

1SS181W

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1SS181W

350mW Surface Mount Switching Diode

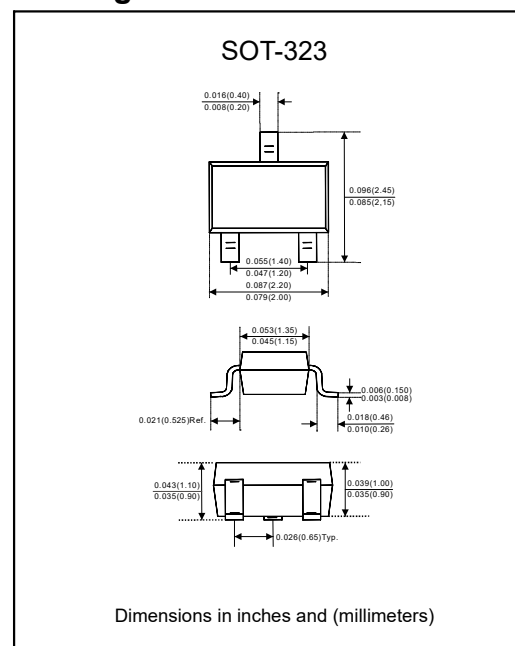
Features

- Small Package.
- Fast forward voltage.
- Fast reverse recovery time.
- Small total capacitance.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228.
- Suffix "-H" indicates Halogen-free parts, ex. 1SS181W-H

Mechanical data

- Case SOT-323 Standard package, molded plastic.
- Terminalis : Gold plated, solder able per MIL-STD-750, Method 2026.
- Mounting position : Any.
- Weight : 0.006 gram.

Package outline



Maximum ratings (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Repetitive peak reverse voltage	V_{RRM}	85	V
Reverse voltage	V_R	80	V
Average rectified forward current	$I_{F(AV)}$	100	mA
Maximum peak forward current	I_{FM}	300	mA
Non-repetitive peak forward surge current (10ms)	I_{FSM}	2	A
Power dissipation	P_D	350	mW
Operating temperature range	T_J	150	$^\circ\text{C}$
Storage temperature	T_{STG}	-55 to +150	$^\circ\text{C}$

Electrical characteristics (At $T_A=25^\circ\text{C}$ unless otherwise noted)

Parameter	Conditions	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F=100\text{mA}$	V_F			1.2	V
Reverse current	$V_R=30\text{V}$	I_R			100	nA
	$V_R=80\text{V}$				500	
Clamping voltage	$V_R=0\text{V}$, $f=1\text{MHz}$	C_T			4	pF
Reverse recovery time	$I_F=10\text{mA}$	t_{rr}			4	ns

Rating and characteristic curves(1SS181W)

