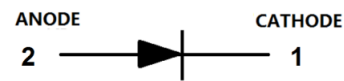
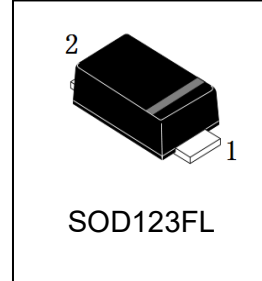


# SOD4001T-SH thru SOD4007T-SH

Surface Mount Glass Passivated Junction Rectifiers  
Reverse Voltage 50 to 1000V Forward Current 1.0A

## FEATURES

- \* Plastic package has Underwriters Laboratory Flammability Classification 94V-0
- \* High temperature metallurgically bonded construction
- \* Cavity-free glass passivated junction
- \* Capable of meeting environmental standards of MIL-S-19500
- \* 1.0 A operation at TA=75°C with no thermal runaway
- \* Typical IR less than 1.0μA
- \* High temperature soldering guaranteed: 260°C/10 seconds



## Mechanical Data

**Case:** JEDEC SOD123-FL/MINI SMA, molded plastic over glass DIE

**Terminals:** Plated leads, solderable per MIL-STD-750, Method 2026

**Polarity:** Color band denotes cathode end

**Mounting Position:** Any

**Weight:** 0.0155 g

**Handling precaution:** None

## Electrical Characteristic

### 1. Maximum & Thermal Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter Symbol	symbol	SOD40 01T-SH	SOD40 02T-SH	SOD40 03T-SH	SOD40 04T-SH	SOD40 05T-SH	SOD40 06T-SH	SOD40 07T-SH	Unit
Device marking code		A1T	A2T	A3T	A4T	A5T	A6T	A7T	
Maximum repetitive peak reverse voltage	$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS voltage	$V_{RMS}$	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
Maximum average forward rectified current lead length at $T_C = 75^\circ\text{C}$ (Note 1)	$I_{F(AV)}$	1.0							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	30							A
reverse surger current(20mS)	$I_{RSM}$	18							mA
Maximum reverse recovery time (Note 1)	$t_{rr}$	2100							ns
Typical thermal resistance (Note 2)	$R\theta_{JA}$ $R\theta_{JL}$	170 40							$^\circ\text{C/W}$
Operating junction temperature range	$T_J$	-55 to +150							$^\circ\text{C}$
storage temperature range	$T_{STG}$	-55 to +150							$^\circ\text{C}$

### Electrical Characteristics Ratings at 25°C ambient temperature unless otherwise specified.

Parameter Symbol	symbol	SOD40 01T-SH	SOD40 02T-SH	SOD40 03T-SH	SOD40 04T-SH	SOD40 05T-SH	SOD40 06T-SH	SOD40 07T-SH	Unit
Maximum instantaneous forward voltage at 1.0A	$V_F$	1.1							V
Maximum DC reverse current $T_J = 25^\circ\text{C}$ at rated DC blocking voltage $T_J = 125^\circ\text{C}$	$I_R$	5.0 50							$\mu\text{A}$
Typical junction capacitance at 4.0V, 1MHz	$C_J$	15.0							PF

NOTES:

1.  $I_F = 0.5\text{A}$ ,  $I_R = 1.0\text{A}$ ,  $IRR = 0.25\text{A}$
2. 8.0mm<sup>2</sup> (.013mm thick) land areas

We declare that the material of product is Halogen free (green epoxy compound)

