

## FEATURES

For use in low voltage, high frequency inverters Free wheeling, and polarity protection applications



SOD-323

## MECHANICAL DATA

Encapsulation: SOD-323 Small Outline Plastic Package

Polarity: Color band denotes cathode end

Mounting Position: Any



Marking



Schematic Symbol

## APPROVALS

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

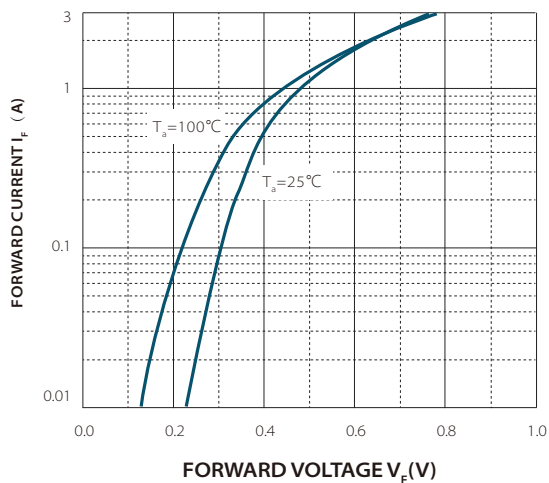
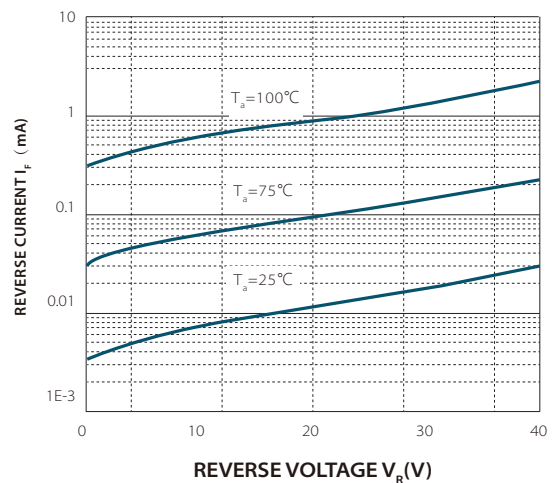
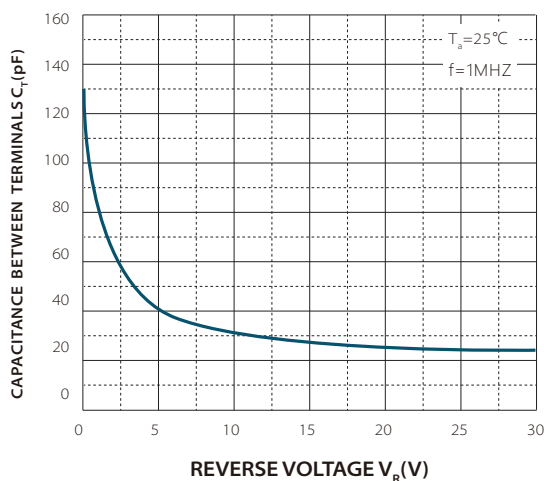
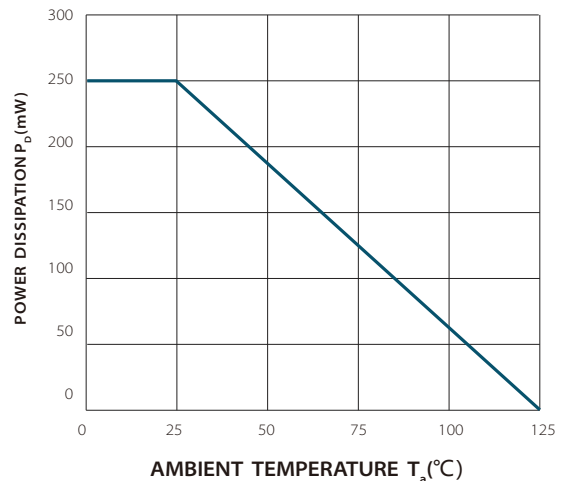
## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ( $T_A=25^{\circ}\text{C}$ )

