

## FEATURES

- | Low Forward Voltage Drop

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- | Fast Switching Time

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- | Surface Mount Package Ideally Suited for Automatic Insertion

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SOD-323

## MECHANICAL DATA

- | SOD-323 Small Outline Plastic Package

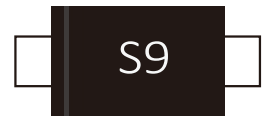
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- | Polarity: Color band denotes cathode end

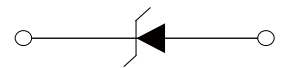
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- | Mounting Position: Any

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Marking



Schematic Symbol

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS (T<sub>A</sub> = 25°C )

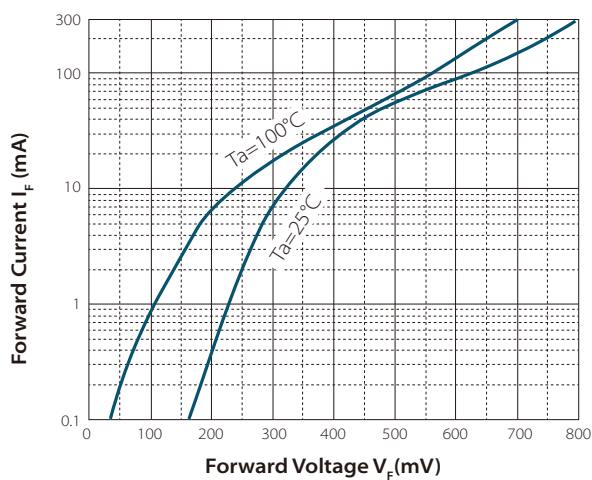
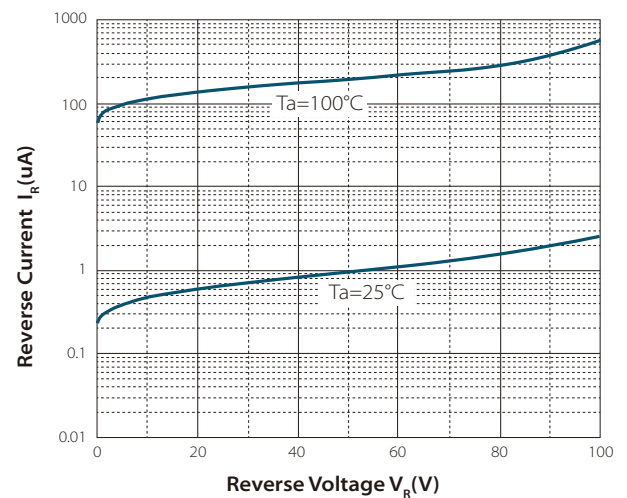
Parameter	Symbol	Value	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	100	V
Maximum DC blocking voltage	V <sub>R</sub>	100	V
Forward continuous current	I <sub>F</sub>	150	mA
Repetitive peak forward current (Note 1) @ tp < 1.0s, Duty Cycle < 50%	I <sub>FRM</sub>	350	mA
Non-repetitive Peak Forward surge current @ t = 8.3ms	I <sub>FSM</sub>	750	mA
Power Dissipation	P <sub>D</sub>	200	mW
Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	500	°C/W
Operating junction temperature	T <sub>J</sub>	125	°C
Storage temperature range	T <sub>STG</sub>	-55-+150	°C

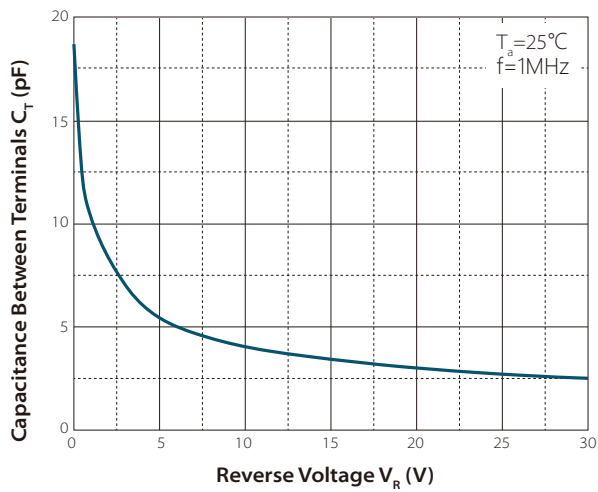
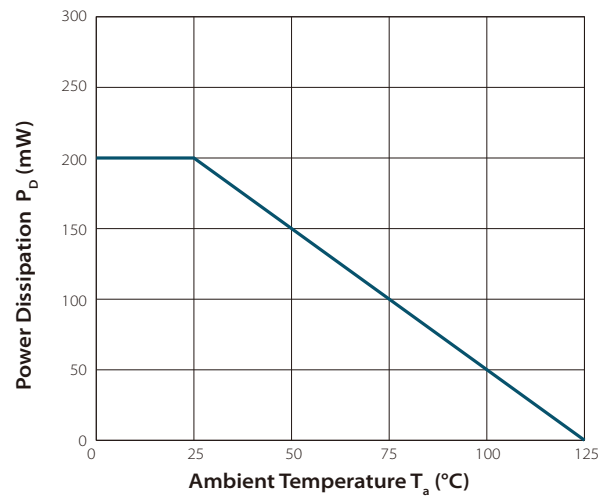
## ELECTRICAL CHARACTERISTICS( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Forward voltage(Note 2)	$V_F$	$I_F=0.1\text{mA}$			0.25	V
		$I_F=10\text{mA}$			0.45	V
		$I_F=250\text{mA}$			1	V
Reverse breakdown voltage(Note 2)	$V_{(BR)}$	$I_R=100\mu\text{A}$	100			V
Reverse Leakage Current	$I_R$	$V_R=1.5\text{V}$			0.3	$\mu\text{A}$
		$V_R=10\text{V}$			0.5	$\mu\text{A}$
		$V_R=50\text{V}$			1	$\mu\text{A}$
		$V_R=75\text{V}$			2	$\mu\text{A}$
Capacitance between terminals	$C_T$	$V_R=0\text{V}, f=1.0\text{MHz}$		20		pF
		$V_R=1\text{V}, f=1.0\text{MHz}$		12		pF

