

TPAQ27COM-02HTG

2-Line Bi-directional ESD DIODE

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Features

- Low operating voltage: 27V
- Ultra low capacitance: 10pF(Typ)
- 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)
- -IEC61000-4-5 (Lightning) 5A (8/20 μs)
- 3-pin leadless package
- These are Pb-Free Devices
- Response Time is Typically < 1 ns

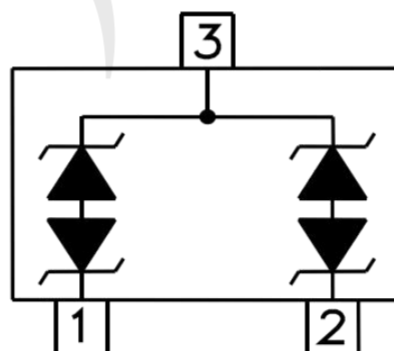
Mechanical Characteristics

- 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

- Video Line Protection
- Base Stations I2C Bus Protection
- T1/E1 Secondary IC Protection
- T3/E3 Secondary IC Protection
- HD SL ID SL Secondary IC Protection

Dimensions and Pin Configuration



SOT-23

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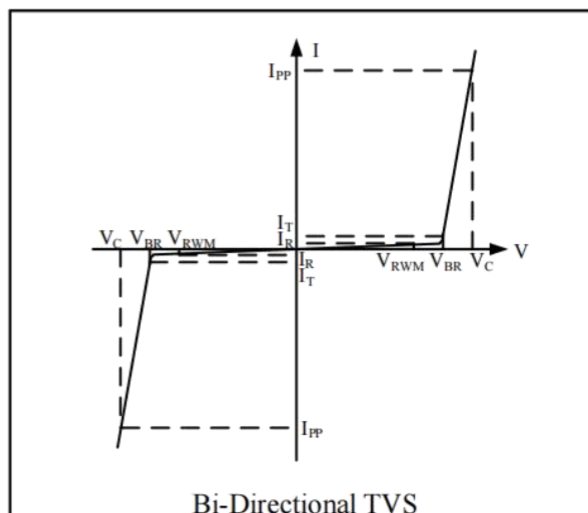
Absolute Maximum Ratings (Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	250	W
Peak Pulse Current (8/20μs)	Ipp	5	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	--	--	27	V	
Breakdown Voltage	VBR	30	--	--	V	IT= 1mA
Reverse Leakage Current	IR	--	--	0.1	uA	VRWM=27V
Clamping Voltage	VC	--	40	--	V	Ipp=1A(8x 20us pulse)
Clamping Voltage	VC	--	--	50	V	Ipp=5A(8x 20us pulse)
Junction Capacitance	CJ	--	15	25	pF	VR =0V, f =1MHz, Pin1,2 to Pin3
Junction Capacitance	CJ	--	11	20	pF	VR =0V, f =1MHz, Pin1 to Pin2