# SOD4001T-SH thru SOD4007T-SH

## 2. Ratings and Characteristic Curves (TA = 25°C unless otherwise noted)

Fig. 1 - Forward Current Derating Curve

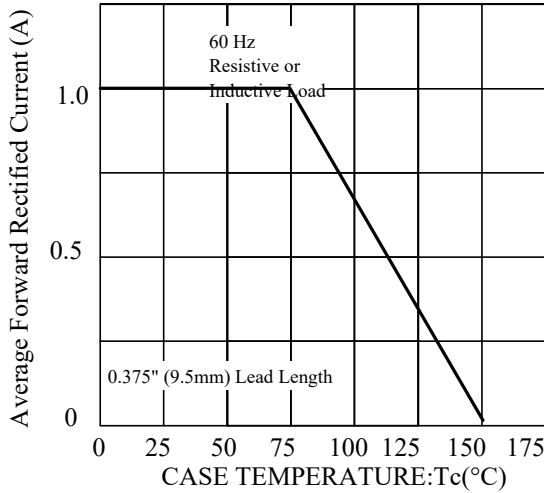


Fig. 2 - Maximum Non-repetitive Peak Forward Surge Current

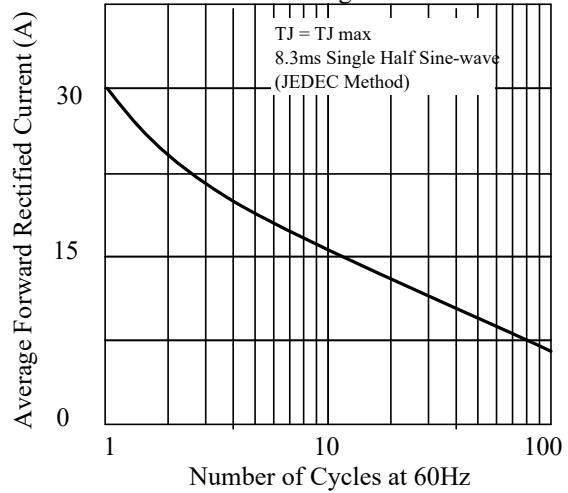


Fig 3. - Typical Instantaneous Forward Characteristics

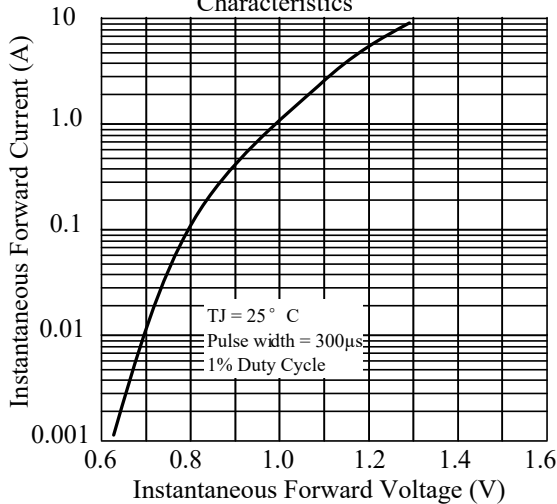


Fig 4. - Typical Reverse Characteristics

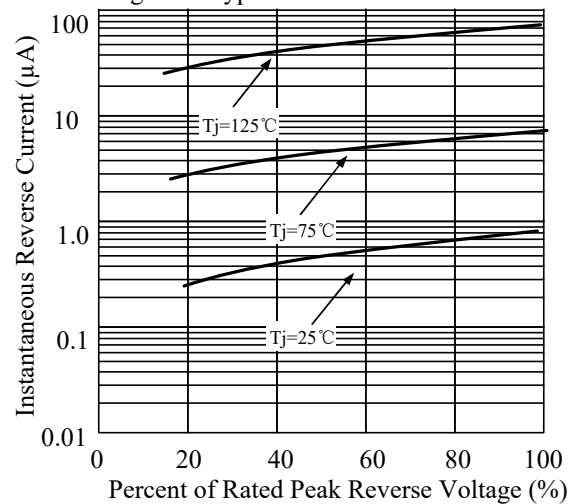


