

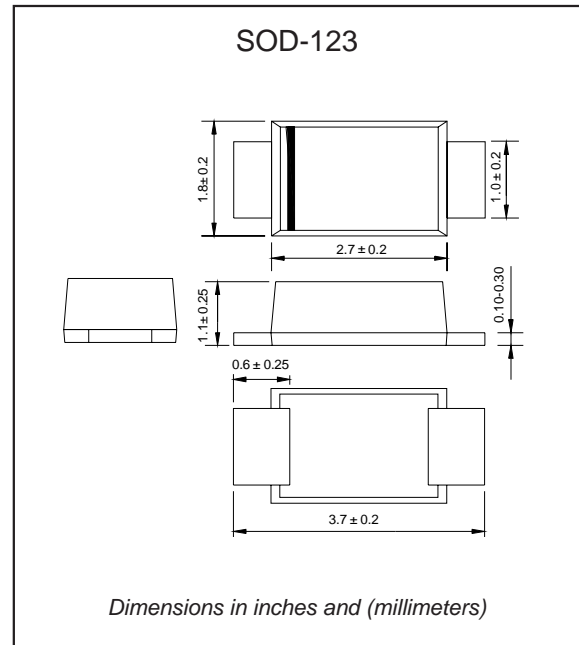
## Features

- ◆ Glass passivated device
- ◆ Ideal for surface mounted applications
- ◆ Low reverse leakage
- ◆ Metallurgically bonded construction
- ◆ High temperature soldering guaranteed:  
250°C/10 seconds, 0.375" (9.5mm) lead length,  
5 lbs. (2.3kg) tension
- ◆ Compliant to RoHS Directive 2011/65/EU
- ◆ Compliant to Halogen-free

## Mechanical data

- ◆ Case : JEDEC SOD-123 molded plastic body over passivated chip
- ◆ Terminals : Plated axial leads, solderable per MIL-STD-750, Method 2026
- ◆ Polarity : Color band denotes cathode end
- ◆ Mounting Position : Any

## Package outline



## Maximum ratings and Electrical Characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.2	$I_o$			1.0	A
Forward surge current	8.3ms single half sine-wave (JEDEC method)	$I_{FSM}$			30	A
Reverse current	$V_R = V_{RRM}, T_A = 5^\circ\text{C}$	$I_R$			5.0	$\mu\text{A}$
	$V_R = V_{RRM}, T_A = 0^\circ\text{C}$				100	
Thermal resistance	Junction to ambient NOTE 1	$R_{JA}$		85		$^\circ\text{C}/\text{W}$
Diode junction capacitance	f=1MHz and applied AC reverse voltage	$C_J$		15		pF
Storage temperature		$T_{STG}$	-55		+150	$^\circ\text{C}$

SYMBOLS	$V_{RRM}^{*1}$ (V)	$V_{RMS}^{*2}$ (V)	$V_R^{*3}$ (V)	$V_F^{*4}$ (V)	$t_r^{*5}$ (ns)	Operating temperature $T_J, (^\circ\text{C})$
SF14D	200	140	200	0.95	35	-55 to +150

Note: 1.P.C.B. mounted with 2.0x2.0" (5.0x5.0cm) copper pad areas  
2 Reverse recovery time test condition,  $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $t_{RR}=0.25\text{A}$

- \*1 Repetitive peak reverse voltage
- \*2 RMS voltage
- \*3 Continuous reverse voltage
- \*4 Maximum forward voltage @  $I_F=1.0\text{A}$
- \*5 Maximum reverse recovery time, note 2

