

Features

- Low operating voltage: 24V
- Ultra low capacitance: 1pF
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test
Air discharge: $\pm 30\text{kV}$
Contact discharge: $\pm 30\text{kV}$
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- 3-pin leadless package
- These are Pb-Free Devices
- Response Time is Typically $< 1\text{ ns}$

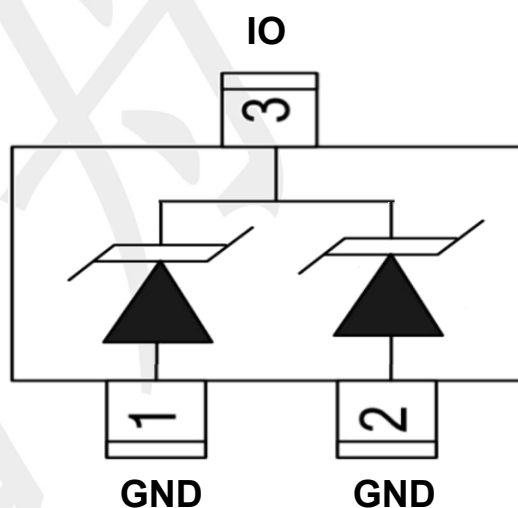
Mechanical Characteristics

- 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

- Industrial sensors
- PLC I/O modules
- Controller area network (CAN)
- 24-V power lines or digital inputs or output lines

Dimensions and Pin Configuration



SOT-23

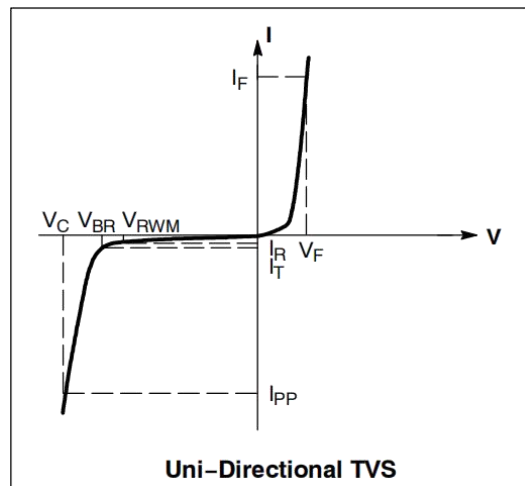
Absolute Maximum Ratings (T_{amb}=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P _{pk}	1800	W
Peak Pulse Current (8/20μs)	I _{pp}	30	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±30	KV
Operating Temperature Range	T _J	-55 to +125	°C
Storage Temperature Range	T _{stg}	-55 to +150	°C

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

Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	VRWM	--	--	24	V	
Breakdown Voltage	VBR	26	--	--	V	I _T = 1mA
Reverse Leakage Current	I _R	--	--	0.1	uA	VRWM=24V
Forward Voltage	V _F	--	0.7	1.2	V	I _F = 1mA
Clamping Voltage	V _C	--	36	--	V	I _{pp} =1A(8x 20us pulse)
Clamping Voltage	V _C	--	42	60	V	I _{pp} =30A(8x 20us pulse)
Junction Capacitance	C _J	--	--	1	pF	V _R = 0V, f = 1MHz, Pin3 to Pin1,2

Symbol	Parameter
I _{pp}	Maximum Reverse Peak Pulse Current
V _C	Clamping Voltage @ I _{pp}
V _{RWM}	Working Peak Reverse Voltage
I _R	Maximum Reverse Leakage Current @ V _{RWM}
V _{BR}	Breakdown Voltage @ I _T
I _T	Test Current
I _F	Forward Current
V _F	Forward Voltage @ I _F
P _{pk}	Peak Power Dissipation
C	Capacitance @ V _R = 0 and f = 1.0 MHz



Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

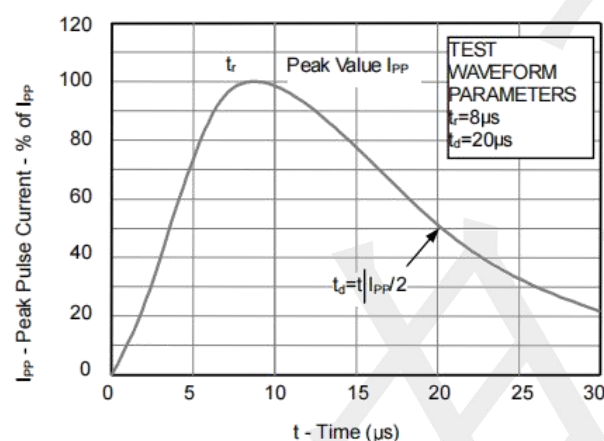


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

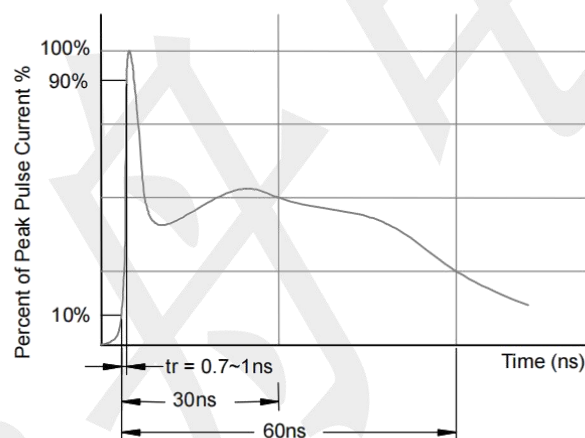
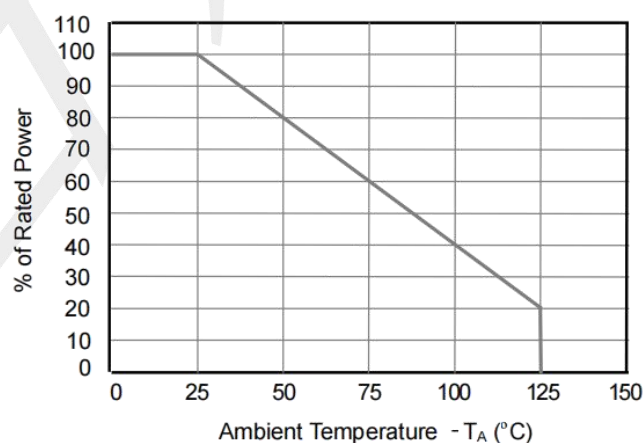
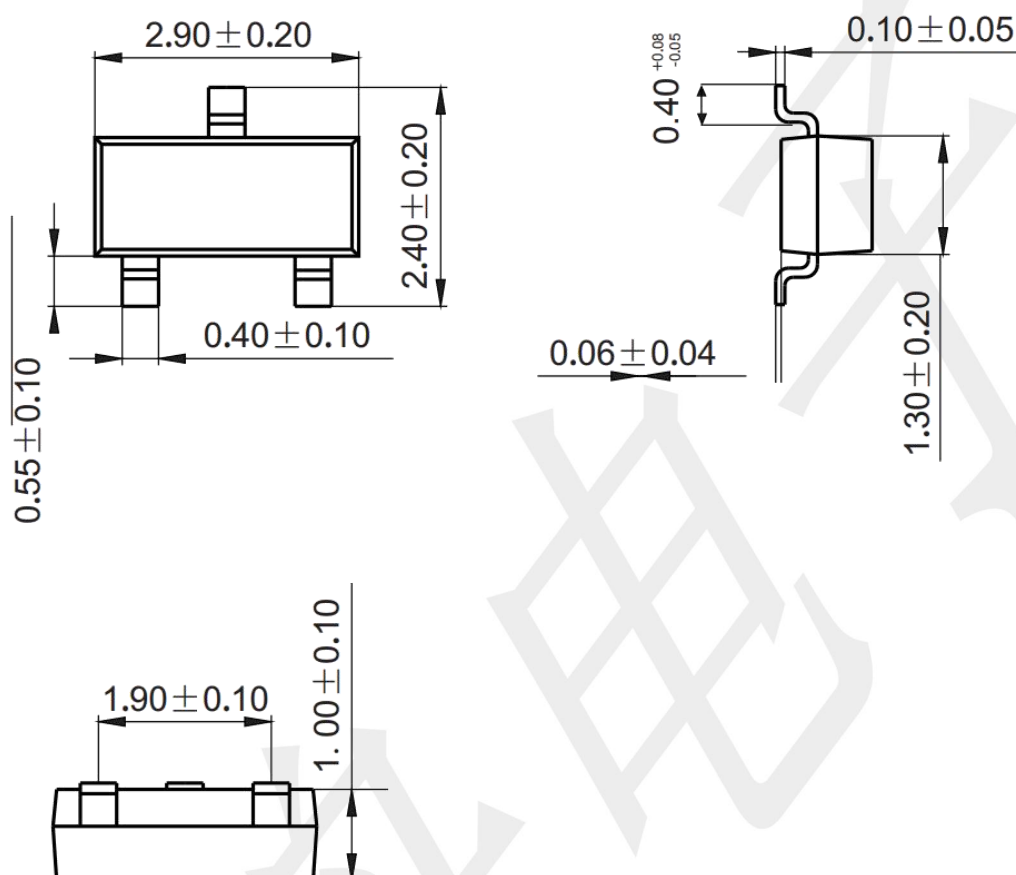


Fig3. Power Derating Curve



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