Fig 5. - typical transient thermal impedance

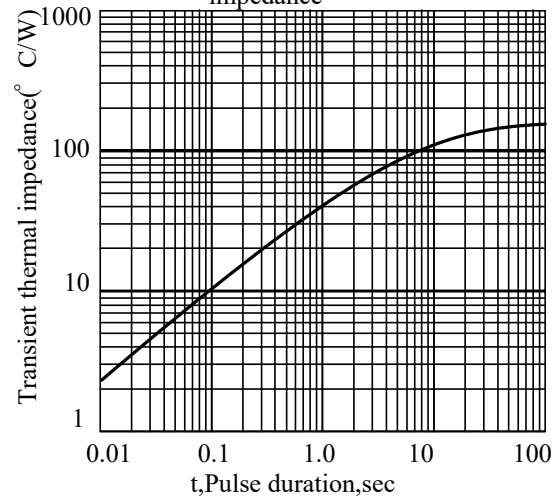
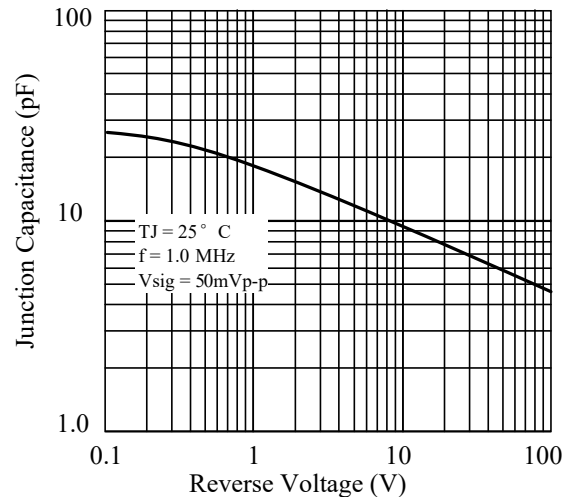
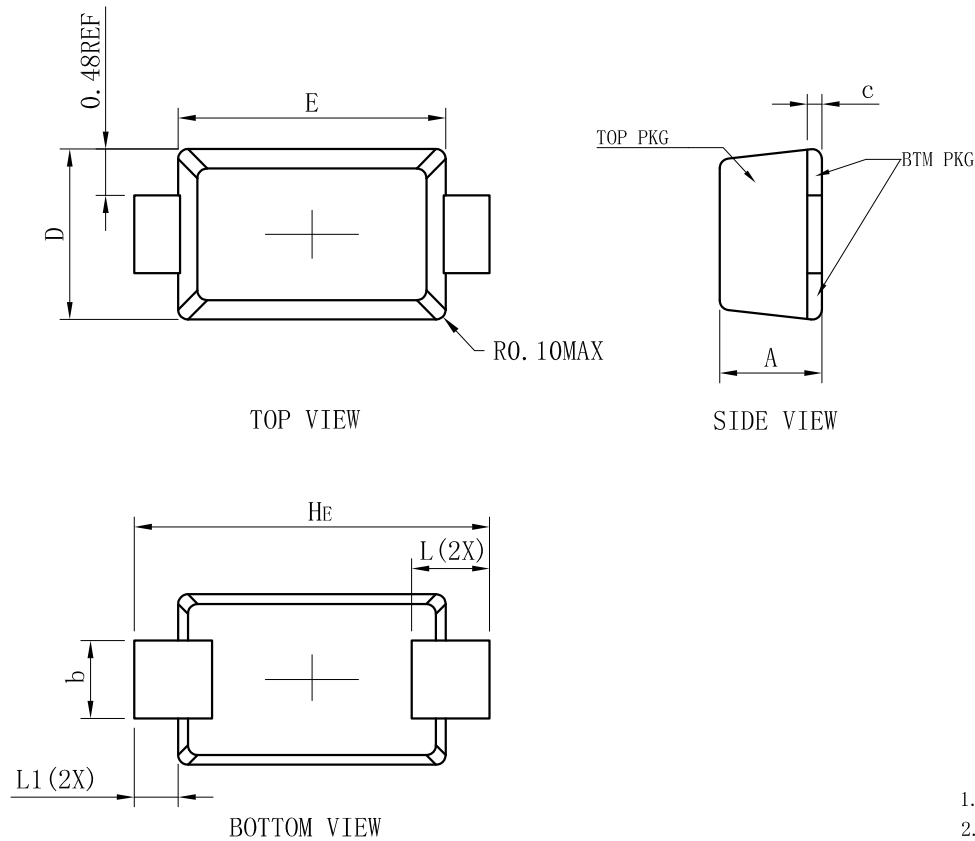


Fig 6. - Typical Junction Capacitance



### 3.OUTLINE AND DIMENSIONS

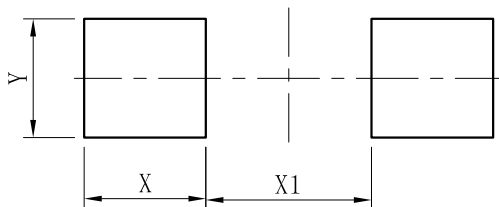


SOD123FL			
DIM	MIN	NOR	MAX
A	0.90	1.05	1.15
b	0.75	0.80	0.95
L	0.50	0.80	1.10
E	2.60	2.75	2.90
D	1.60	1.75	1.90
HE	3.50	3.65	3.80
c	0.12	0.17	0.22
L1	0.25	0.45	0.65
All Dimensions in mm			