# SF14D

1.0A Surface Mount SMD  
Fast Rectifiers-200V

## Rating and characteristic curves

FIG. 1-TYPICAL FORWARD CHARACTERISTICS

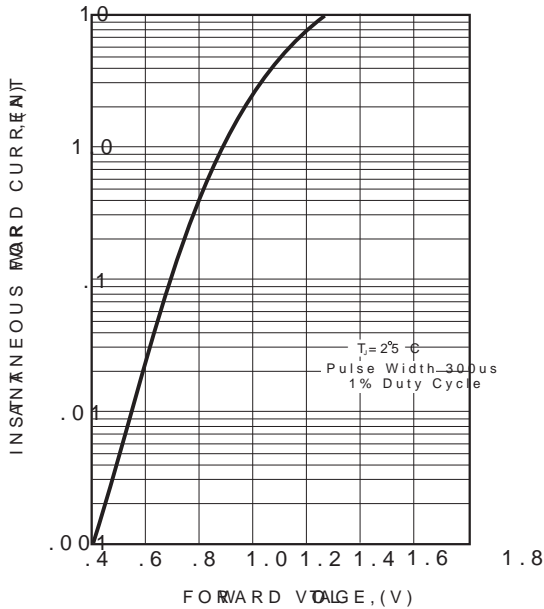


FIG. 2-TYPICAL FORWARD CURRENT DERATING CURVE

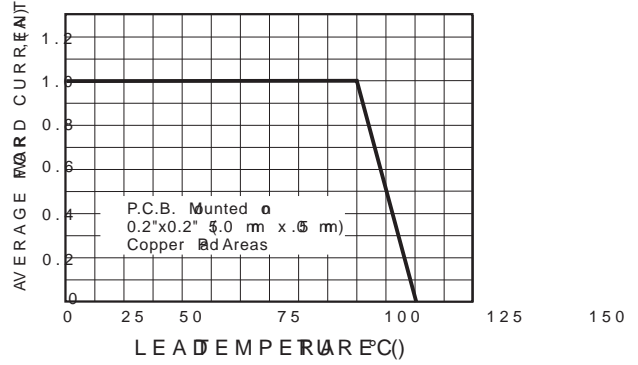
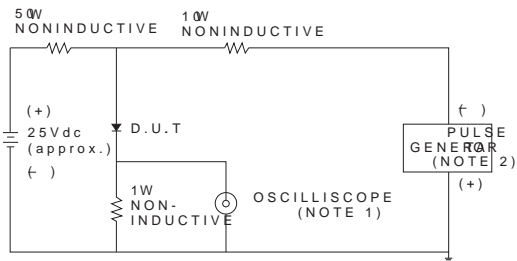


FIG. 3-TEST CIRCUIT AND REVERSE RECTIFIER CHARACTERISTICS



NOTES: 1. Rise = 7ns max., Input Impedance = 1 megohm, 22pF  
2. Fall = 10ns max., Source Impedance = 50 ohms.

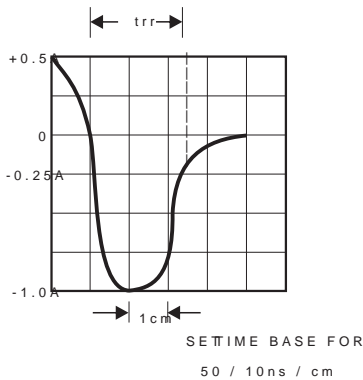


FIG. 4-MAXIMUM NON-REPEATABLE FOR SURGE CURRENT

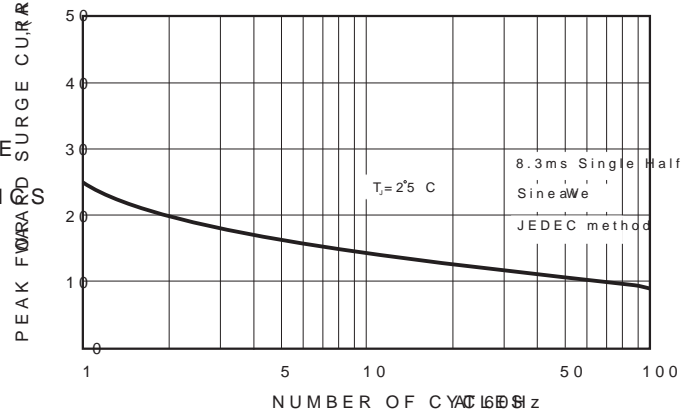
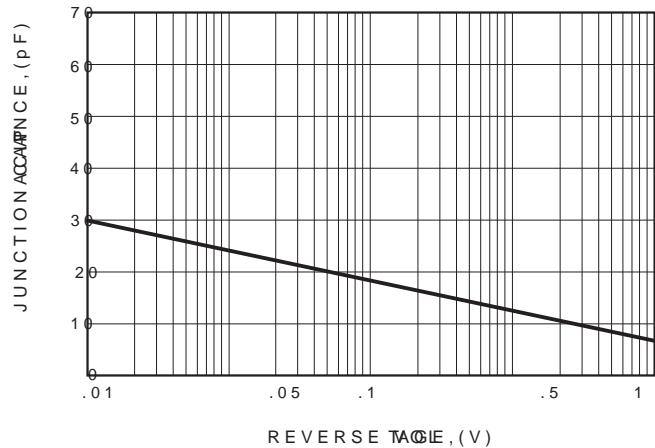




