1-Line Low Capacitance Bi-directional TVS Diode

Features

- 350W peak pulse power (8/20us)
- Ultra low capacitance : 1.5pF typical
- Ultra low leakage : nA level
- Low operating voltage : 12V
- Low clamping voltage
- Complies with following standards :
  - IEC 61000-4-2(ESD) immunity test
    Air discharge : ±30kV, Contact discharge : ±30kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 14A (8/20us)
- RoHS Compliant

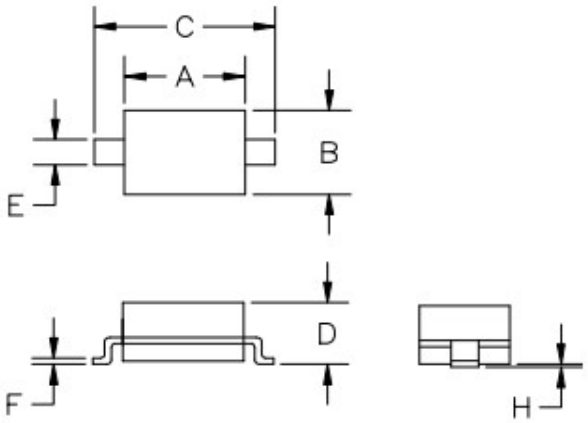
Mechanical Data

- Package : SOD-323
- Case Material : "Green" Molding Compound.
- Lead Finish : Matte Tin
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity : Level 3 per J-STD-020
- Terminal Connections : See Diagram Below
- Marking Information : See Below

Applications

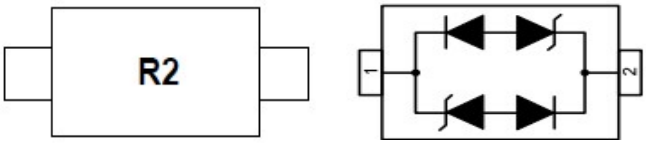
- USB Ports
- Smart Phones
- Wireless Systems
- Ethernet 10/100/1000 Base T

SOD-323



SYM	DIMENSIONS			
	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	1.50	1.80	0.060	0.071
B	1.20	1.40	0.045	0.054
C	2.30	2.70	0.090	0.107
D	-	1.10	-	0.043
E	0.30	0.40	0.012	0.016
F	0.10	0.25	0.004	0.010
H	-	0.10	-	0.004

Marking and Circuit Schematic



Absolute Maximum Ratings (Ta= 25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	Ppk	500	W
Peak Pulse Current (8/20us)	Ipp	12	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±30 ±30	kV
Operating Junction Temperature Range	T_J	-40 to +85	℃
Storage Temperature Range	T_{STG}	-55 to +150	℃

Electrical Charateristics (Ta= 25℃ unless otherwise specified)

Characteristic	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Reverse Working Voltage	V_{RWM}	-	-	12	V	
Breakdown Voltage	V_{BR}	13.3	-	17.8	V	I_T = 1mA
Reverse Leakage Current	I_R	-	-	0.2	uA	V_{RWM} = 12V
Clamping Voltage	V_C	-	-	18	V	I_{PP}=1A(8×20us pulse)
Clamping Voltage	V_C	-	-	35	V	I_{PP}=14A(8×20us pulse)
Junction Capacitance	C_J	-	1.5	-	pF	f=1MHz, V_R=0V

Ratings and Characteristics Curves (Ta=25℃ unless otherwise noted)