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

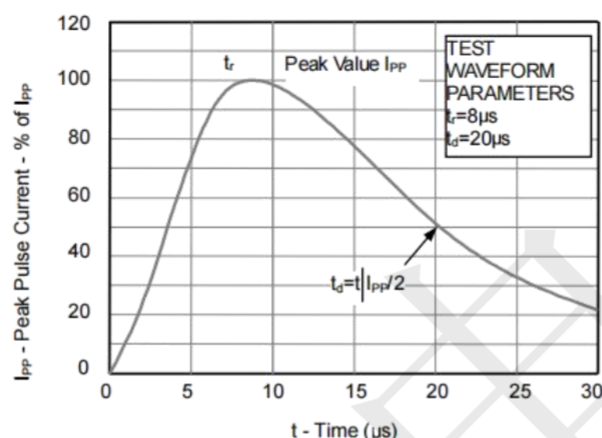


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

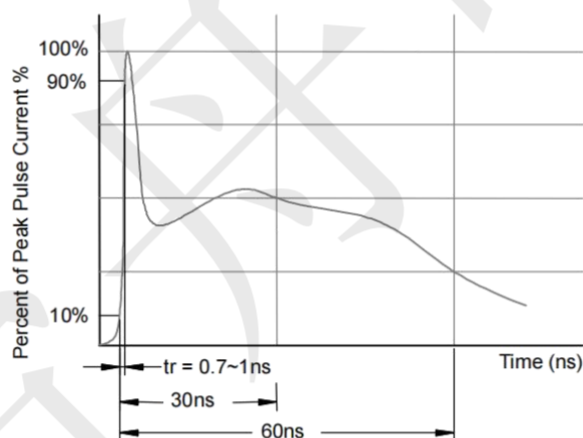
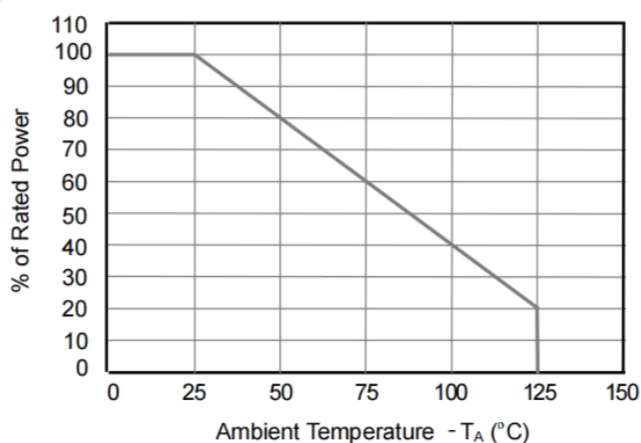
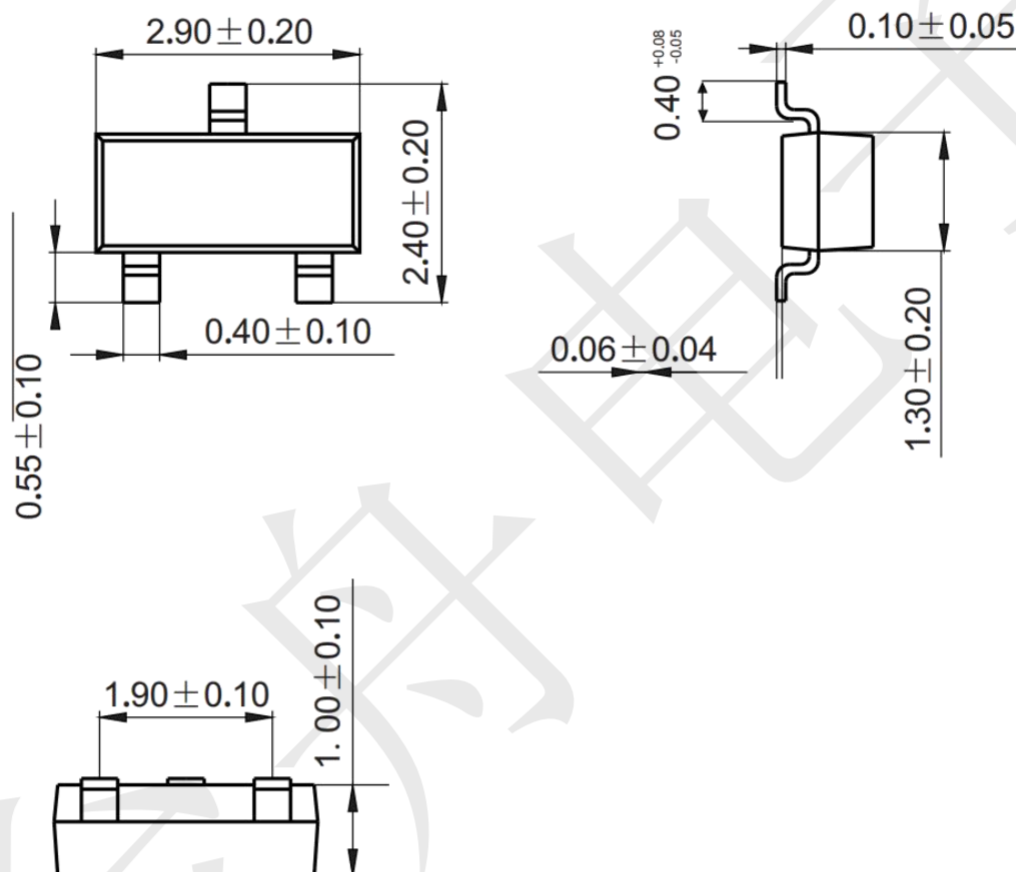


Fig3. Power Derating Curve



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

