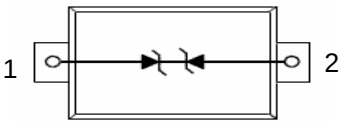
Bi-directional TVS Diode for ESD Protection

The TESD9B5V0A is a device designed for electrostatic discharge (ESD) protection. It features a peak pulse power of 135W (8/20 μs), low capacitance for ESD protection, and is packaged in the SOD - 923 package. It is RoHS compliant with a matte tin lead finish (Pb - Free) and is used to protect one high - speed data line. It meets the IEC61000 - 4 - 2 Level 4 standard with contact discharge >30 kV and air discharge >30 kV.

FEATURES

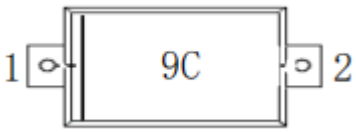


- ✧ 135W (8/20 μs) Peak Pulse Power
- ✧ Low Capacitance ESD Protection
- ✧ SOD - 923 Package
- ✧ RoHS Compliant
- ✧ Matte Tin Lead finish (Pb - Free)
- ✧ Protect One High Speed Data Line
- ✧ Meet IEC61000 - 4 - 2 Level 4: Contact Discharge >30 kV Air; Discharge >30 kV

MAIN APPLICATIONS

- ✧ Communication System
- ✧ Portable Instrumentation
- ✧ Audio and Video Equipment
- ✧ Computers and Peripherals
- ✧ USB 1.1, USB 1.0 Ports

MARKING CODE



ORDERING INFORMATION

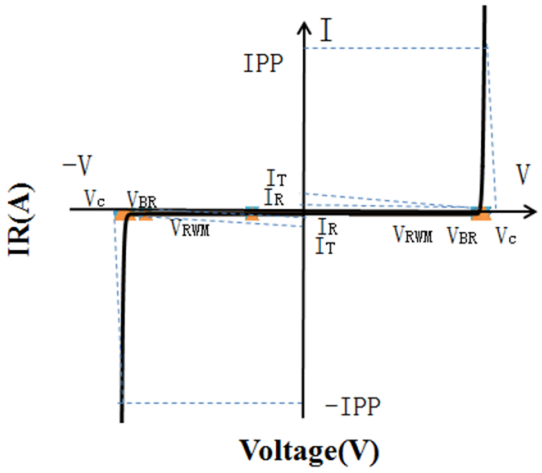
PART No.	PACKAGE TYPE	QUANTITY(PCS) REEL	DESCIPTION
TESD9B5V0A	SOD-923	8,000	7 inch reel pack

ABSOLUTE MAXIMUM RATINGS (T_A=25℃, RH=45%-75%, unless otherwise noted)

Symbol	Parameter	Value	Unit
P_{PK}	Peak Pulse Power	135	W
I_{PP}	Peak Pulse Current	9	A
V_{ESD} (Contact)	Contact ESD Voltage per IEC61000-4-2	30	kV
V_{ESD} (Air)	Air ESD Voltage per IEC61000-4-2	30	kV
TJ	Junction Temperature	-55 to +150	℃
TSTG	Storage Temperature	-55 to +150	℃

PORTION ELECTRONICS PARAMETER

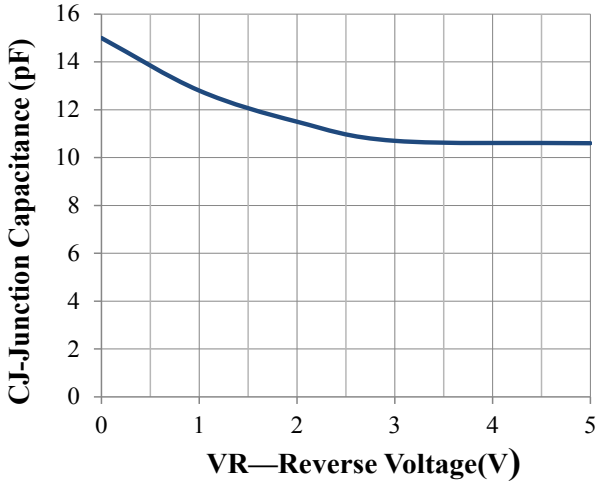
Symbol	Parameter
I_T	Test Current
I_{PP}	Maximum Reverse Peak Pulse Current
Vc	Clamping Voltage @Ic



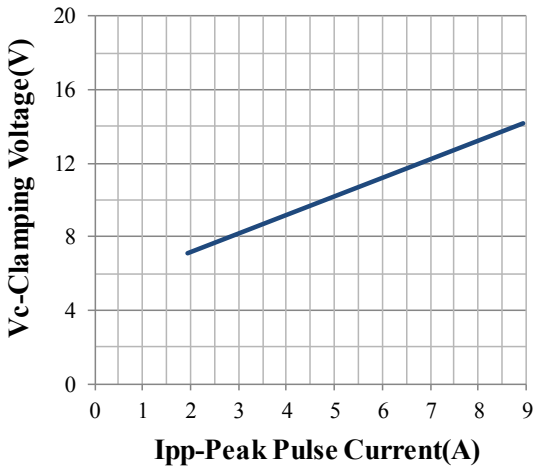
ELECTRICAL CHARACTERISTICS (T_A=25℃)

