

## FEATURES:

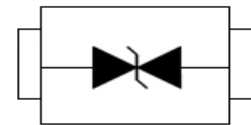
- ✧ Protects one bi-directional I/O line
- ✧ Low clamping voltage
- ✧ Low operating voltage: 5V
- ✧ ROHS compliant



SOD-323

## MAIN APPLICATIONS

- ✧ Cell Phone Handsets and Accessories
- ✧ Personal Digital Assistants (PDA's)
- ✧ Notebooks, Desktops, and Servers
- ✧ Portable Instrumentation
- ✧ Pagers
- ✧ Microprocessor based equipment



PIN Configuration

## PROTECTION SOLUTION TO MEET

- ✧ IEC61000-4-2 (ESD)  $\pm 30\text{kV}$  (air),  $\pm 30\text{kV}$  (contact)
- ✧ IEC61000-4-4 (EFT) 40A (5/50ns)

## MECHANICAL CHARACTERISTICS

- ✧ Package SOD-323
- ✧ Molding Compound Flammability Rating : UL 94V-O
- ✧ Quantity Per Reel : 3,000pcs
- ✧ Lead Finish : Lead Free
- ✧ Marking code: 05B

## ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ , RH=45%-75%, unless otherwise noted)

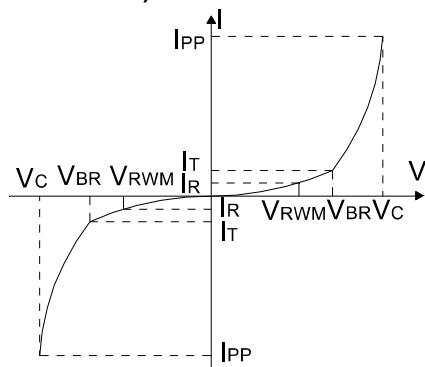
Parameter	Symbol	Value	Unit
Storage temperature range	$T_{stg}$	-55 to +150	$^\circ\text{C}$
Operating junction temperature range	$T_j$	-55 to +125	$^\circ\text{C}$
Lead Soldering Temperature	$T_L$	260 (10 sec.)	$^\circ\text{C}$
Peak pulse power dissipation on 8/20 $\mu\text{s}$ waveform	$P_{PP}$	450	W
ESD per IEC 61000-4-2 (Air)	$V_{ESD}$	+/- 30	kV
ESD per IEC 61000-4-2 (Contact)		+/- 30	

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub>=25°C)

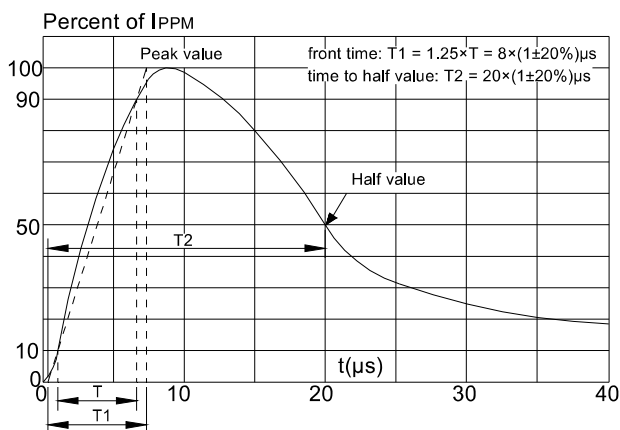
Parameter	Symbol	Conditions	Min	Typ	Max	Units
Reverse Working Voltage	V <sub>R</sub>				5	V
Reverse Breakdown Voltage	V <sub>BR</sub>	I <sub>T</sub> = 1mA	6.0	7.0	8.0	V
Reverse Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 5V			10	μA
Peak Pulse Current	I <sub>pp</sub>	t <sub>p</sub> = 8/20μs			30	A
Clamping Voltage	V <sub>C</sub>	I <sub>PP</sub> = 30A, t <sub>p</sub> = 8/20μs			15	V
Junction Capacitance	C <sub>J</sub>	V <sub>R</sub> = 0V, f = 1MHz		60	100	pF

## RATINGS AND V-I CHARACTERISTICS CURVES (T<sub>A</sub>=25°C, unless otherwise noted)

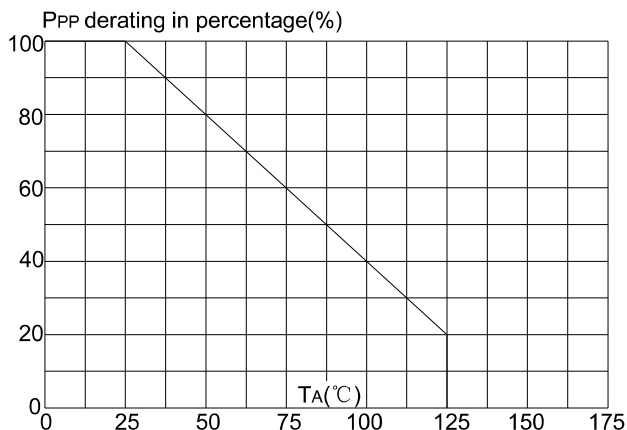
**FIG.1: V- I curve characteristics (Bi-directional)**



