

2-Line Low Capacitance Bi-directional ESD DIODE

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Features

- Low operating voltage: 12V
- Ultra low capacitance: 0.8pF (Max)
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 25\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- -IEC61000-4-5 (Lightning) 4A (8/20 μs)
- 3-pin leadless package
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

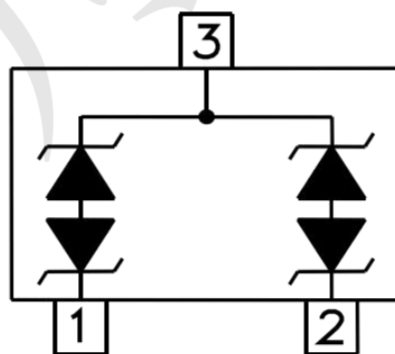
Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- Terminal Connections: See Diagram Below
- -IEC 61000-4-2 (ESD) immunity test

Applications

- Cellular Handsets and Accessories
- Personal Digital Assistants
- Notebooks and Handhelds
- Portable Instrumentation
- USB power and data line

Dimensions and Pin Configuration



SOT-23

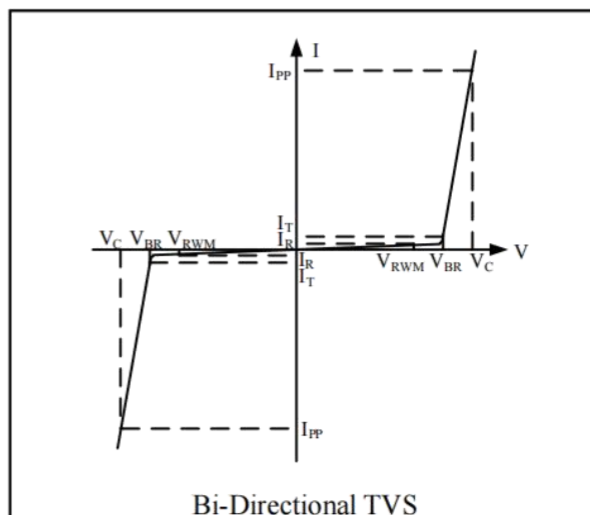
Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	100	W
Peak Pulse Current (8/20μs)	Ipp	4	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±25	KV
Operating Temperature Range	TJ	-55 to +125	°C
Storage Temperature Range	Tstg	-55 to +150	°C

Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	12	V	
Breakdown Voltage	VBR	13	--	--	V	IT= 1mA
Reverse Leakage Current	IR	--	--	200	nA	VRWM=12V
Clamping Voltage	VC	--	--	17	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	--	23	V	Ipp=4A(8x 20us pulse)
Junction Capacitance	CJ	--	--	0.3	pF	VR =0V, f =1MHz, Pin1 to Pin2
Junction Capacitance	CJ	--	--	0.8	pF	VR =0V, f =1MHz, Pin1,2 to Pin3

Symbol	Parameter
V _{RWM}	Nominal Reverse Working Voltage
I _R	Reverse Leakage Current @ V _{RWM}
V _{BR}	Reverse Breakdown Voltage @ I _T
I _T	Test Current for Reverse Breakdown
V _C	Clamping Voltage @ I _{PP}
I _{PP}	Maximum Peak Pulse Current
C _{ESD}	Parasitic Capacitance
V _R	Reverse Voltage
f	Small Signal Frequency



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Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