FIG. 5-TYPICAL JUNCTION CAPACITANCE



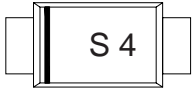
# SF14D

1.0A Surface Mount SMD  
Fast Rectifiers-200V

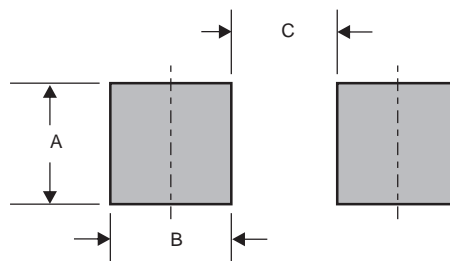
## Pinning information

Pin	Symbol	Symbol
Pin1 anode		
Pin2 cathode		

## Marking

Type number	Marking
SF14D	

## Suggested solder pad layout



Dimensions in inches and (millimeters)

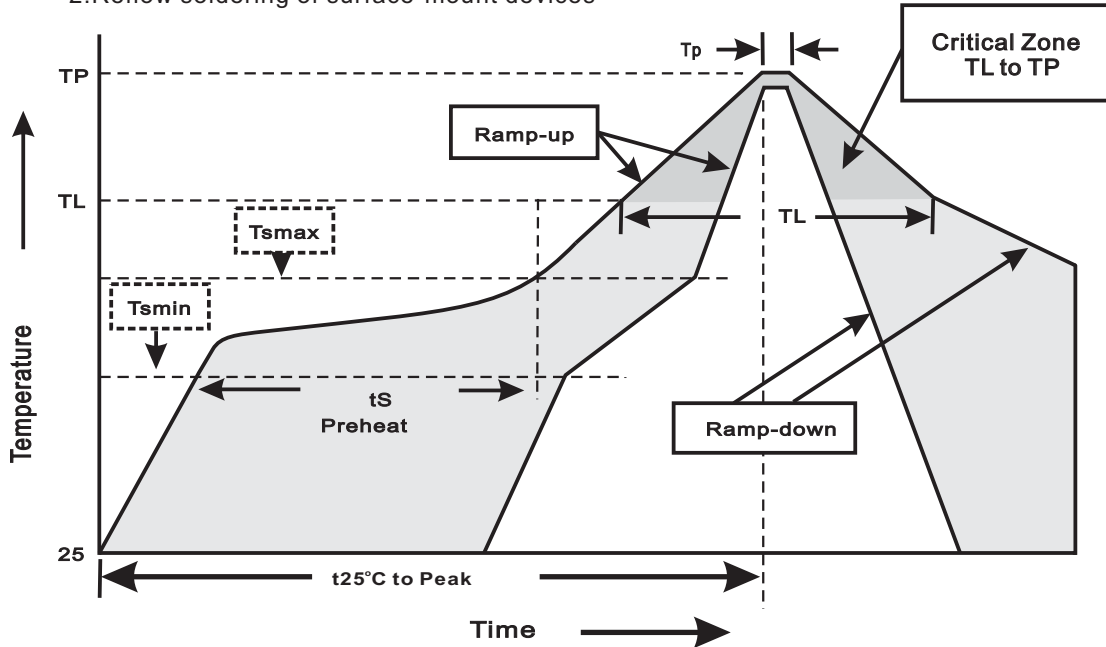
PACKAGE	A	B	C
SOD-123	0.075 (1.90)	0.055 (1.40)	0.075 (1.90)

# SF14D

1.0A Surface Mount S<sub>per</sub>  
Fast Rectifiers-200V

## 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(T <sub>L</sub> to T <sub>P</sub> )	<3°C/sec
Preheat -Temperature Min(T <sub>sm</sub> ) -Temperature Max(T <sub>smax</sub> ) -Time(min to max)(t <sub>s</sub> )	150°C 200°C 60~120sec
T <sub>smax</sub> to T <sub>L</sub> -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T <sub>L</sub> ) -Time(t <sub>L</sub> )	217°C 60~260sec
Peak Temperature(T <sub>P</sub> )	255°C-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