

## Features

- Ultra low leakage: nA level
- Operating voltage: 12V
- Low clamping voltage
- Complies with following standards:
  - 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) 20A (8/20 $\mu\text{s}$ )
- RoHS Compliant

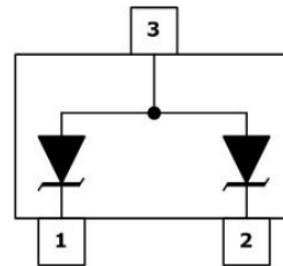
## Dimensions SOT-23



## Applications

- Cell Phone Handsets and Accessories
- Microprocessor based equipment
- Personal Digital Assistants (PDA's)
- Notebooks, Desktops, and Servers
- Portable Instrumentation
- Networking and Telecom
- Serial and Parallel Ports.
- Peripherals

## Pin Configuration



## Mechanical Characteristics

- Package: SOT-23
- Lead Finish: Lead Free
- UL Flammability Classification Rating 94V-0
- Quantity Per Reel: 3,000 pcs
- Reel Size: 7 inch
- Device Marking: M12

## Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20 $\mu\text{s}$ )	P <sub>pp</sub>	650	W
ESD per IEC 61000-4-2 (Air)	V <sub>ESD</sub>	$\pm 30$	Kv
ESD per IEC 61000-4-2 (Contact)		$\pm 30$	
Operating Temperature Range	T <sub>J</sub>	-55 to +125	°C
Storage Temperature Range	T <sub>STJ</sub>	-55 to +150	°C

## Electrical Characteristics (TA=25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Reverse Working Voltage	$V_{RWM}$				12	V
Breakdown Voltage	$V_{BR}$	$I_T = 1mA$	13.3			V
Reverse Leakage Current	$I_R$	$V_{RWM} = 12V$			1	$\mu A$
Clamping Voltage	$V_C$	$I_{PP} = 1A$ (8 x 20 $\mu s$ pulse)			19	V
Clamping Voltage	$V_C$	$I_{PP} = 20A$ (8 x 20 $\mu s$ pulse)			32	V
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		55		pF

## Characteristic Curves

Fig1. 8/20 $\mu s$  Pulse Waveform

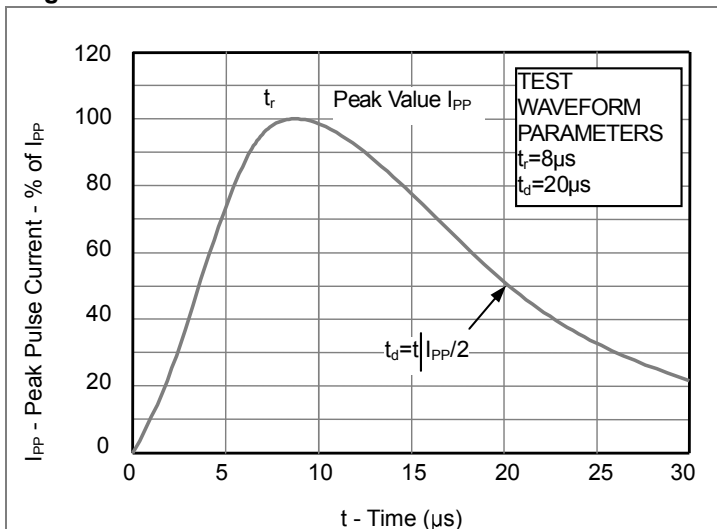


Fig2. ESD Pulse Waveform (according to IEC 61000-4-2)