Fig.1 Power Derating Curve

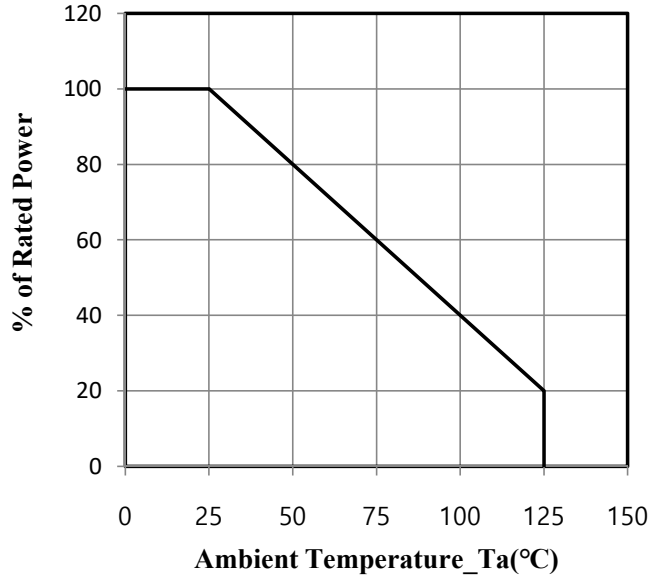


Fig.2 Peak Pulse Power vs. Pulse Time

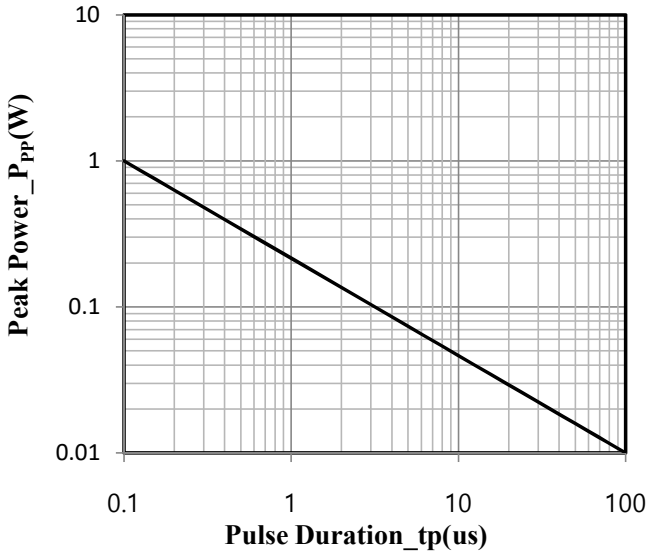


Fig.3 Clamping Voltage vs. Peak Pulse Current (tp=8/20us)

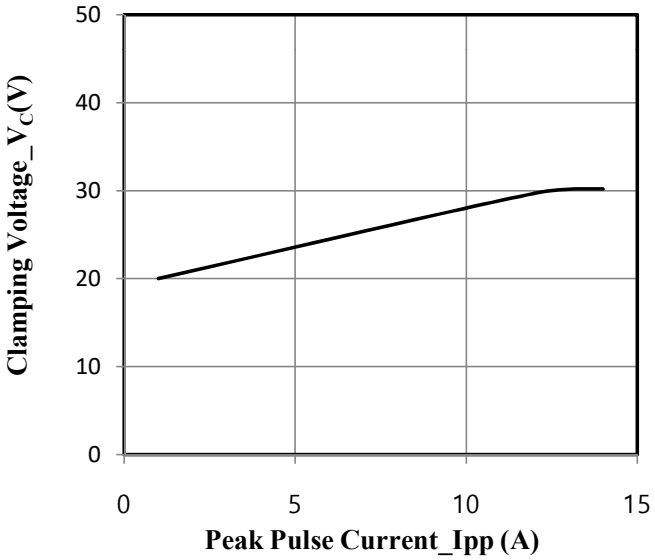


Fig.4 Junction Capacitance vs. Reverse Voltage

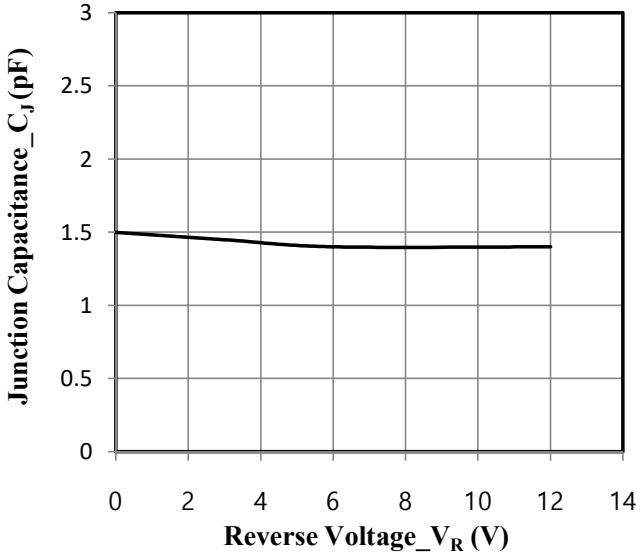


Fig.5 8 × 20us Pulse Waveform

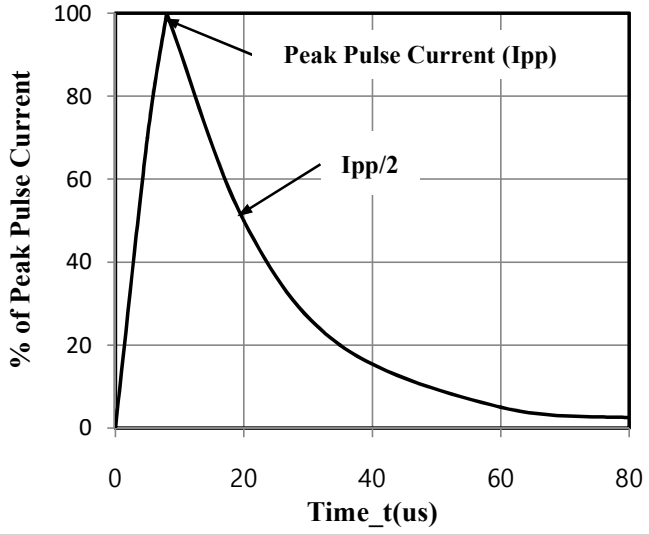


Fig. 6 ESD Clamping Voltage 8kV Contact per IEC61000-4-2