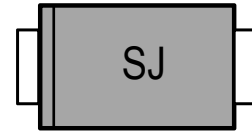


## FEATURES

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

## MECHANICAL DATA

- \* Case: Molded plastic
- \* Lead: Axial leads, solderable per MIL-STD-750, method 2026
- \* Polarity: Polarity symbols marked on case
- \* Marking: SJ



**VOLTAGE RANGE**  
20.0 Volts  
**CURRENT**  
1.0 Ampere

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.  
Single phase half wave, 60Hz, resistive or inductive load.  
For capacitive load, derate current by 20%.

TYPE NUMBER	1N5817WS	UNITS
Maximum Recurrent Peak Reverse Voltage	20	V
Maximum RMS Voltage	14	V
Maximum DC Blocking Voltage	20	V
Maximum Average Forward Rectified Current See Fig. 1	1.0	A
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	25	A
Maximum Instantaneous Forward Voltage at 1.0A	0.45	V
Maximum DC Reverse Current Ta=25°C	0.05	mA
at Rated DC Blocking Voltage Ta=100°C	8	mA
Typical Junction Capacitance (Note1)	30	pF
Typical Thermal Resistance R <sub>JA</sub> (Note 2)	400	°C/W
Operating Temperature Range T <sub>J</sub>	-65 — +125	°C
Storage Temperature Range T <sub>STG</sub>	-65 — +150	°C

**NOTES:**

1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2. Thermal Resistance Junction to Ambient.

RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

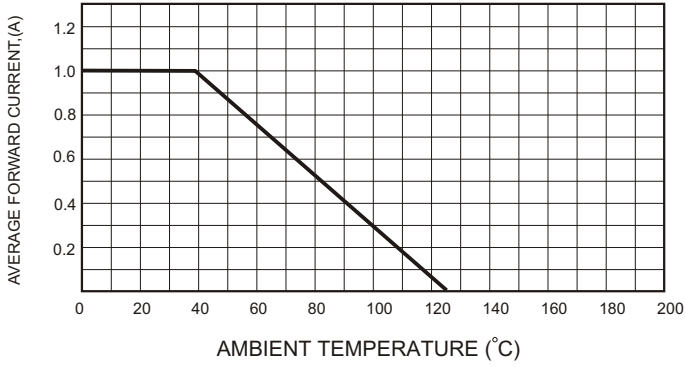


FIG.2-TYPICAL FORWARD

CHARACTERISTICS

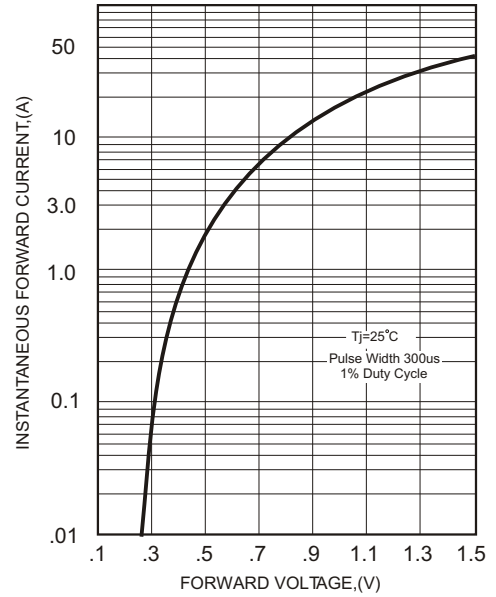


FIG.3 - Power Derating Curve

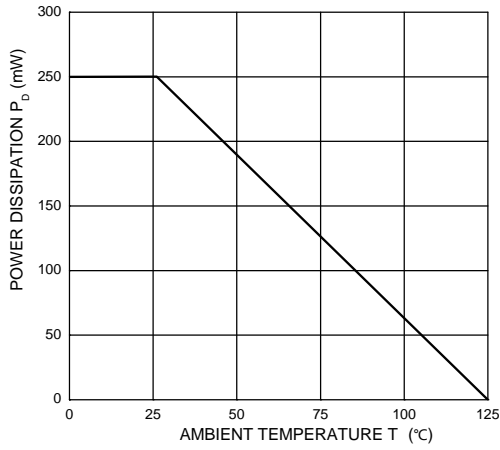


FIG.5 - TYPICAL REVERSE

CHARACTERISTICS

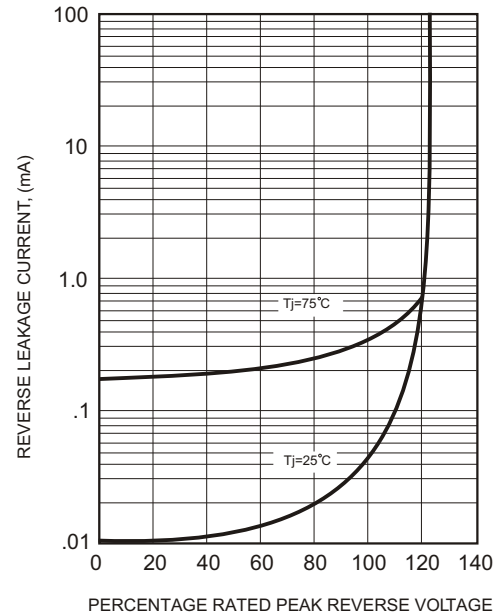
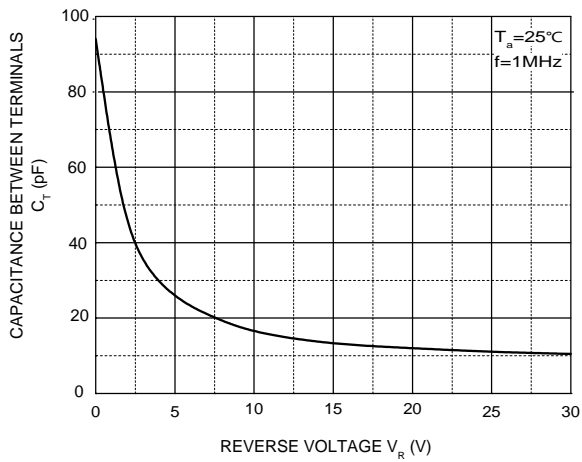


FIG.4-TYPICAL JUNCTION CAPACITANCE



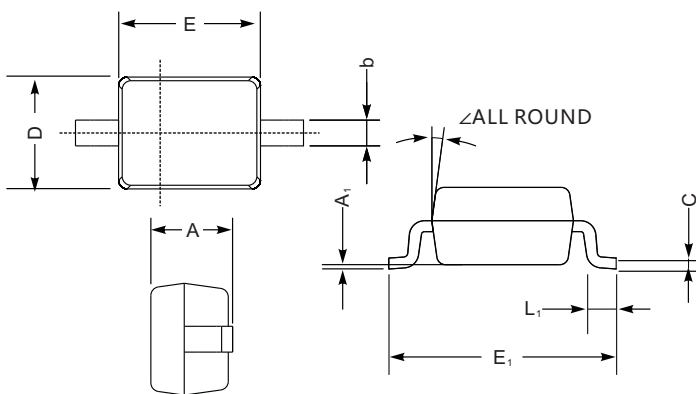
Soldering parameters

Reflow Condition		Pb-Free assembly (see as below)
Pre Heat	-Temperature Min ( $T_{s(min)}$ )	+150°C
	-Temperature Max( $T_{s(max)}$ )	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp ( $T_L$ ) to peak)		3°C/sec. Max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature( $T_L$ )(Liquid us)	+217°C
	-Temperature( $t_L$ )	60-150 secs.
Peak Temp ( $T_P$ )		+260(+0/-5)°C
Time within 5°C of actual Peak Temp ( $t_p$ )		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp ( $T_P$ )		8 min. Max
Do not exceed		+260°C



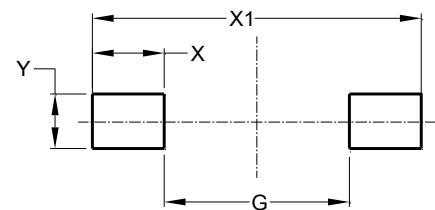
Package Dimensions & Suggested Pad Layout

SOD323



SOD-323 mechanical data

UNIT		A	C	D	E	E <sub>1</sub>	b	L <sub>1</sub>	A <sub>1</sub>	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	63	100	9.8	7.9	—	



Dimensions	Value (in mm)
<b>G</b>	1.40
<b>X</b>	1.20
<b>X1</b>	3.80
<b>Y</b>	1.00

Tape & reel specification

Tape		Symbol	Dimension (mm)		
		P0	4.00±0.20		
		P1	4.00±0.20		
		P2	2.00±0.20		
		D0	1.55±0.20		
		D1	1.00±0.20		
		E	1.55±0.25		
		F	3.60±0.20		
		W	8.00±0.20		
		A0	2.00±0.20		
		B0	3.25±0.20		
		K0	1.35±0.20		
		T	0.23±0.10		
		<p>7" Reel</p>		D2	177.0±5.0
				D3	55Min.
				D4	R24.6±2.0
G	R82.0±2.0				
<td>I</td> <td>13.0±2.0</td>		I	13.0±2.0		
		W1	10.20±3.0		
		Quantity: 3000PCS			