2-Line Uni-directional TVS Diode Array

Features

- 240W peak pulse power (8/20us)
- Protects one bi-directional or two uni-directional lines
- Ultra low leakage : nA level
- Operating voltage : 3.3V
- Low clamping voltage
- Complies with following standards :
  - IEC 61000-4-2(ESD) immunity test
    Air discharge : ±17kV, Contact discharge : ±20kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 16A (8/20us)
- RoHS Compliant

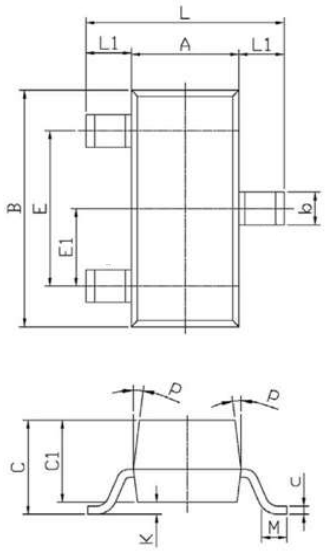
Mechanical Data

- Package : SOT-23
- 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

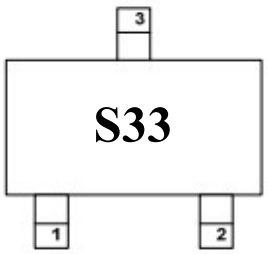
- Cellular Handsets and Accessories
- Notebooks and Handhelds
- Portable Instrumentation
- Set Top Box
- Industrial Controls
- Desktop PC and Servers

SOT-23

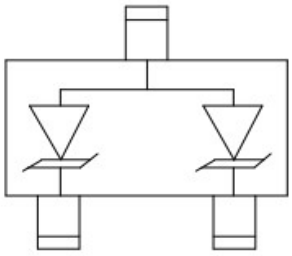


DIM	Unit : mm	
	MIN	MAX
A	1.15	1.50
B	2.70	3.10
b	0.35	0.55
C	-	1.30
C1	0.90	1.20
c	0.05	0.20
E	1.70	2.10
E1	0.85	1.05
K	0	0.10
L	2.20	2.70
L1	0.45	0.65
M	0.20	-
P	7°	

Marking



S33 = 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	240	W
Peak Pulse Current (8/20us)	Ipp	16	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	V_{ESD}	±17 ±20	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}	-	-	3.3	V	
Breakdown Voltage	V_{BR}	3.5	-	-	V	I_T = 2uA
Snap-Back Voltage	V_{SB}	2.8	-	-	uA	I_T = 50mA
Reverse Leakage Current	I_R	-	-	1.0	uA	V_{RWM} = 3.3V
Clamping Voltage	V_C	-	-	6.5	V	I_{PP}=1A(8×20us pulse)
		-	-	15	V	I_{PP}=16A(8×20us pulse)
Junction Capacitance(Pin 1,2 to 3)	C_J	-	-	25	pF	f=1MHz, V_R=0V
Junction Capacitance(Pin 1 to 2)		-	-	18	pF	f=1MHz, V_R=0V