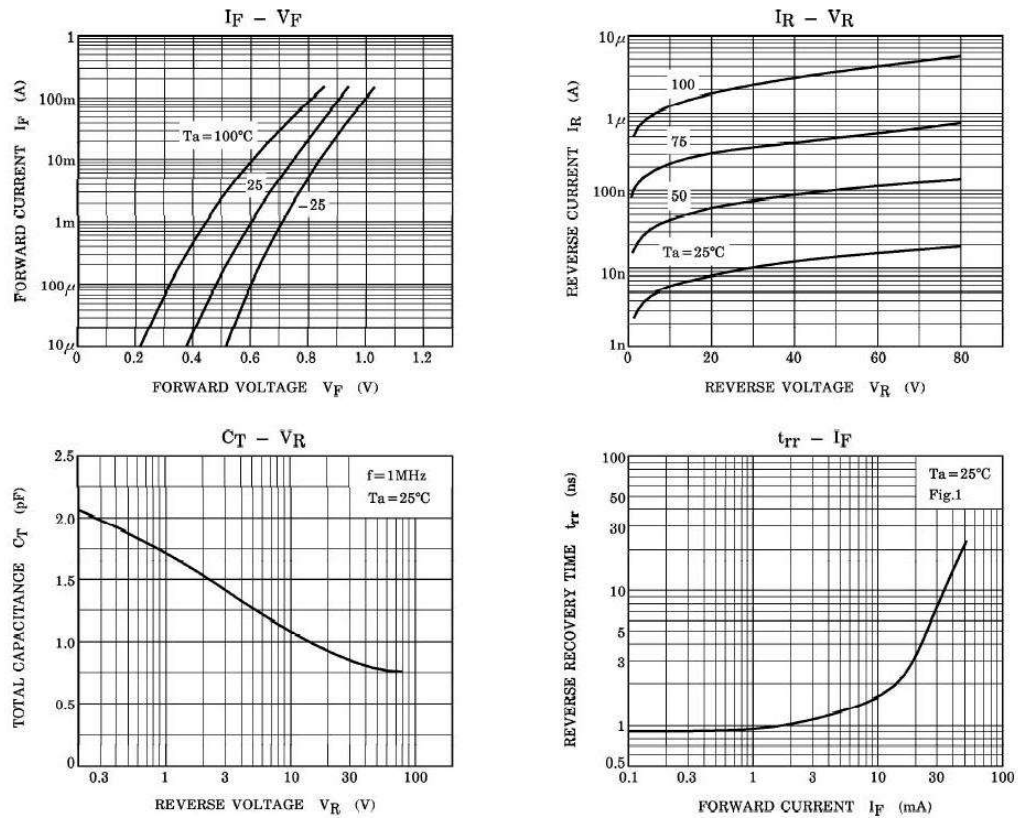
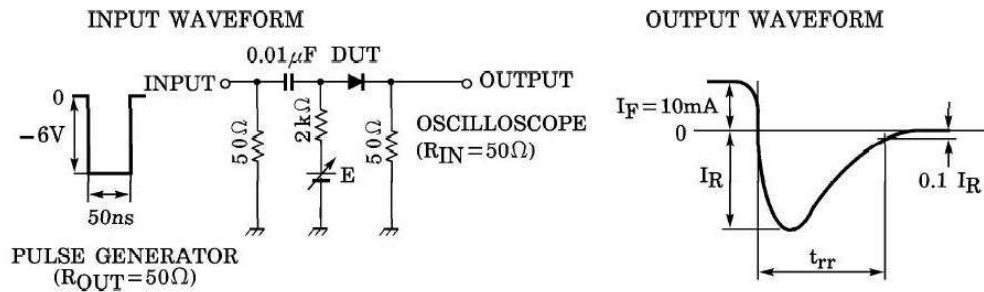


Fig.1 Reverse recovery time (t_{rr}) test circuit

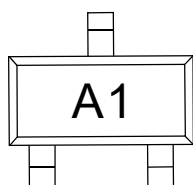


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Pinning information

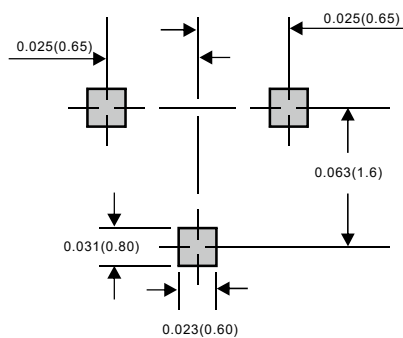
Pin	Simplified outline	Symbol
Pin1 Cathode Pin2 Cathode Pin3 Andoe		

