1-Line Low Capacitance TVS Diode

Features

- Low capacitance : 2.0pF typical (1/O to GND)
- Protects one data line
- Low operating voltage : 5V
- Low clamping voltage
- JEDEC SOT-523 package
- 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) 15A (8/20us)
- RoHS Compliant

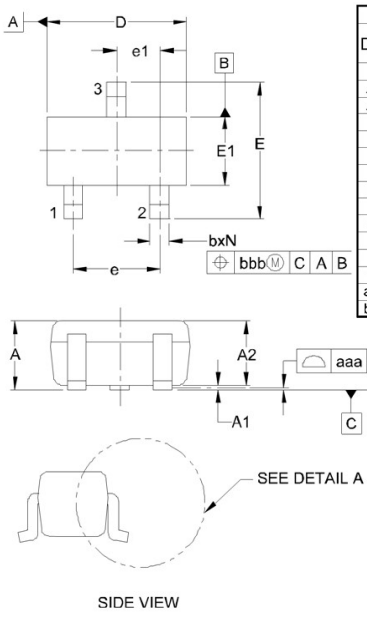
Mechanical Data

- Package : SOT-523
- 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

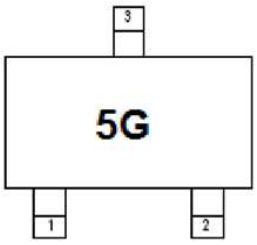
- Mobile Display Digital Interface (MDDI)
- USB 2.0
- Photodetector Protection
- HBT Power Amplifier Protection
- Infiniband Transceiver Protection
- Firewire Ports

SOT-523

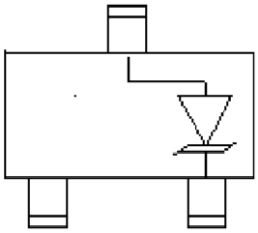


DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.023	-	.035	0.60	-	0.90
A1	.000	-	.004	0.00	-	0.10
A2	.023	.030	.031	0.60	0.75	0.80
b	.005	-	.012	0.15	-	0.30
c	.003	-	.008	0.10	-	0.20
D	.059	.063	.067	1.50	1.60	1.70
E	.057	.063	.069	1.45	1.60	1.75
E1	.029	.031	.033	0.75	0.80	0.85
e	.039 BSC			1.00 BSC		
e1	.020 BSC			0.50 BSC		
L	(.009)			(0.22)		
N	3			3		
θ	0°	-	8°	0°	-	8°
aaa	.004			0.10		
bbb	.008			0.20		

Marking



5G = Device Marking Code



Circuit and Pin Schematic

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

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20us)	Ppk	300	W
Peak Pulse Current (8/20us)	Ipp	15	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	-55 to +125	℃
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}	-	-	5.0	V	
Breakdown Voltage	V_{BR}	6.0	-	-	V	I_T = 1mA,
Reverse Leakage Current	I_R	-	-	0.5	uA	V_{RWM} = 5V
Clamping Voltage	V_C	-	-	10	V	I_{PP}=1A(8×20us pulse)
Clamping Voltage	V_C	-	-	20	V	I_{PP}=15A(8×20us pulse)
Junction Capacitance	C_J	-	-	2.0	pF	f=1MHZ, V_R=0V

