

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

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

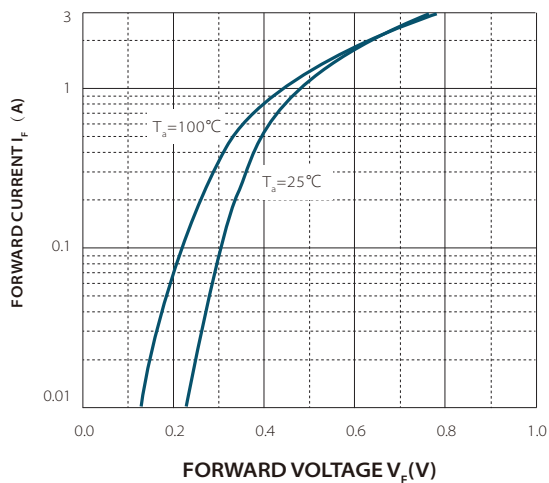
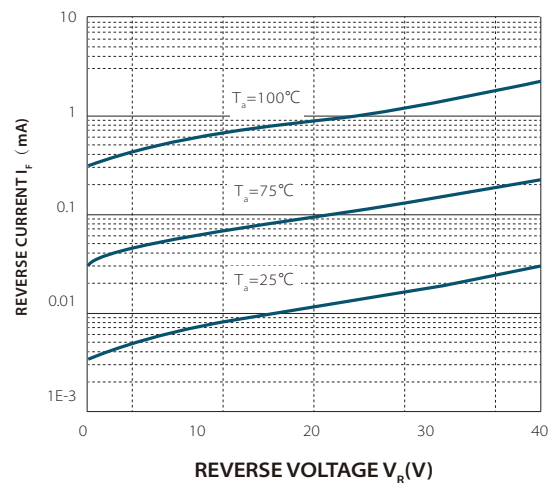
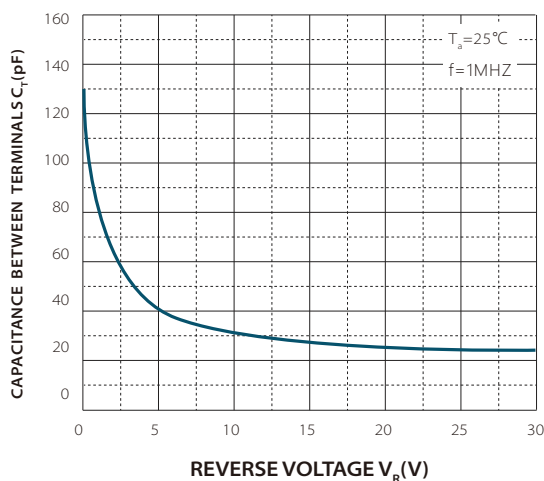
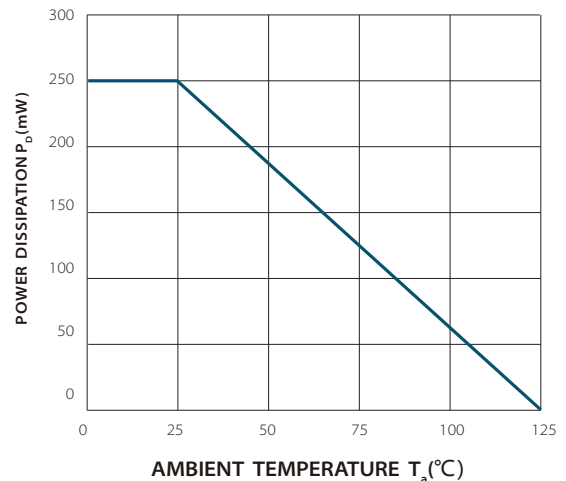
MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ($T_A=25^{\circ}\text{C}$)

Symbol	Parameter	Value	Unit
V_{RM}	Non-repetitive peak reverse voltage	30	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	21	
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 ($T_{amb} = 25^{\circ}\text{C}$)