Symbol	Parameter	Value	Unit
$V_{RM}$	Non-repetitive peak reverse voltage	20	V
$V_{RRM}$	Peak repetitive peak reverse voltage		
$V_{RWM}$	Working peak reverse voltage		
$V_R$	DC blocking voltage		
$V_{R(RMS)}$	RMS reverse voltage	14	
$I_O$	Average rectified output current	1	A
$I_{FSM}$	Non-repetitive Peak Forward Surge Current @ $t=8.3\text{ms}$	9	
$I_{FRM}$	Repetitive peak forward current	1.5	
$P_d$	Power dissipation	250	mW
$R_{\theta JA}$	Thermal resistance junction to ambient	400	$^{\circ}\text{C}/\text{W}$
$T_J$	Junction temperature	125	$^{\circ}\text{C}$
$T_{STG}$	Storage temperature	-55~+150	

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

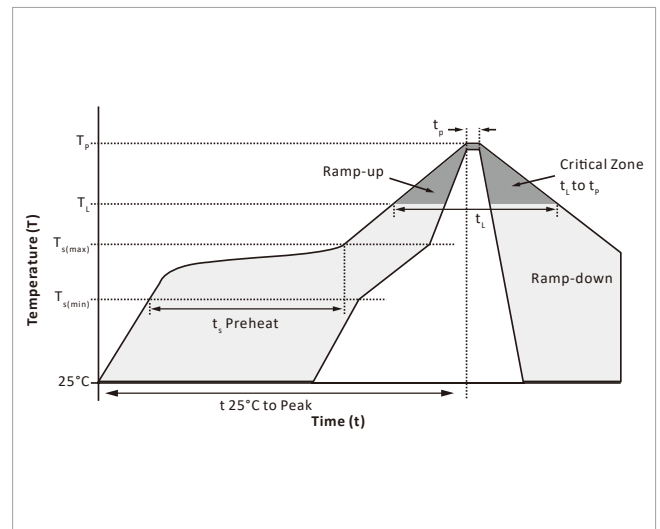
Symbol	Parameter	Test	Min.	Max.	Unit
$V_{BR}$	Reverse breakdown voltage	$I_R = 1\text{mA}$	20		V
$I_R$	Reverse voltage leakage current	$V_R = 20$		1	mA
$V_F$	Reverse leakage current	$I_F = 1\text{A}$		0.45	V
		$I_F = 3\text{A}$		0.75	
$C_D$	Diode capacitance	$V_F = 4\text{V}, f = 1\text{MHz}$		120	pF

## CHARACTERISTIC CURVES

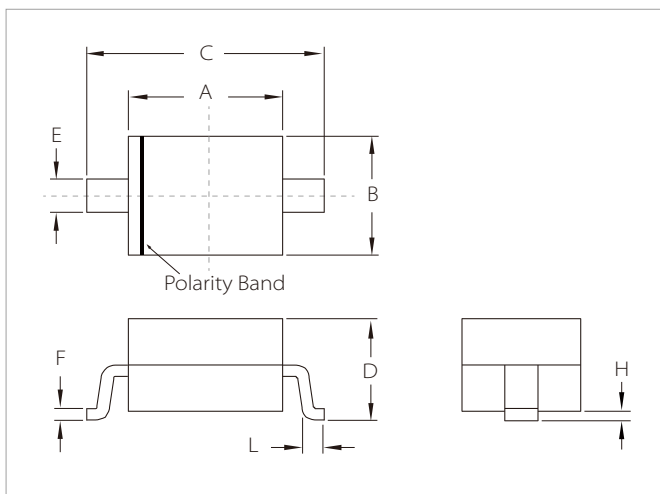
**Fig.1 Forward Characteristics**

**Fig.2 Reverse Characteristics**

**Fig.3 Capacitance Characteristics**

**Fig.4 Power Derating Curve**


## SOLDERING PARAMETERS

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

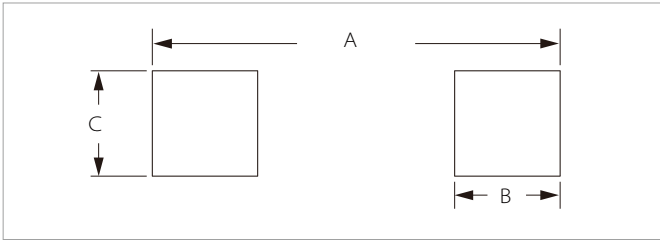


## SOD-323 PACKAGE INFORMATION



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	2.70	0.094	0.106
D	0.80	1.10	0.031	0.042
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	-	0.008	-

## 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
B5817WS	SOD-323	3000PCS	7"

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

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