* Test Pin : Pin 1 to pin 3

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

Fig.1 Power Derating Curve

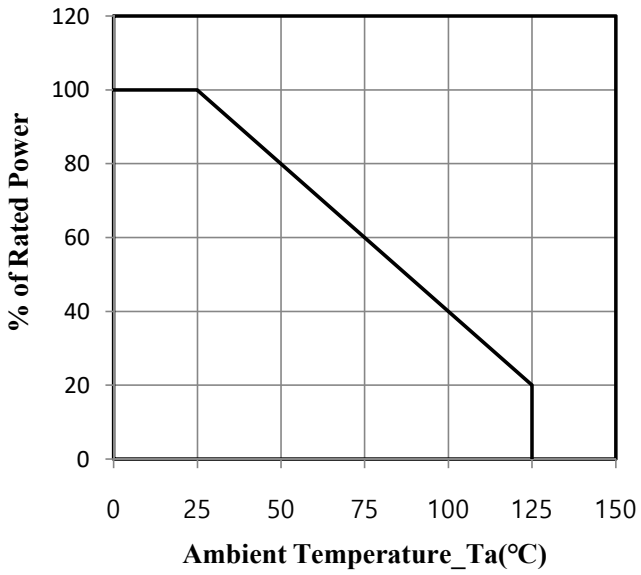


Fig.2 Peak Pulse Power vs. Pulse Time

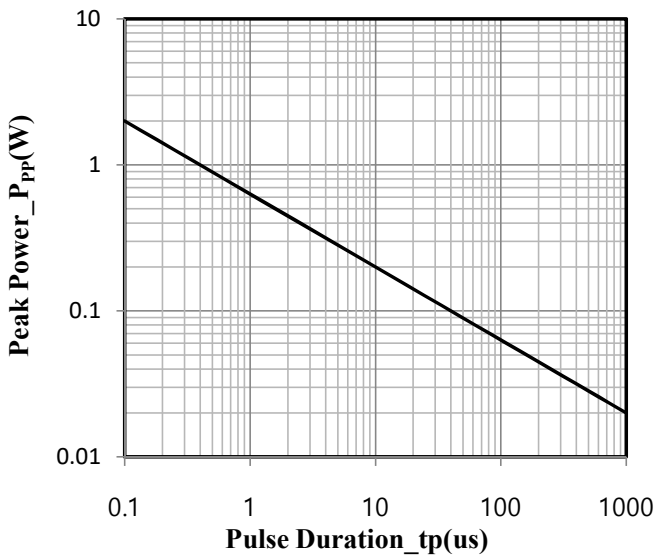


Fig.3 Clamping Voltage vs. Peak Pulse Current (tp=8/20us)

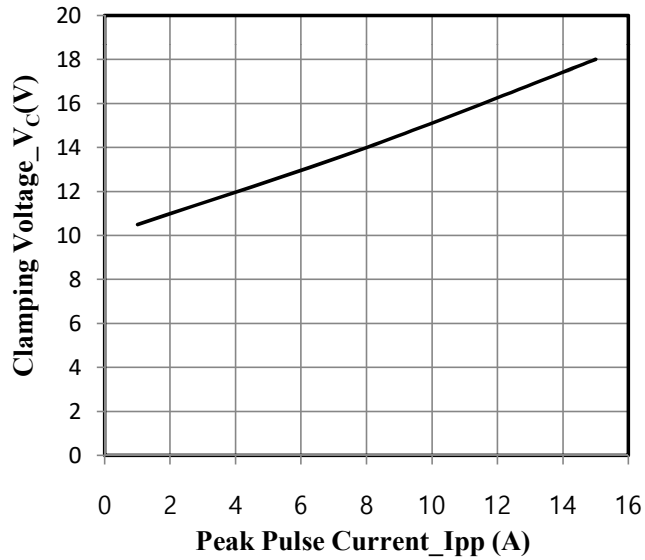


Fig.4 Junction Capacitance vs. Reverse Voltage

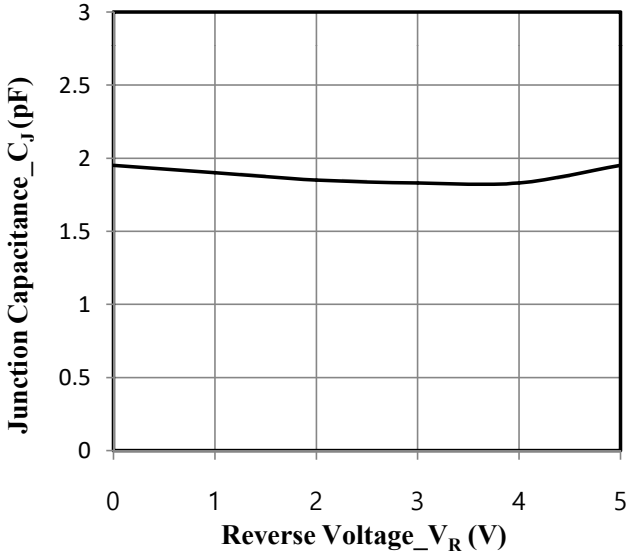


Fig.5 8 × 20us Pulse Waveform

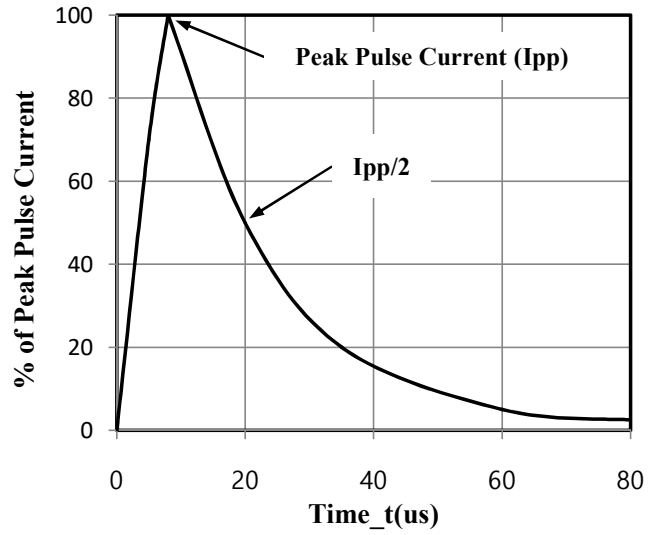


Fig. 6 ESD Clamping Voltage 8kV Contact per IEC61000-4-2