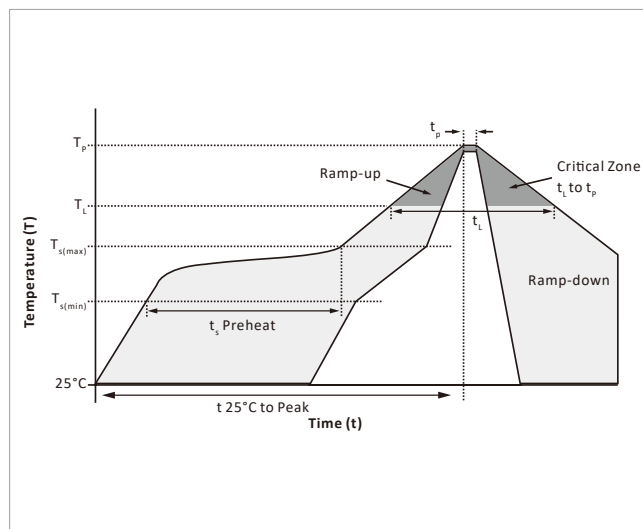
Symbol	Parameter	Test	Min.	Max.	Unit
V_{BR}	Reverse breakdown voltage	$I_R = 1\text{mA}$	30		V
I_R	Reverse voltage leakage current	$V_R = 20$		1	mA
V_F	Reverse leakage current	$I_F = 1\text{A}$		0.55	V
		$I_F = 3\text{A}$		0.87	
C_D	Diode capacitance	$V_F = 4\text{V}, f = 1\text{MHz}$		120	pF

CHARACTERISTIC CURVES

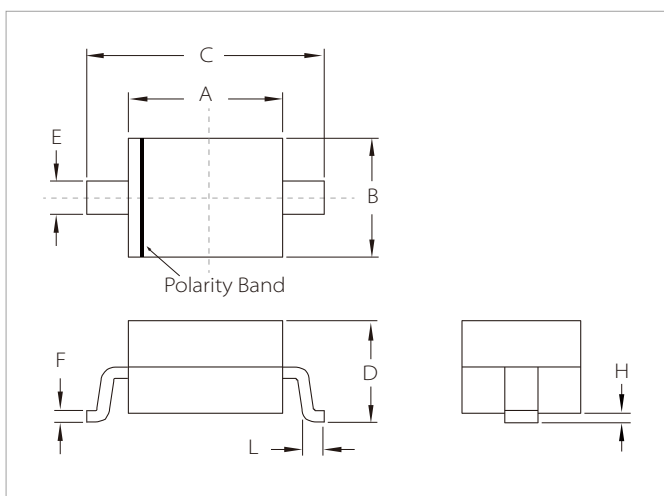
Fig.1 Forward Characteristics

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

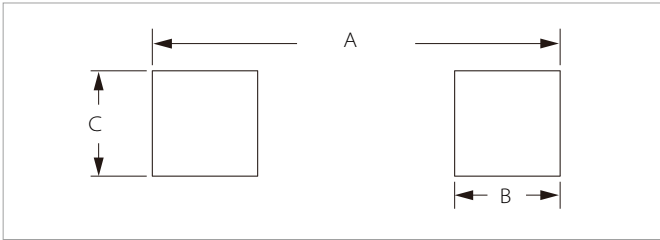


SOD-323 PACKAGE INFORMATION



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
B5818WS	SOD-323	3000PCS	7"

To find your local partner within Semiwell's website : www.semiwell.com.cn

© 2023 Semiwell Microelectronics Co.,Ltd.

The content of this document has been carefully checked and understood. However, neither Semiwell nor its subsidiaries assume any liability whatsoever for any errors or inaccuracies of this document and the consequences thereof. Published specifications are subject to change without notice. Product suitability for any area of application must ultimately be determined by the customer. In all cases, products must never be operated outside their published specifications. Semiwell does not guarantee the availability of all published products. This disclaimer shall be governed by substantive Chinese law and resulting disputes shall be settled by the courts at the place of business of Semiwell. Latest publications and a complete disclaimer can be downloaded from the Semiwell website. All trademarks recognized.