

Features

- Low operating voltage: 24V
- Peak Pulse Power (8/20 μ s):1500W
- 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

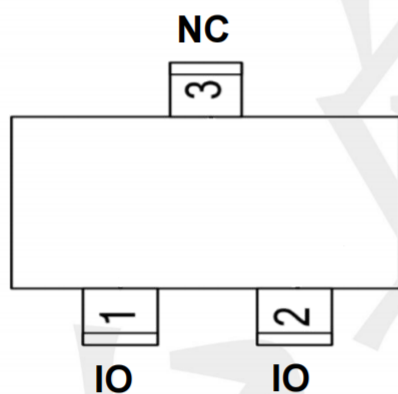
Mechanical Characteristics

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

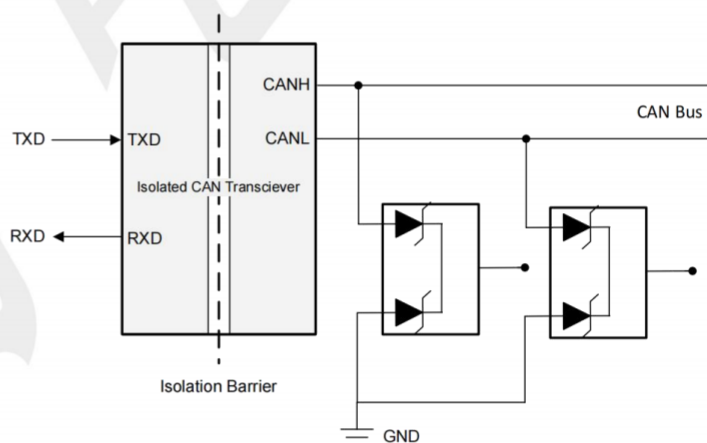
Applications

- 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	IO	Provide IO with surge protection and ESD protection. Ground the other pin.
3	NC	Leave this pin floating to achieve optimal performance.

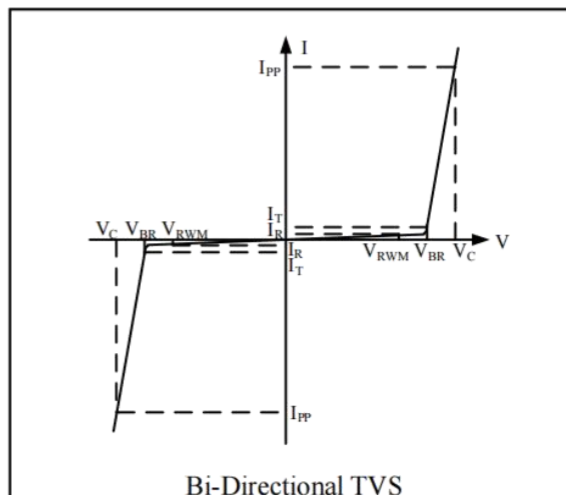
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	1500	W
Peak Pulse Current (8/20μs)	Ipp	30	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	--	--	V	IT= 1mA
Reverse Leakage Current	IR	--	--	0.2	uA	VRWM=24V
Clamping Voltage	VC	--	35	--	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	40	50	V	Ipp=30A(8x 20us pulse)
Junction Capacitance	CJ	--	--	12	pF	VR =0V, f =1MHz, Pin1 to Pin2 or Pin2 to Pin1

Symbol	Parameter
VRWM	Nominal Reverse Working Voltage
IR	Reverse Leakage Current @ VRWM
VBR	Reverse Breakdown Voltage @ IT
IT	Test Current for Reverse Breakdown
VC	Clamping Voltage @ Ipp
Ipp	Maximum Peak Pulse Current
CESD	Parasitic Capacitance
VR	Reverse Voltage
f	Small Signal Frequency