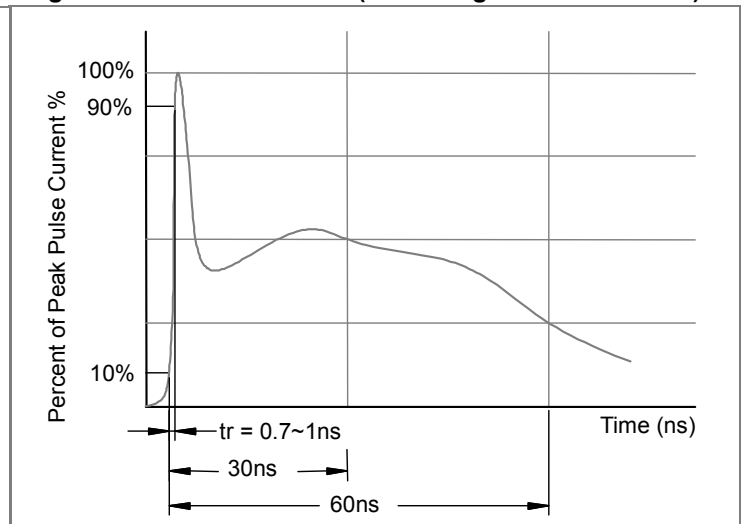
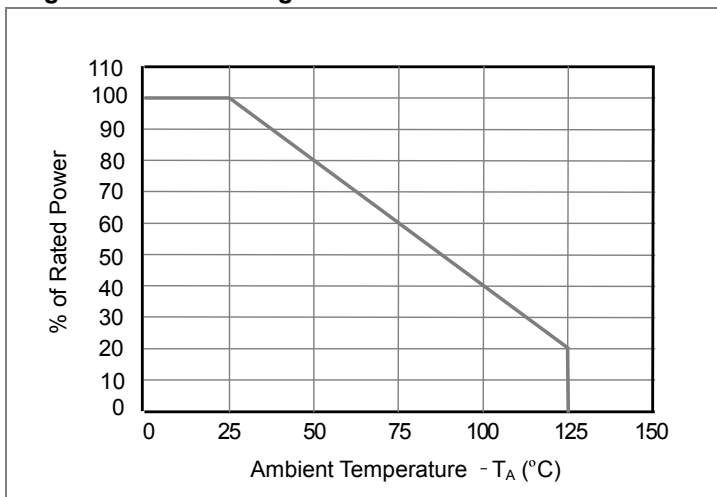
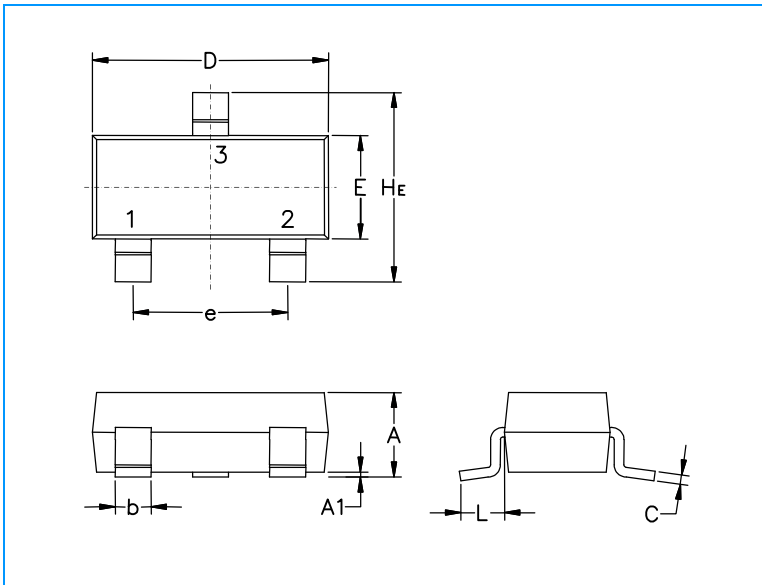


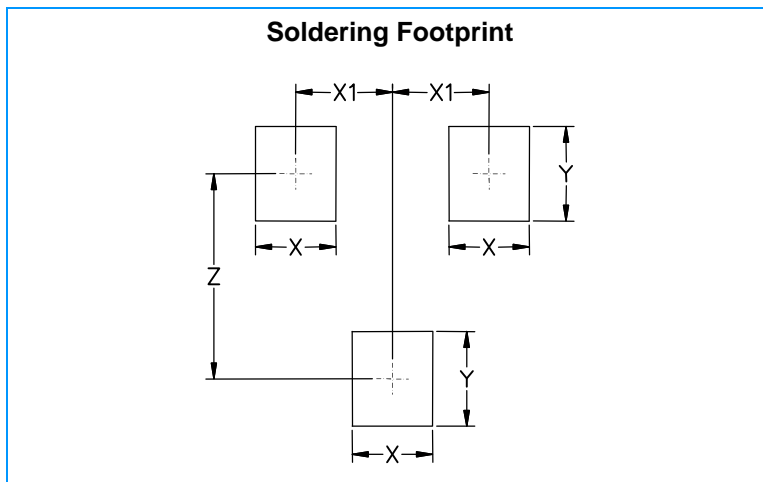
Fig3. Power Derating Curve



## SOT-23 Package Outline & Dimensions



Symbol	Millimeters			Inches		
	Min.	Nom.	Max.	Min.	Nom.	Max.
<b>A</b>	0.89	1.00	1.11	0.035	0.040	0.044
<b>A1</b>	0.01	0.06	0.10	0.001	0.002	0.004
<b>b</b>	0.37	0.44	0.50	0.15	0.18	0.020
<b>c</b>	0.09	0.13	0.18	0.003	0.005	0.007
<b>D</b>	2.80	2.90	3.04	0.110	0.114	0.120
<b>E</b>	1.20	1.30	1.40	0.047	0.051	0.055
<b>e</b>	1.78	1.90	2.04	0.070	0.075	0.081
<b>L</b>	0.35	0.54	0.69	0.014	0.021	0.029
<b>HE</b>	2.10	2.40	2.64	0.083	0.094	0.104



Symbol	Millimeters	Inches
<b>X</b>	0.80	0.031
<b>X1</b>	0.95	0.037
<b>Y</b>	0.90	0.035
<b>Z</b>	2.00	0.079