Trustworthy electronic circuit protection expert

ESD24VAP

Description

ESD24VAP is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.

Features

● Ultra low leakage

● Operating voltage: 24V

● Package: SOT-23

● Protects one bidirectional line or two unidirectional

● Low clamping voltage

● Complies with following standards:

– IEC 61000-4-2 (ESD) immunity test

Air discharge: ±15kV

Contact discharge: ±8kV

– IEC61000-4-4 (EFT) 40A (5/50ns)

– IEC61000-4-5 (Lightning) 5A (8/20μs)
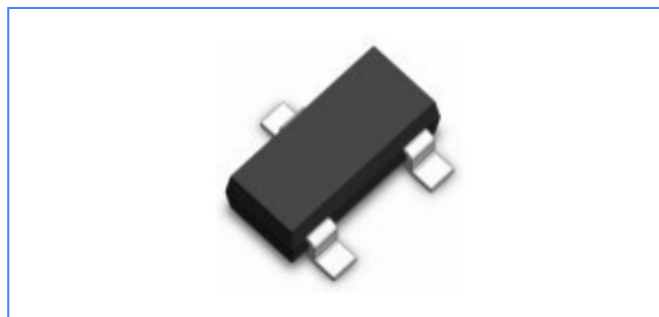
Functional Diagram
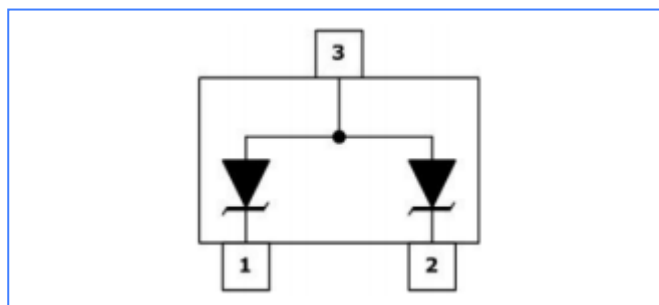
Applications

● Portable Electronics

● Cellular Handsets and Accessories

● Industrial Controls
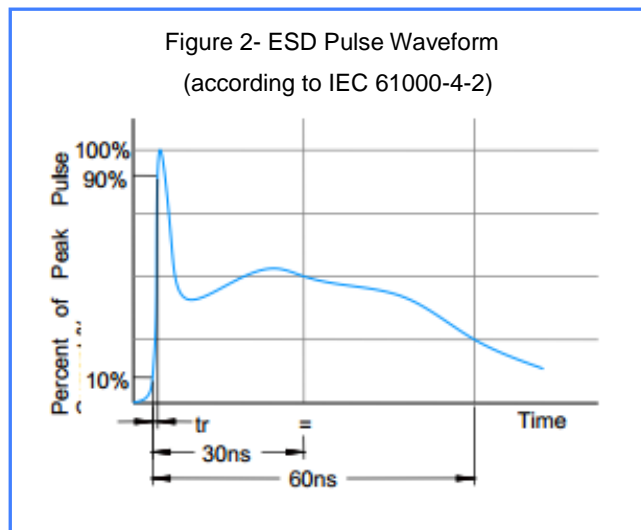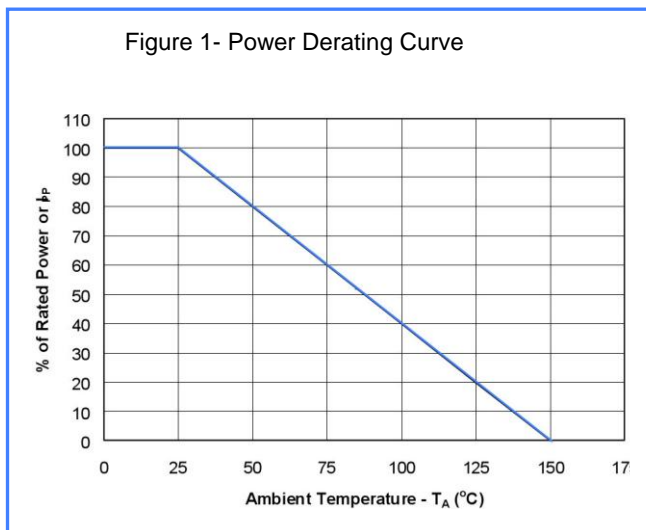
● Portable instrumentation

● Set-Top Box

● Peripherals

Absolute Maximum Ratings(Tamb=25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PP}	300	Watts
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±15	KV
ESD per IEC 61000−4−2 (Contact)		±8	KV
Lead Soldering Temperature	TL	260 (10 sec)	°C
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STJ}	-55 to +150	°C

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Electrical Characteristics (TA = 25 ℃ unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	VRWM				24	V
Reverse Breakdown Voltage	VBR	It = 1mA	26.7			V
Reverse Leakage Current	IR	VR =VRWM			1	μA
Clamping Voltage	VC	@1A			43	V
Clamping Voltage	VC	@3A			49	V
Junction Capacitance	CJ	VR=0V, f = 1MHz		88		pF