#### GENERAL NOTES

- 1.Top package surface finish  $Ra0.4\pm0.2\mu m$
- 2.Bottom package surface finish  $Ra0.7\pm0.2\mu m$
- 3.Side package surface finish  $Ra0.4\pm0.2\mu m$

### 4.SOLDERING FOOTPRINT

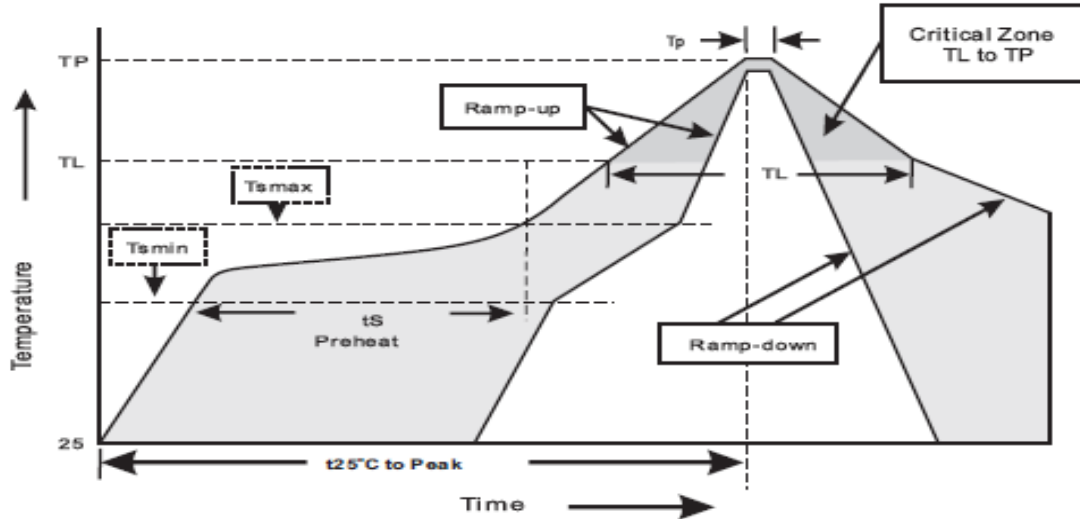


DIM	(mm)
X	1.20
Y	1.10
X1	2.00

# SOD4001T-SH thru SOD4007T-SH

## 5.Suggested thermal profile for soldering process

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



3. Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T <sub>L</sub> to T <sub>P</sub> )	<3°C/sec
Preheat	
- Temperature Min(T <sub>min</sub> )	150°C
- Temperature Max(T <sub>max</sub> )	200°C
- Time(min to max)(t <sub>s</sub> )	60~120sec
T <sub>max</sub> to T <sub>L</sub>	
- Ramp-up Rate	<3sec
Time maintained above:	
- Temperature (T <sub>L</sub> )	217°C
- Time(t <sub>L</sub> )	60-260sec
Peak Temperature(T <sub>P</sub> )	255 -0/+5°C
Time within 5°C of actual Peak Temperature(T <sub>P</sub> )	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

## SOD4001T-SH thru SOD4007T-SH

### 6.High reliability test capabilities

Item Test	Condition	Reference
Solder Resistance	at 260±5°C for 10±2sec immerse body into solder 1/16" ± 1/32"	MIL-STD-750D METHOD-2031
Solderability	at 245±5°C for 5 sec	MIL-STD-202F METHOD-208
High Temperature Reverse Bias	V <sub>R</sub> =80% rate at T <sub>J</sub> =150°C for 168hrs	MIL-STD-750D METHOD-1038
Forward Operation Life	Rated average rectifier current T <sub>A</sub> =25°C for 500hrs	MIL-STD-750D METHOD-1027
Intermittent Operation Life	T <sub>A</sub> =25°C , I <sub>F</sub> =I <sub>o</sub> On state:power on for 5 min. Off state:power off for 5 min. on and off for 500 cycles	MIL-STD-750D METHOD-1036
Pressure Cooker	15P <sub>SIG</sub> at T <sub>A</sub> =121°C for 4hrs	JESD22-A102
Temperature Cycling	-55°C to +125°C dwelled for 30 min. and transferred for 5min. Total 10 cycles	MIL-STD-750D METHOD-1051
Thermal Shock	0°C for 5min. Rise to 100°C for 5min. Total 10 cycles	MIL-STD-750D METHOD-1056
Forward Surge	8.3ms single half sine-wave superimposed on rated load,one surge	MIL-STD-750D METHOD-4066-2
Humidity	at T <sub>A</sub> =85°C , R <sub>H</sub> =85% for 1000hrs	MIL-STD-750D METHOD-1021
High Temperature Storage Life	at 175°C for 1000hrs	MIL-STD-750D METHOD-1031