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

Fig.1 Power Derating Curve

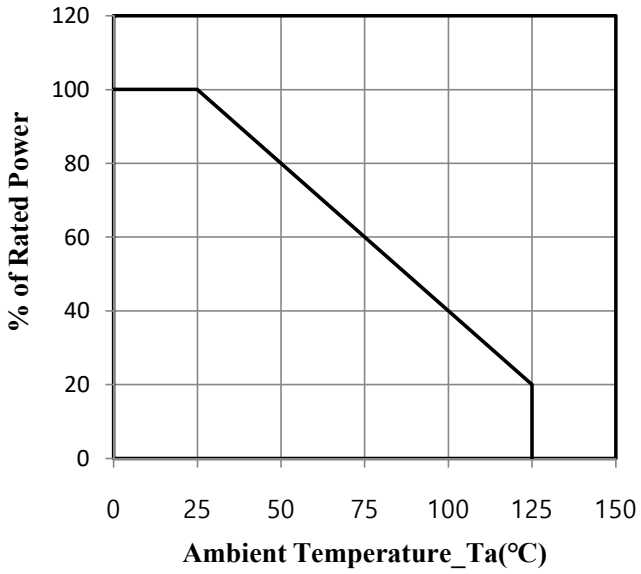


Fig.2 Peak Pulse Power vs. Pulse Time

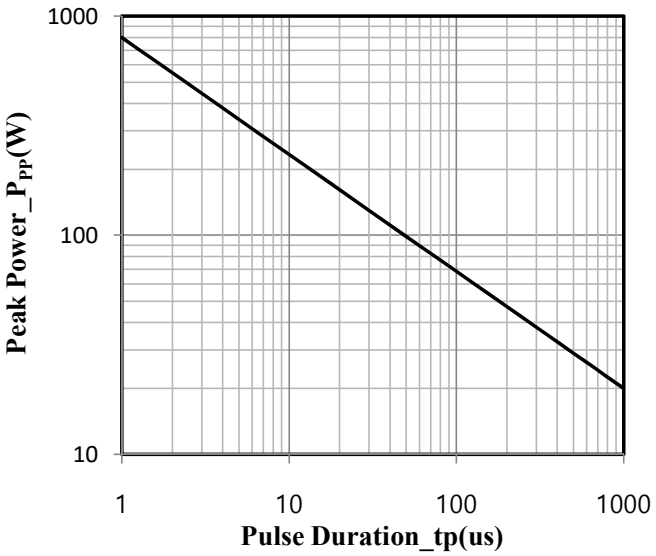


Fig.3 8 × 20us Pulse Waveform

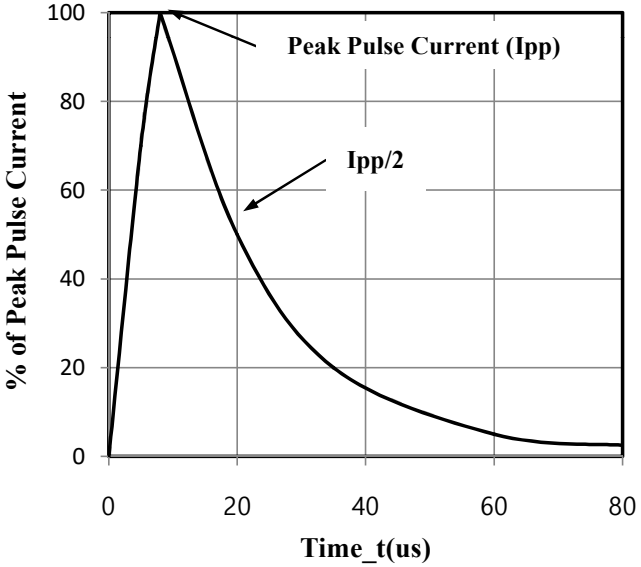


Fig.4 Clamping Voltage vs. Peak Pulse Current (tp=8/20us)

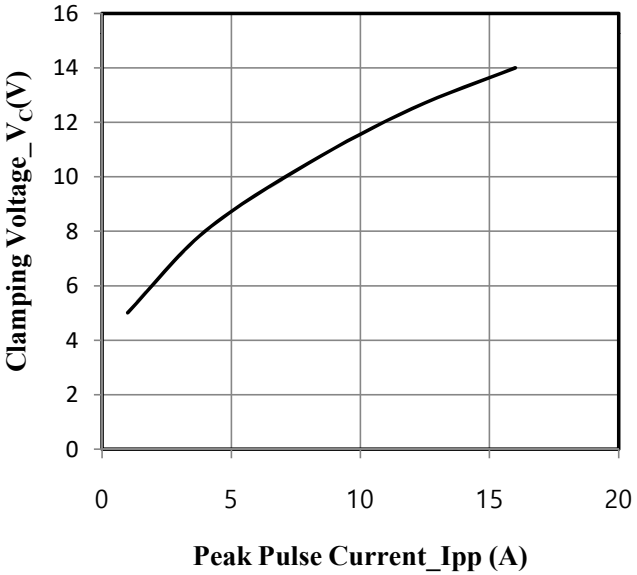


Fig.5 Junction Capacitance vs. Reverse Voltage

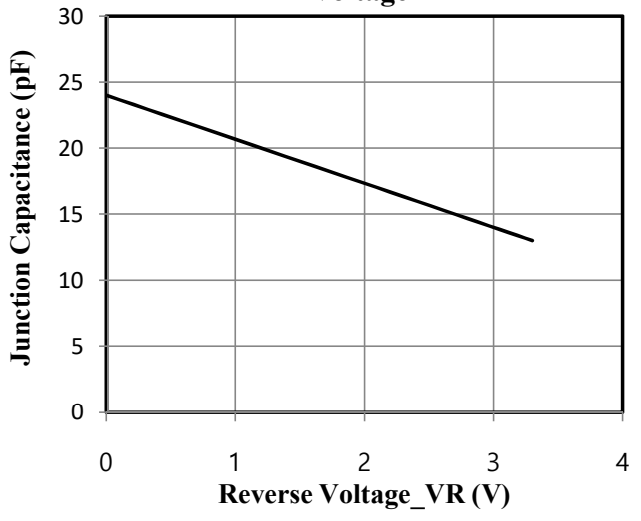


Fig. 6 ESD Clamping Voltage 8kV Contact per IEC61000-4-2