Notes: 1. Part mounted on FR-4 board with recommended pad layout.  
 2. Short duration pulse test used to minimize self-heating effect.

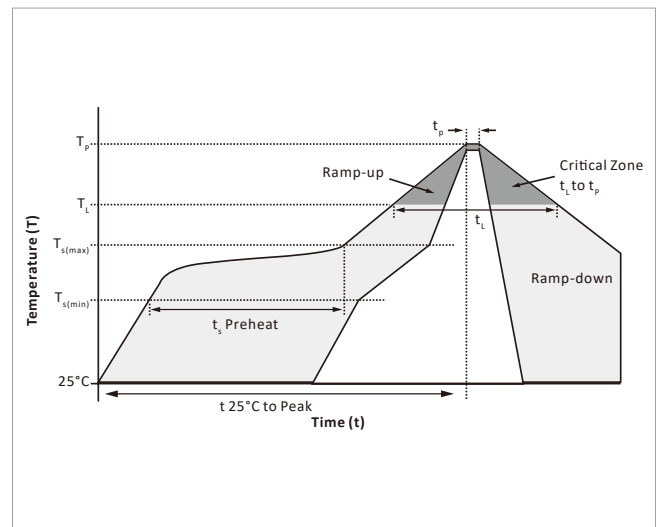
## CHARACTERISTIC CURVES

**Fig.1 Forward Characteristics**

**Fig.2 Reverse Characteristics**


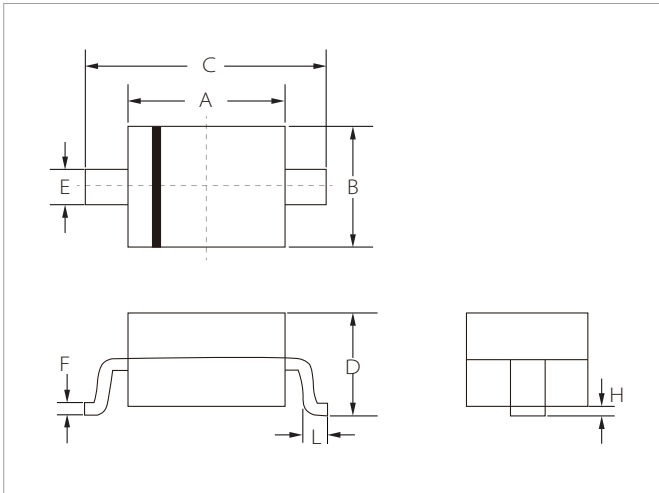
**Fig.3 Capacitance Characteristics**

**Fig.4 Power Derating Curve**


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(\text{min})}$ )	150 $^\circ\text{C}$
	Temperature Max ( $T_{s(\text{max})}$ )	200 $^\circ\text{C}$
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3 $^\circ\text{C}/\text{second}$ max
$T_{s(\text{max})}$ to $T_L$ - Ramp-up Rate		3 $^\circ\text{C}/\text{second}$ max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217 $^\circ\text{C}$
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260 $^\circ\text{C}$
Time within 5 $^\circ\text{C}$ of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6 $^\circ\text{C}/\text{second}$ max
Time 25 $^\circ\text{C}$ to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260 $^\circ\text{C}$

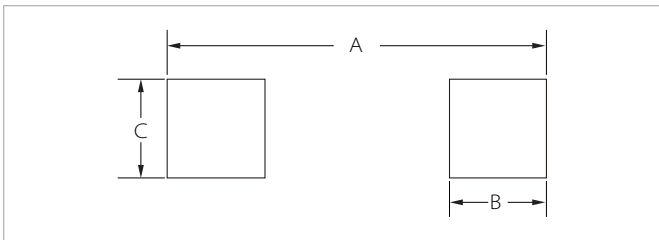


## SOD-323 PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	1.60	1.90	0.063	0.075
B	1.15	1.45	0.045	0.057
C	2.39	2.75	0.094	0.108
D	0.80	1.10	0.031	0.043
E	0.25	0.40	0.010	0.016
F	0.10	0.20	0.004	0.008
H	-	0.10	-	0.004
L	0.20	0.40	0.008	0.016

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.87	3.12	0.113	0.123
B	0.66	0.91	0.026	0.036
C	0.66	0.91	0.026	0.036

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
BAT46WS	SOD-323	3000PCS	7"

To find your local partner within Semiwell's website : [www.semiwell.com.cn](http://www.semiwell.com.cn)

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