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
VRWM	Reverse Working Peak Voltage				5	V
VBR	Reverse Breakdown Voltage	IT = 1mA	5.7		9	V
IR	Reverse Leakage Current	VRWM = 5V			0.1	μA
VC	Clamping Voltage	IPP = 1A (8/20μs)			12	V
VC	Clamping Voltage	IPP = 9A (8/20 μs)			15	V
CJ	Capacitance	VR = 0V, f = 1MHz	8	8.9	15	pF

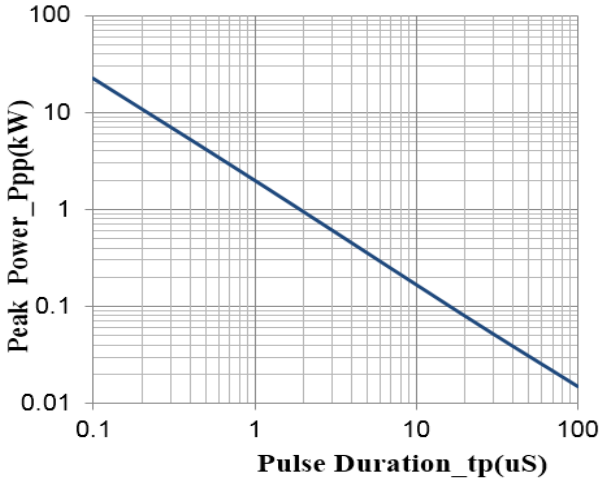
RATINGS AND V-I CHARACTERISTICS CURVES (T_A=25℃, unless otherwise noted)



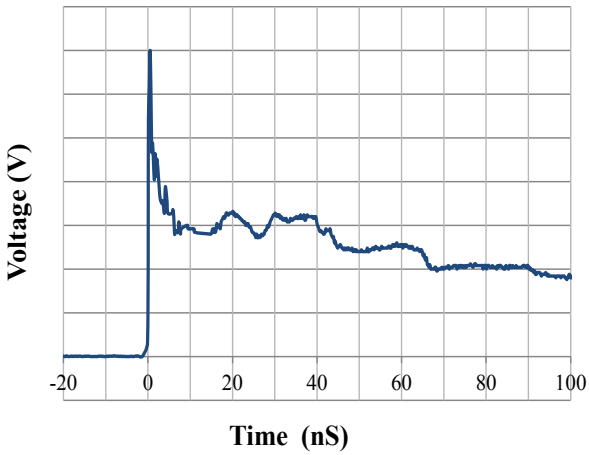
Junction Capacitance vs. Reverse Voltage



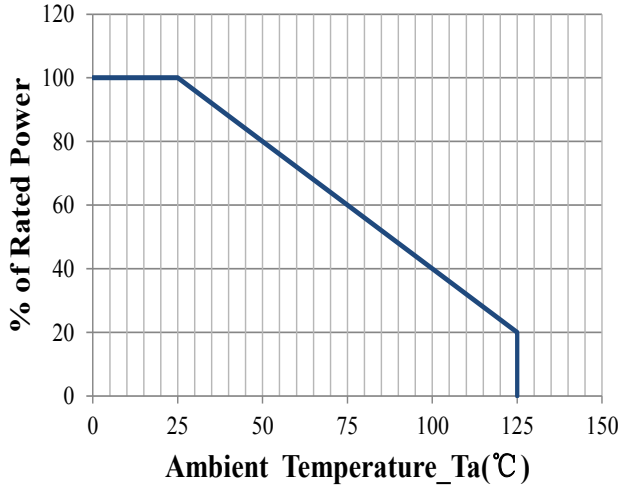
Clamping Voltage vs. Peak Pulse Current



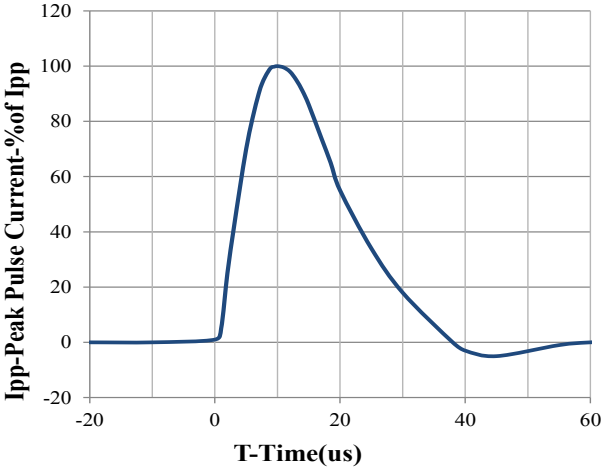
Peak Pulse Power vs. Pulse Time



IEC61000−4−2 Pulse Waveform

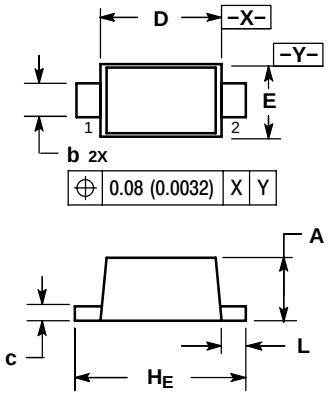


Power Derating Curve



8 X 20us Pulse Waveform

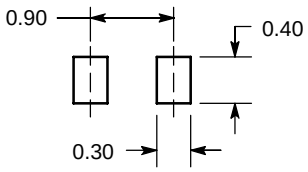
SOD-923



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.

	MILLIMETERS			INCHES		
DIM	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
H_E	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