Marking



Suggested solder pad layout

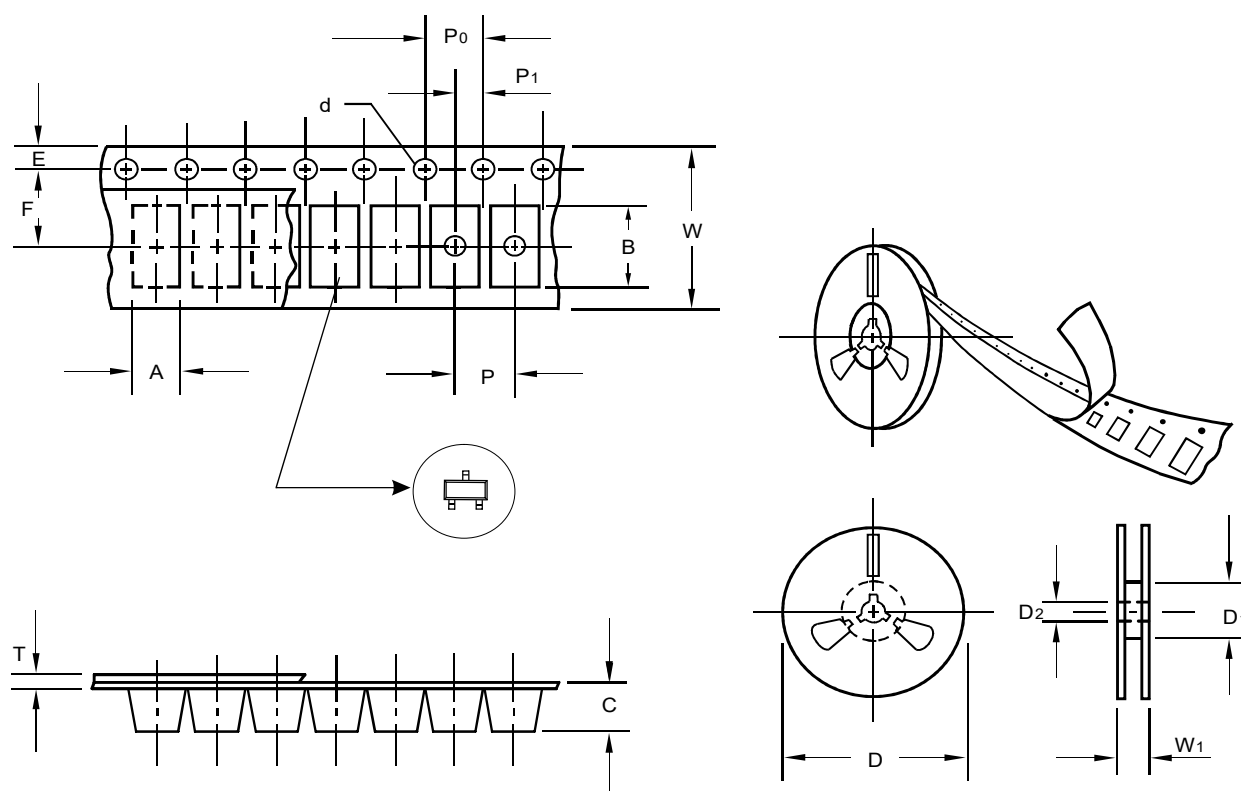
SOT-323



Dimensions in inches and (millimeters)

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Packing information



unit:mm

Item	Symbol	Tolerance	SOT-323
Carrier width	A	0.1	1.47
Carrier length	B	0.1	2.95
Carrier depth	C	0.1	1.15
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D ₁	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D ₁	min	62.00
Feed hole diameter	D ₂	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P ₀	0.1	4.00
Embossment center	P ₁	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W ₁	1.0	11.40

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

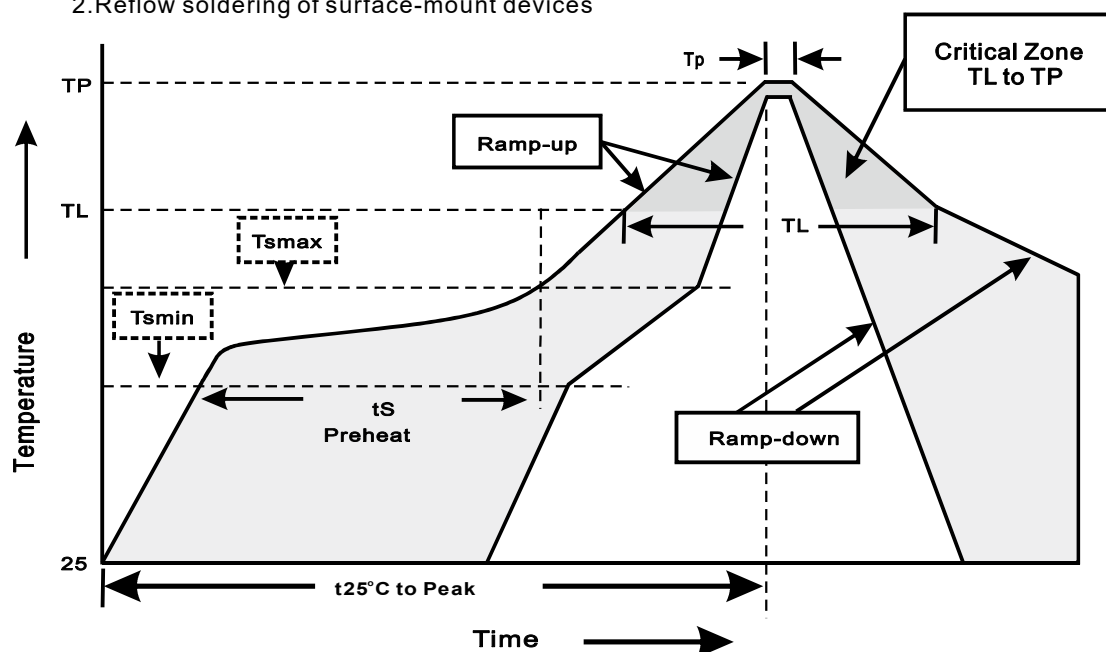
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA. (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOT-323	7"	3,000	4.0	30,000	183*183*123	178	382*262*387	240,000	9.5

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