Characteristics Curves

Figure 1- Power Derating Curve

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

Figure3- 8/20µs Pulse Waveform

Waveform
Parameters:
tr = 8µs
td = 20µs

e^{-t}

$td = I_{PP}/2$

Percent of I_{PP}

Time (µs)
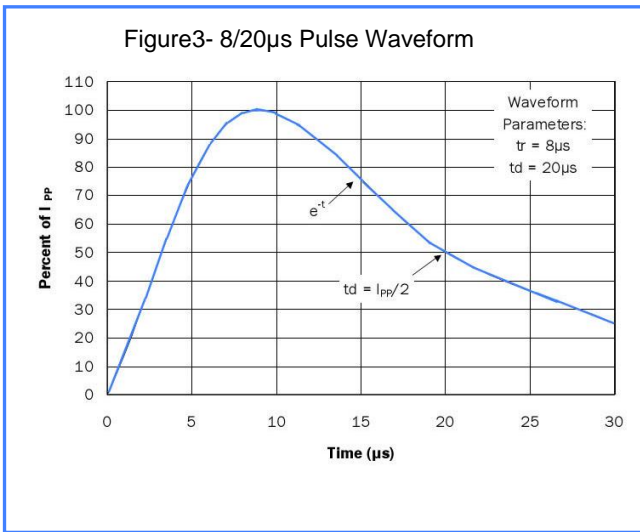
ACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOT-23

3.1 (0.122)
2.8 (0.110)
0.1 (0.004) max.

0.45 (0.018)
0.35 (0.014)

0.45 (0.018)
0.35 (0.014)

0.45 (0.018)
0.35 (0.014)

1.43 (0.056)
1.20 (0.047)

1 (0.039)
0.9 (0.035)

1 (0.039)
0.9 (0.035)

0.550 ref. (0.022 ref.)

0.175 (0.007)
0.098 (0.004)

0.2 (0.008)

1.15 (0.045)
0.9 (0.035)

0.5 (0.020)
0.3 (0.012)

2.6 (0.102)
2.35 (0.093)

0° to 8°

0.7 (0.028)

2 (0.079)

0.9 (0.035)

0.95 (0.037)

0.95 (0.037)
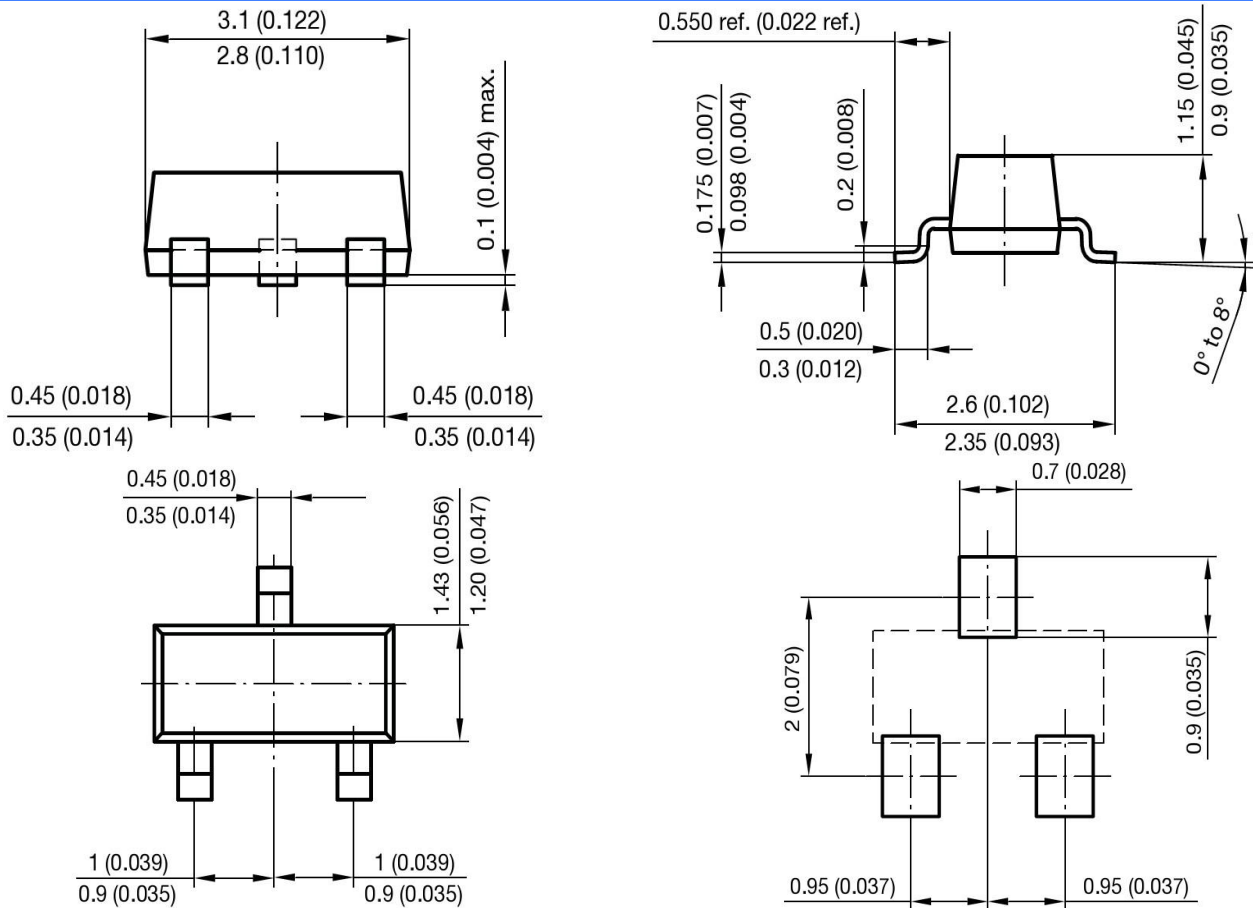
Mounting Pad Layout

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.