

Features

- Low operating voltage: 24V
- Peak Pulse Power (8/20 μ s):800W
- Ultra low leakage: nA level
- Low clamping voltage
- -IEC 61000-4-2 (ESD) immunity test
Air discharge: ± 30 kV
Contact discharge: ± 30 kV
- -IEC61000-4-4 (EFT) 40A (5/50ns)
- 3-pin leadless package
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

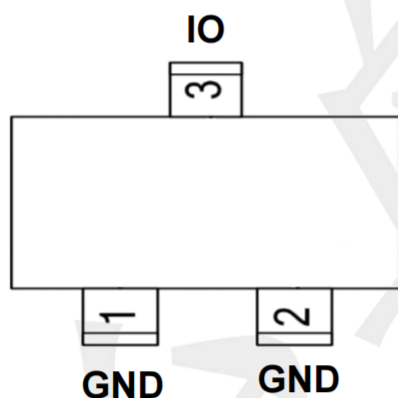
Mechanical Characteristics

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

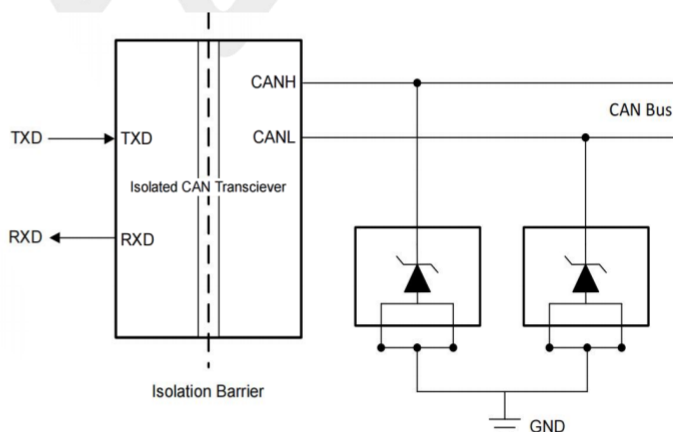
Applications

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

Pin configuration



Functional Block Diagram



Pin function

Pin Number	Pin Name	Pin Function
1,2	GND	Connect to ground. To achieve the rated performance, connect pin 1 and 2 together on the PCB as close to the device as possible
3	IO	Surge and ESD protected IO

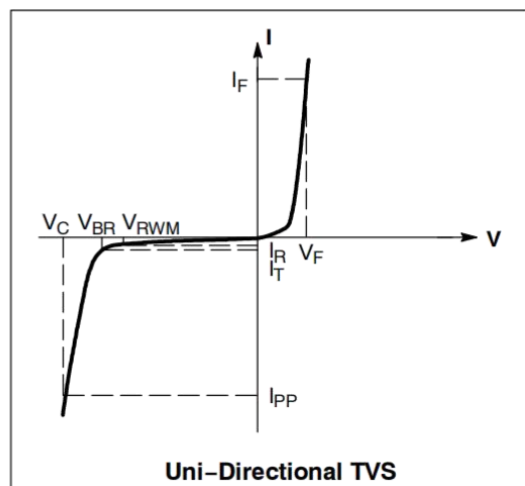
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	800	W
Peak Pulse Current (8/20μs)	Ipp	16	A
ESD per IEC 61000-4-2 (Air) ESD per IEC 61000-4-2 (Contact)	VESD	±30 ±30	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	--	--	24	V	
Breakdown Voltage	VBR	26.5	--	--	V	IT= 1mA
Reverse Leakage Current	IR	--	--	0.2	uA	VRWM=24V
Forward Voltage	VF	--	0.7	1.2	V	IF = 1mA
Clamping Voltage	VC	--	35	--	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	40	46	V	Ipp=16A(8x 20us pulse)
Junction Capacitance	CJ	--	--	38	pF	VR = 0V, f = 1MHz, Pin1,2 to Pin3

Symbol	Parameter
Ipp	Maximum Reverse Peak Pulse Current
VC	Clamping Voltage @ Ipp
VRWM	Working Peak Reverse Voltage
IR	Maximum Reverse Leakage Current @ VRWM
VBR	Breakdown Voltage @ IT
IT	Test Current
IF	Forward Current
VF	Forward Voltage @ IF
Ppk	Peak Power Dissipation
C	Capacitance @ VR = 0 and f = 1.0 MHz



Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

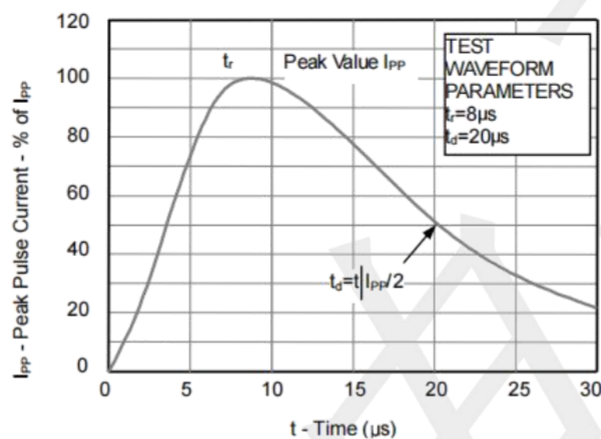


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

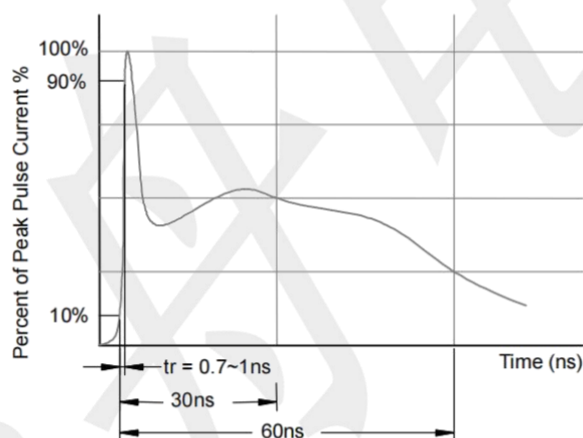
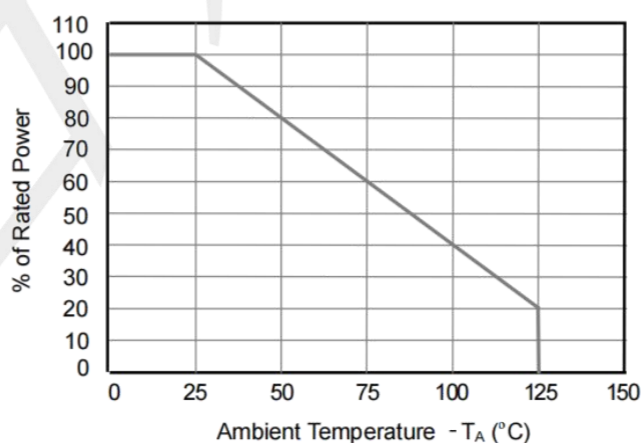
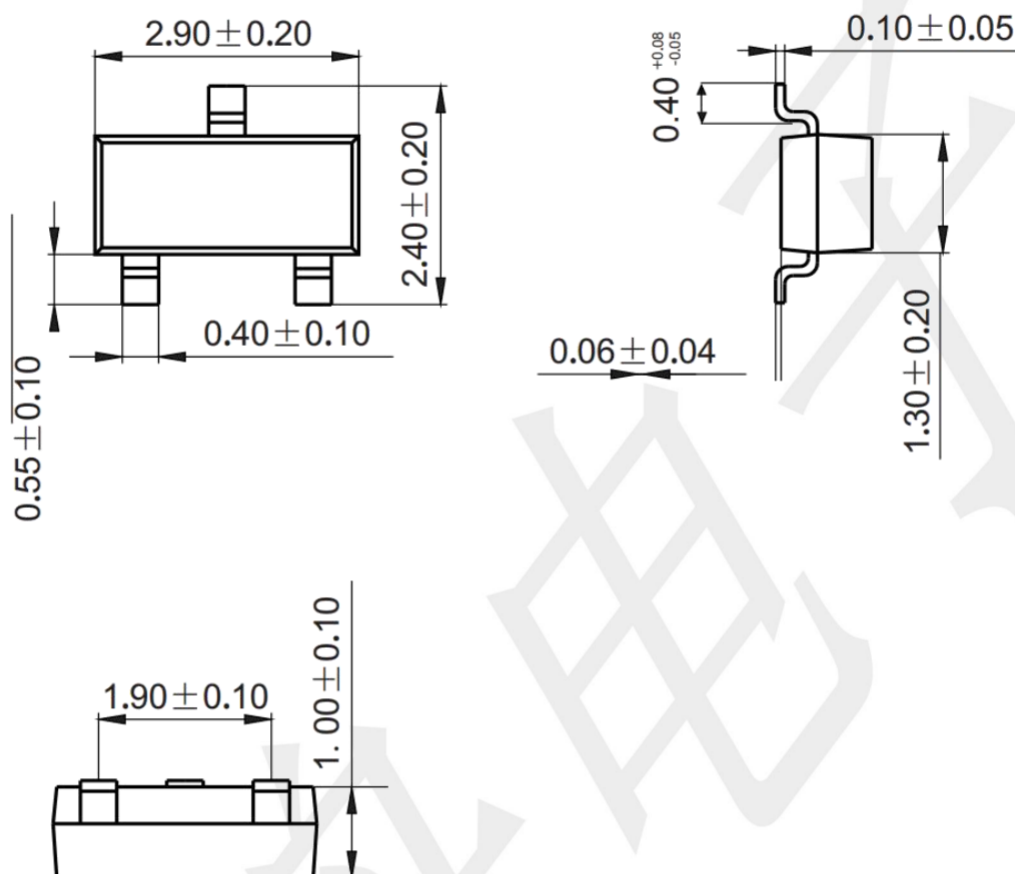


Fig3. Power Derating Curve



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

