

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

Symbol	Parameter	Value	Unit
V_{RM}	Non-Repetitive Peak Reverse Voltage	40	V
V_{RRM}	Peak Repetitive Peak Reverse Voltage		
V_{RWM}	Working Peak Reverse Voltage		
V_R	DC Blocking Voltage	28	
$V_{R(RMS)}$	Rms Reverse Voltage		
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	$I_R=1\text{mA}$	40		V
I_R	Reverse Voltage Leakage Current	$V_R=20$		1	mA
V_F	Reverse Leakage Current	$I_F=1\text{A}$		0.6	V
		$I_F=3\text{A}$		0.9	
C_D	Diode Capacitance	$V_F=4\text{V}, f=1\text{MHz}$		120	pF

CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

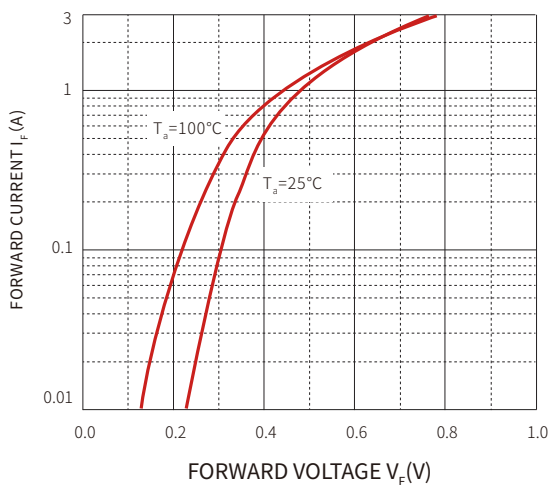


Fig.2 Reverse Characteristics

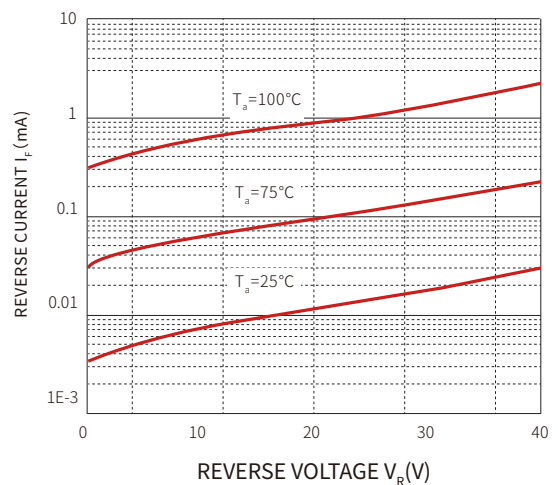


Fig.3 Capacitance Characteristics

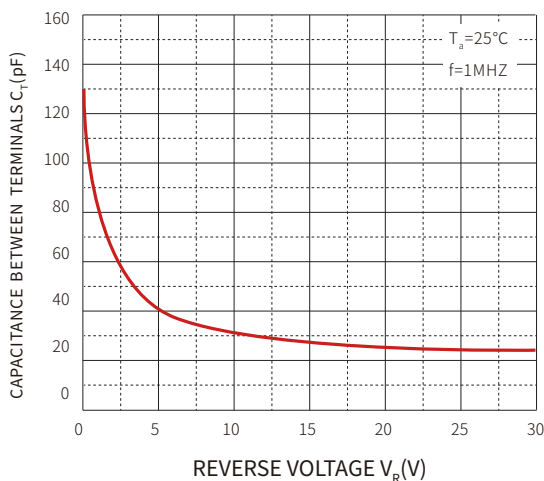
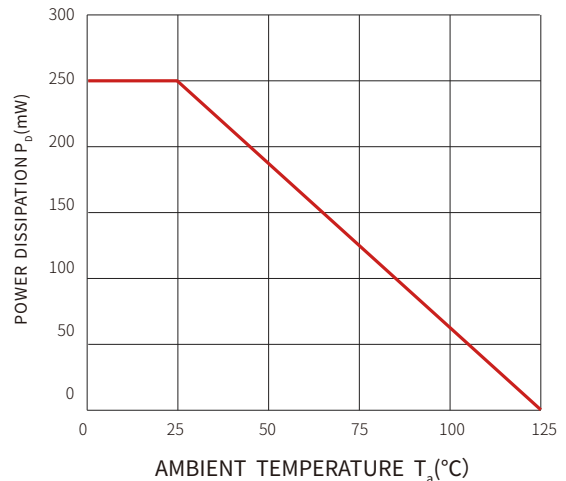
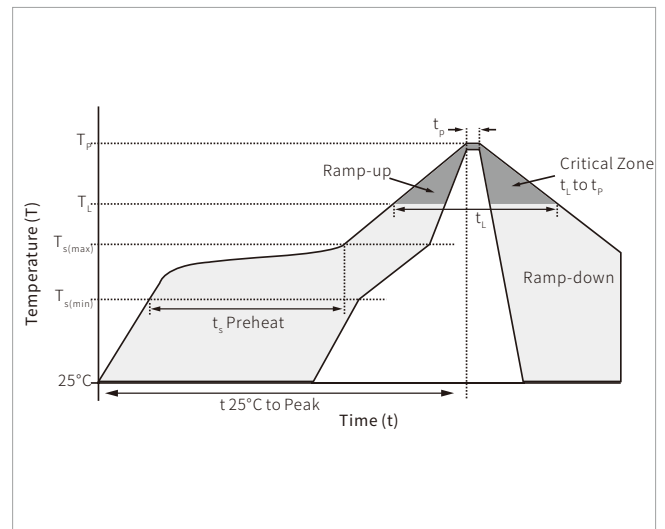


Fig.4 Power Derating Curve

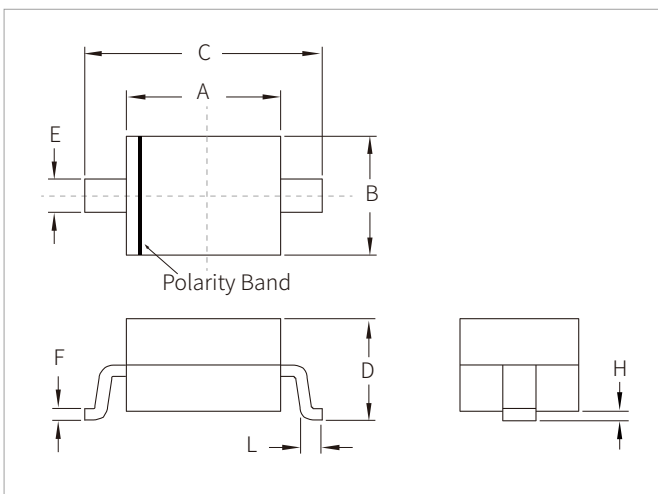


SOLDERING PARAMETERS

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_s)	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

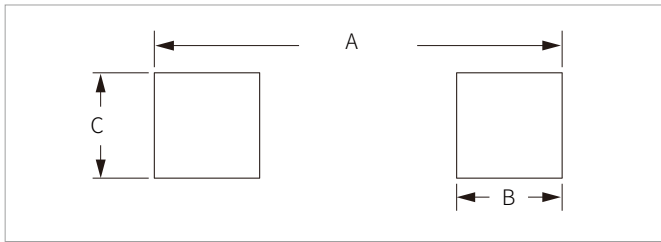


SOD-323 PACKAGE INFORMATION



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	2.35	2.70	0.093	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
1N5819WS	SOD-323	3000PCS	7"

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