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### 8.1.2 Label position and QA stamp position.(Empty area) 标签张贴位置及QA印章位置。(印章盖 标签空白区)



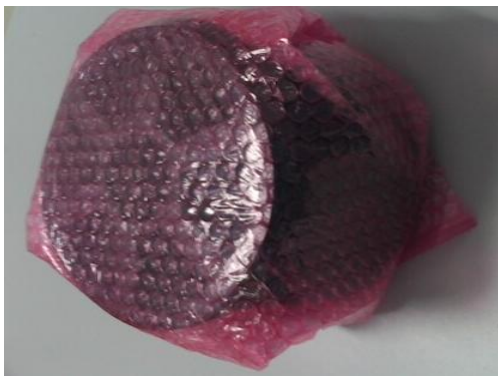
7英寸卷盘标签张贴及QA印章位置



13英寸卷盘标签张贴及QA印章位置

### 8.1.3 Ensure direction In the same reel. The same steel coil plate direction, With antistatic bubble to package reel. Refer to the below picture.

同一箱内的卷盘方向一致,用防静电泡沫对卷盘进行包裹。



7英寸卷盘防静电泡沫包裹



13英寸卷盘防静电泡沫包裹

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8.1.4 Put in the antistatic packing box after packaged reels. And QA stamp on the box label .

将包装好的卷盘放入防静电纸箱中，并 盒标签上盖章。



7 英寸卷盘内盒及标签



13 英寸卷盘内盒及标签

8.1.5 Product use printing inner box. 产品使用LRC印字内箱。



7英寸卷盘内箱印字（侧面）



13英寸卷盘内箱印字（正面）

8.1.6 Inner box packing quantity requirement. 内盒包装数量要求。

Product Description	QTY
SOD123-FL	1-10Reels
SOD323-HE	1-10Reels
SMA-FL	1-7Reels
SMB-FL	1-4Reels

8.1.7 With transparent tape sealing. 透明胶带封箱。





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7英寸内箱封盒



13英寸内箱封盒

### 8.1.8 Outer box size and packing quantity requirement, 外箱尺寸及包装数量要求。

Product Description	卷盘尺寸	Height (H)	Width (W)	Length (L)	Max. Qty
Power Device	7 英寸	410mm	400mm	445mm	12
Power Device	13 英寸	410mm	400mm	445mm	5



7 英寸卷盘产品装箱



13 英寸卷盘产品装箱

统一方向



Proprietary Information

# Title: Power Packages Marking & Taping Specification

## 功率封装字模和编带规范

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### 8.2 Standard Products Taping Specification

标准产品编带规范

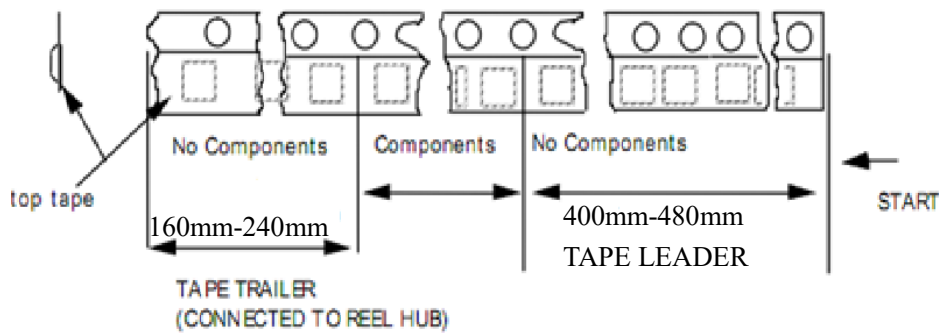
#### 8.2.1 Tape length of no component

空带长度说明

Taping leader length 引导部分: 440mm±40mm , Tape trailer 尾部: 200mm±40mm

Figure 4

Tape Ends For Finished Goods Reel



#### 8.2.2 Component packaging orientation: The cathode lead is close to the carrier tape's index hole.

产品放置方向: 印阴极带引脚邻近载带索引孔





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功率封装字模和编带规范

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## 8.2.3 Tape enwind orientation

编带缠绕方向要求