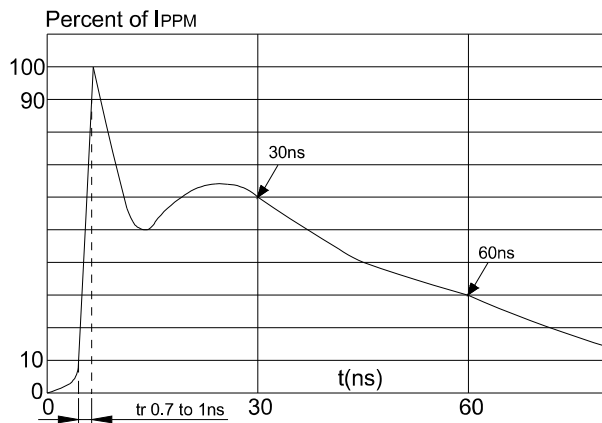
**FIG.2: Pulse waveform (8/20μs)**



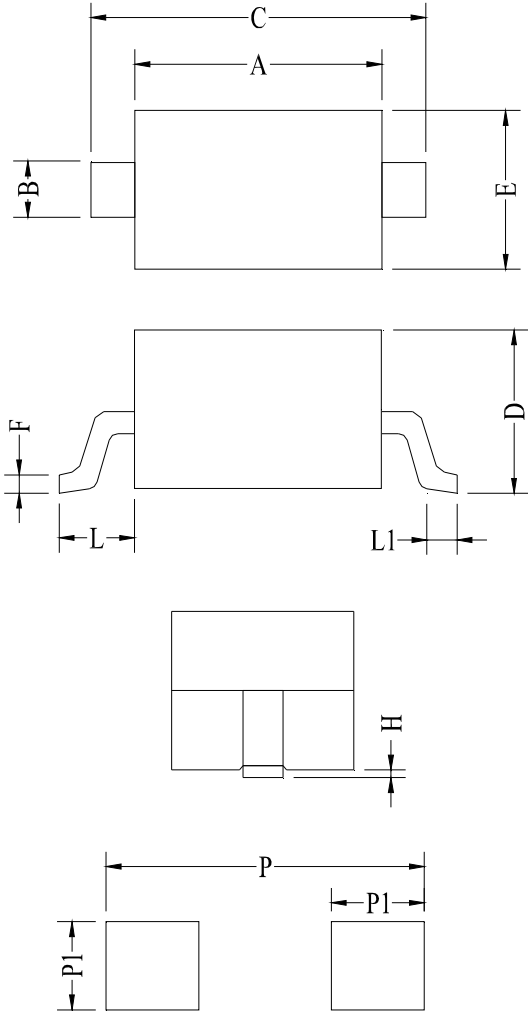
**FIG.3: Pulse derating curve**



**FIG.4: ESD clamping**



**PACKAGE MECHANICAL DATA**

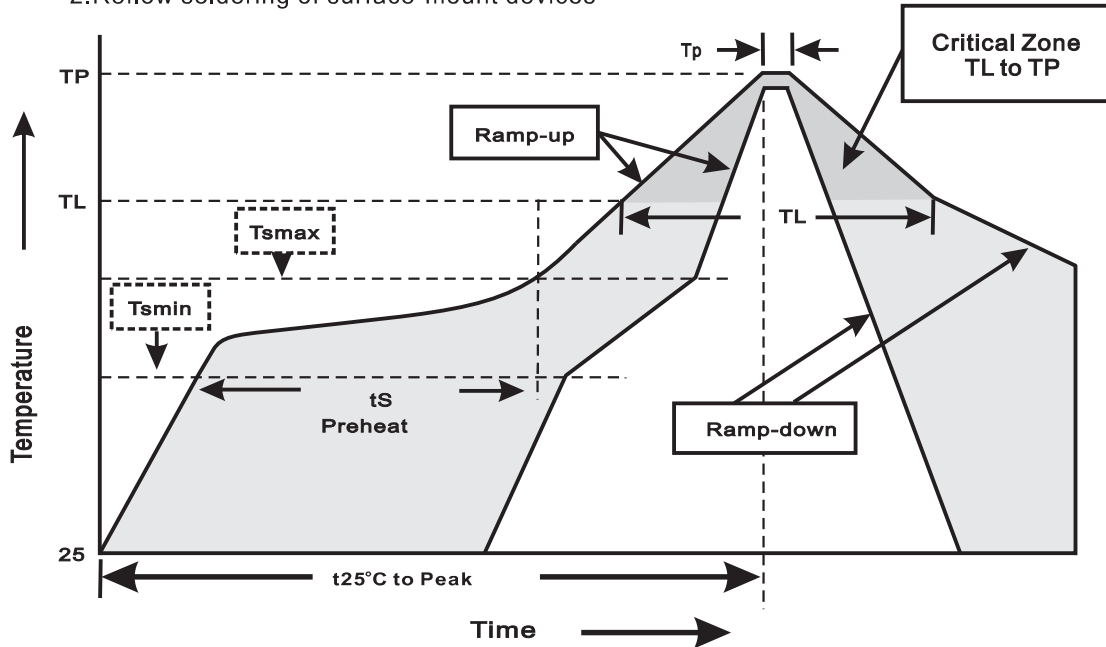


Symbol	Millimeter		Inches	
	Min	Max	Min	Max
A	1.60	1.80	0.063	0.071
B	0.25	0.35	0.010	0.014
C	2.50	2.70	0.098	0.106
D	0.00	1.00	0.000	0.039
E	1.20	1.40	0.047	0.055
F	0.08	0.15	0.003	0.006
L	0.475REF		0.019REF	
L1	0.25	0.40	0.010	0.016
H	0.00	0.10	0.000	0.004
P	3.00		0.118	
P1	0.80		0.031	

**Land Pattern**

**Suggested thermal profiles for soldering processes**

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(TL to TP)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts)	150°C 200°C 60~120sec
Tsmax to TL -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(TL) -Time(tL)	217°C 60~260sec
Peak Temperature(TP)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(tp)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes