

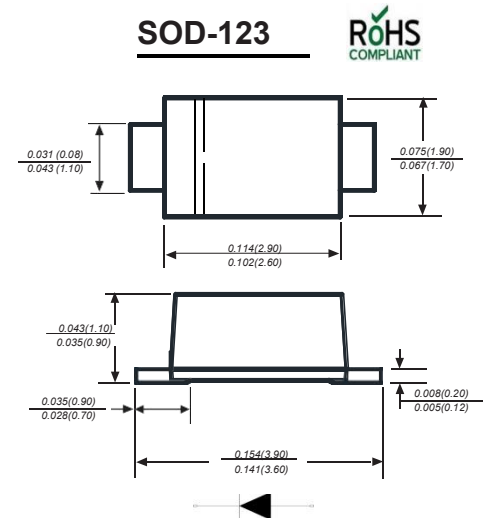
## SURFACE MOUNT SCHOTTKY BARRIER RECTIFIER

### Features

- ◆ The plastic package carries Underwriters Laboratory Flammability Classification 94V-0
- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ High temperature soldering guaranteed:  
250 °C/10 seconds at terminals

### Mechanical Data

Case : JEDEC SOD-123FL molded plastic body  
 Terminals : Solderable per MIL-STD-750, Method 2026  
 Polarity : Color band denotes cathode end  
 Mounting Position : Any  
 Weight : 0.0007 ounce, 0.02 grams



Dimensions in inches and (millimeters)

### MARKING DIAGRAM



### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
SL	SOD-123 (Pb-Free)	3000 / Tape & Reel



**MAXIMUM RATINGS**

Rating	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	30	V
Average Rectified Forward Current (Rated $V_R$ ) $T_L = 65^\circ\text{C}$	$I_{F(AV)}$	1.0	A
Non-Repetitive Peak Surge Current (Surge Applied at Rated Load Conditions, Halfwave, Single Phase, 60 Hz)	$I_{FSM}$	5.5	A
Storage Temperature Range	$T_{stg}$	-65 to +125	$^\circ\text{C}$
Operating Junction Temperature	$T_J$	-65 to +125	$^\circ\text{C}$
Voltage Rate of Change (Rated $V_R$ )	dv/dt	1000	V/ $\mu\text{s}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

**THERMAL CHARACTERISTICS**

Characteristic	Symbol	Value	Unit
Thermal Resistance, Junction to Ambient (Note 1)	$R_{\theta JA}$	230	$^\circ\text{C/W}$
Thermal Resistance, Junction to Lead (Note 1)	$R_{\theta JL}$	108	$^\circ\text{C/W}$

1. FR-4 or FR-5 = 3.5 × 1.5 inches using a 1 inch Cu pad.

**ELECTRICAL CHARACTERISTICS**

Characteristic	Symbol	Typ	Max	Unit
Instantaneous Forward Voltage (Note 2) ( $I_F = 0.1\text{ A}$ , $T_J = 25^\circ\text{C}$ ) ( $I_F = 0.7\text{ A}$ , $T_J = 25^\circ\text{C}$ ) ( $I_F = 1.0\text{ A}$ , $T_J = 25^\circ\text{C}$ )	$V_F$	- - 0.47	0.35 0.45 -	V
Maximum Instantaneous Reverse Current (Note 2) (Rated DC Voltage, $T_C = 25^\circ\text{C}$ ) ( $V_R = 5\text{ V}$ , $T_C = 25^\circ\text{C}$ )	$I_R$		60 10	$\mu\text{A}$

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

2. Pulse Test: Pulse Width = 300  $\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .

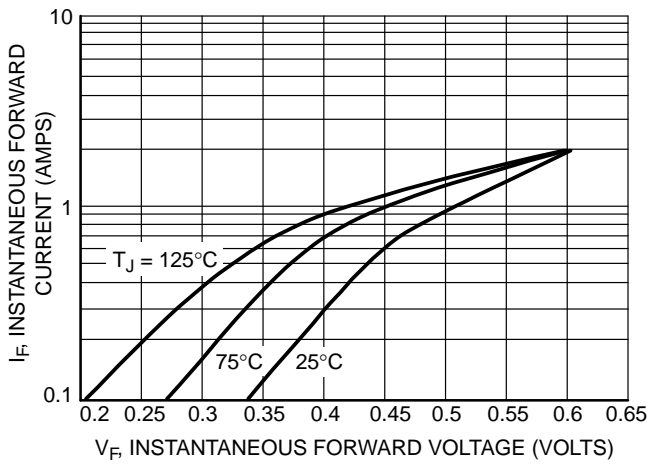


Figure 1. Maximum Forward Voltage

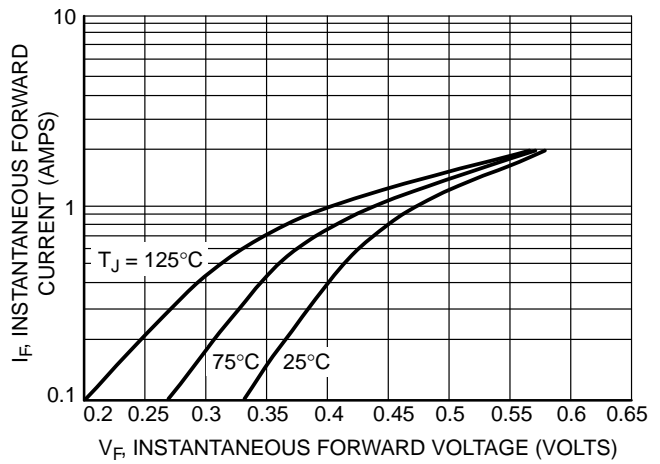


Figure 2. Typical Forward Voltage

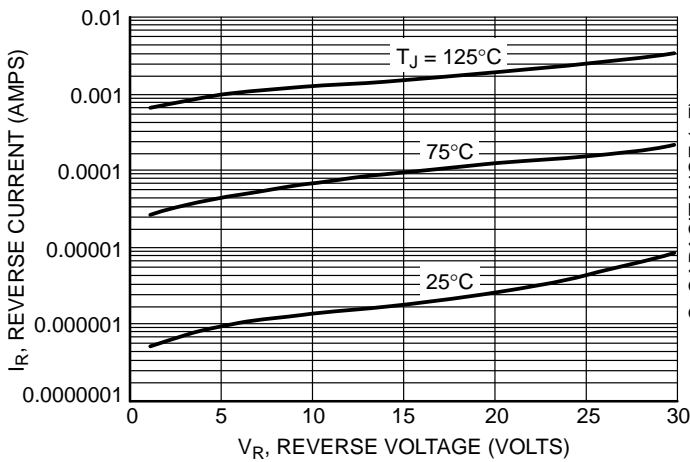


Figure 3. Typical Reverse Current

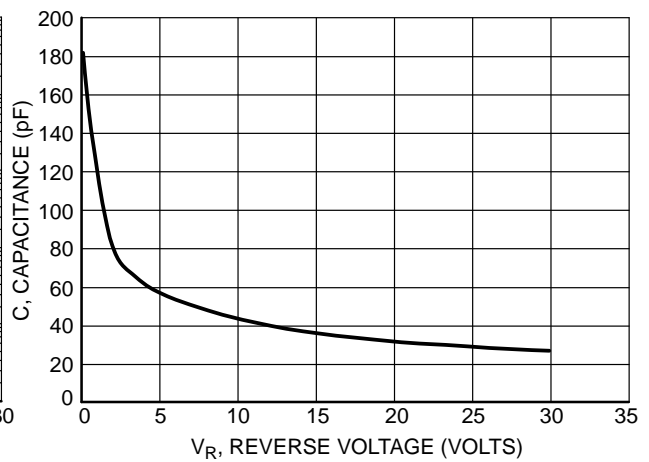


Figure 4. Typical Capacitance

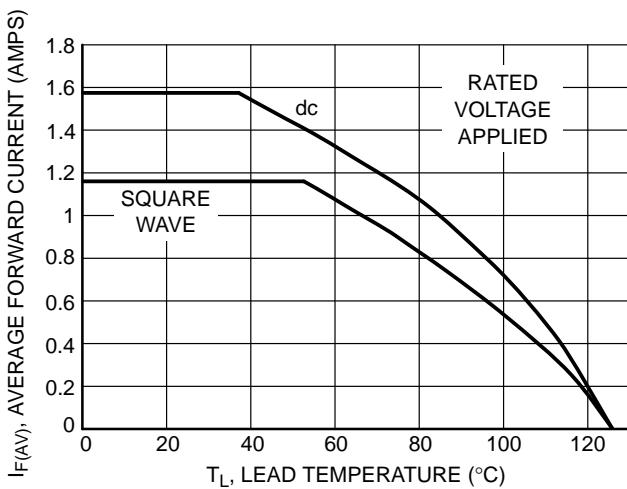


Figure 5. Current Derating, Lead,  $R_{\theta JL} = 108^\circ\text{C/W}$

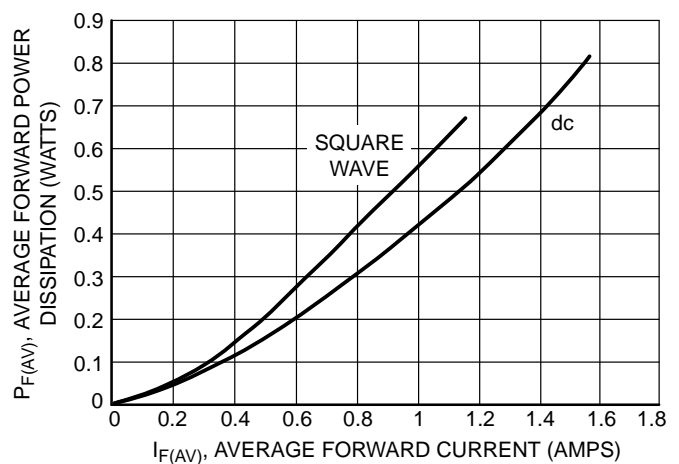
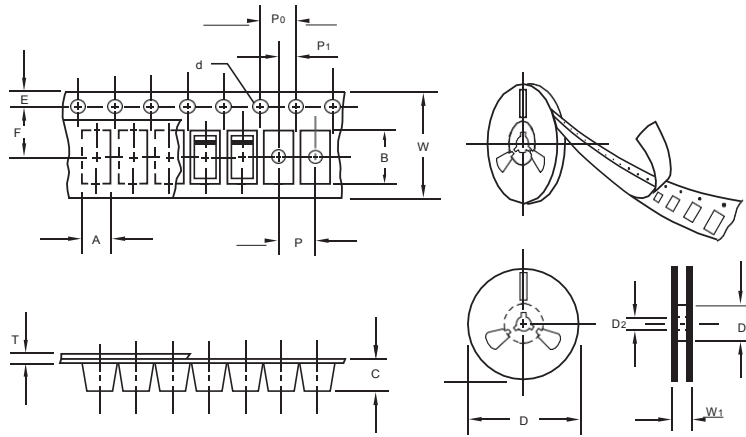


Figure 6. Forward Power Dissipation

## Packing information

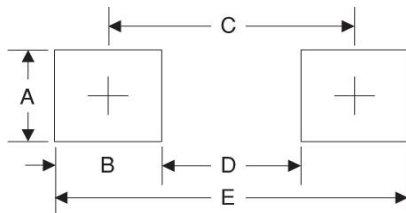


unit:mm

Item	Symbol	Tolerance	SOD-123
Carrier width	A	0.1	2.1
Carrier length	B	0.1	4.0
Carrier depth	C	0.1	1.60
Sprocket hole	d	0.05	1.55
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D <sub>1</sub>	min	50.0
Feed hole diameter	D <sub>2</sub>	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 <sub>0</sub>	0.1	4.00
Embossment center	P <sub>1</sub>	0.1	2.00
Overall tape thickness	T	0.1	0.25
Tape width	W	0.3	8.15
Reel width	W <sub>1</sub>	1.0	10.5

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

## Suggested Pad Layout



Symbol	Unit (mm)	Unit (inch)
A	1.2	0.047
B	1.2	0.047
C	3.2	0.126
D	2	0.079
E	4.4	0.173