Characteristic Curves

Fig1. 8/20 μ s Pulse Waveform

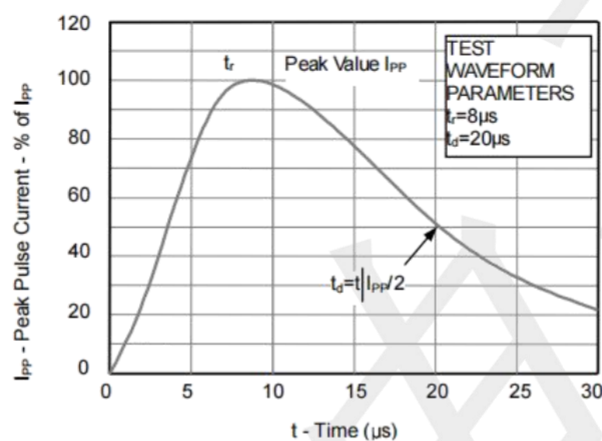


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

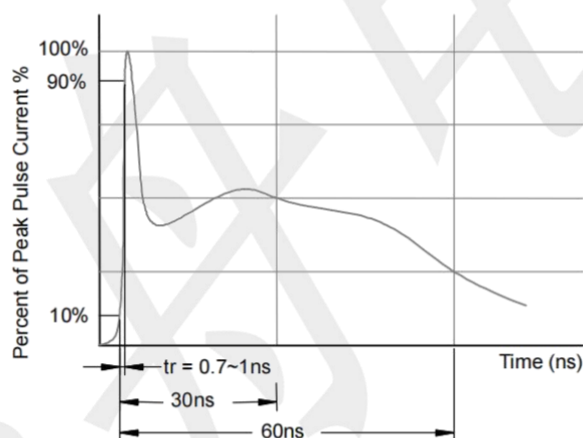
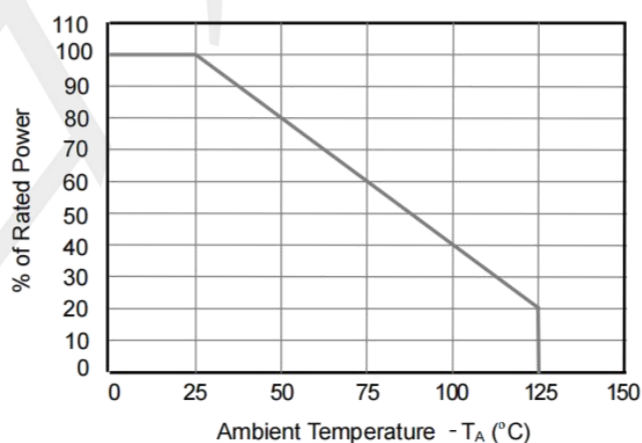
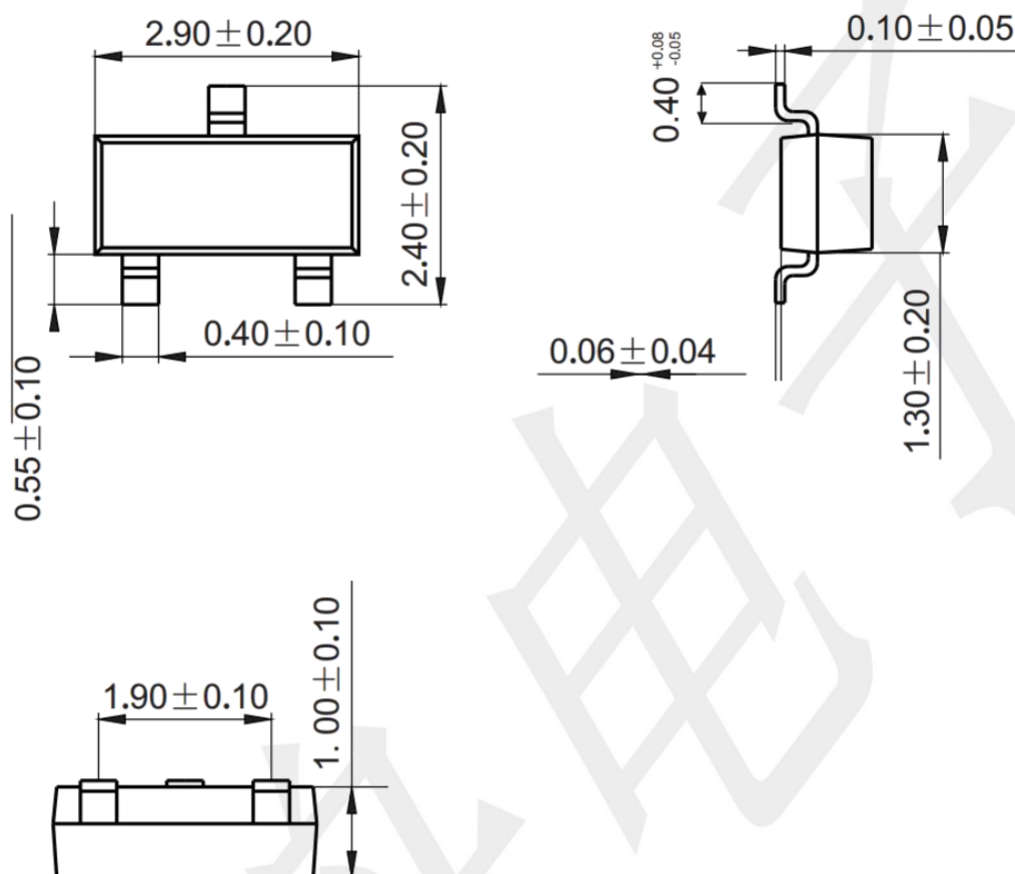


Fig3. Power Derating Curve



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