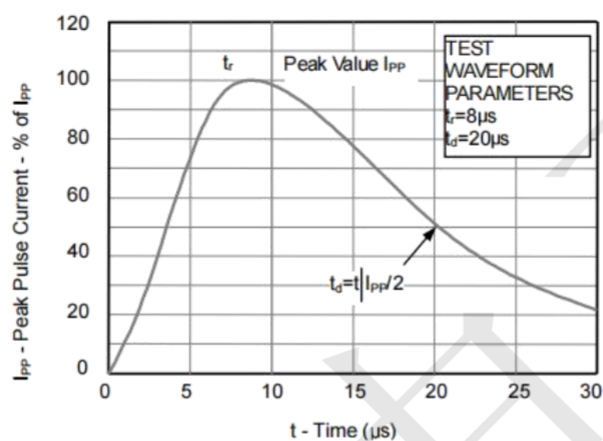


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

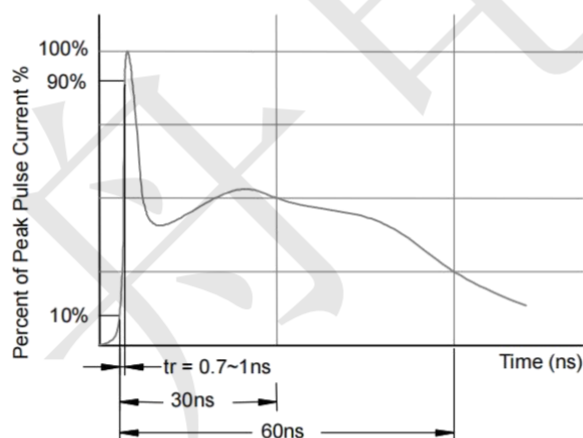
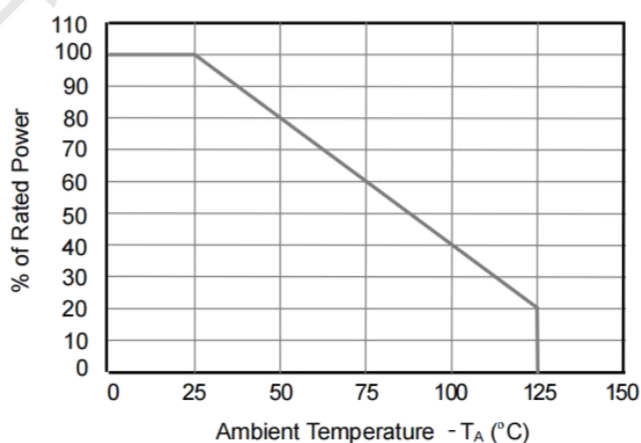
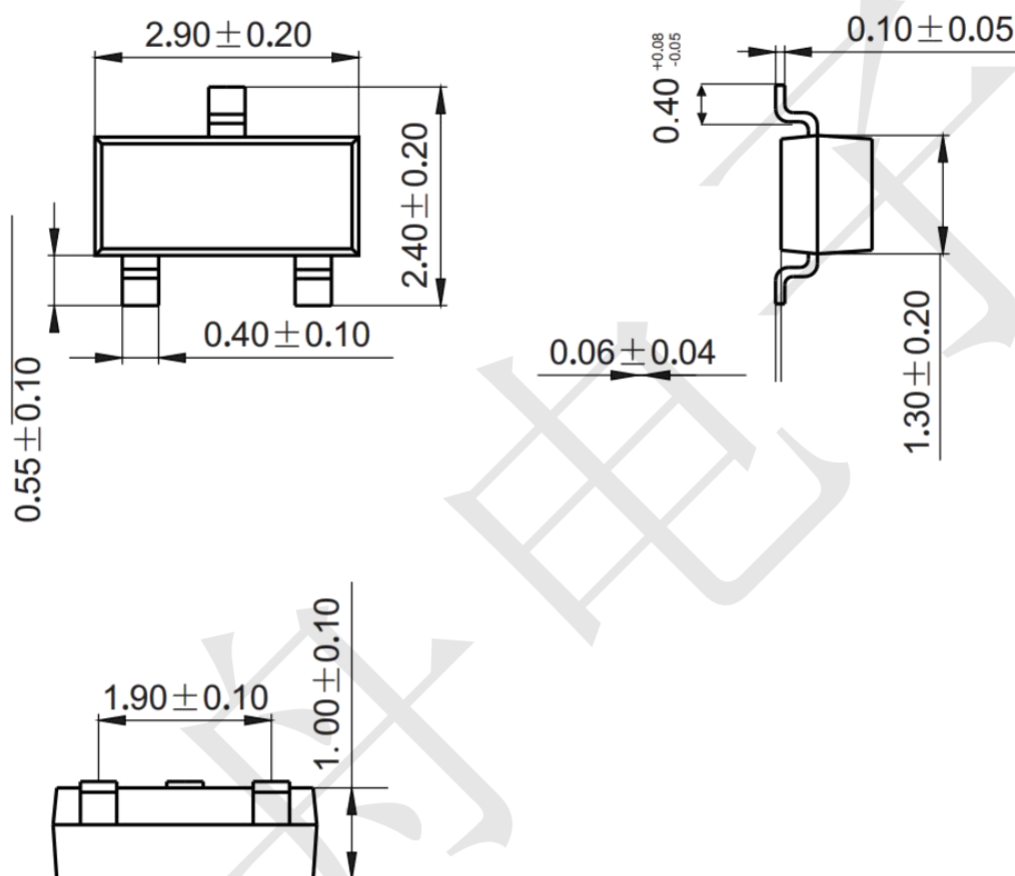


Fig3. Power Derating Curve



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

