

FEATURES

- | Fast Switching Device (TRR <4.0 nS)
- | Power Dissipation of 200mW
- | High Stability and High Reliability
- | Low reverse leakage



SOD-323

MECHANICAL DATA

- | Encapsulation: SOD-323 Small Outline Plastic
- | Package
- | Polarity: Color band denotes cathode end



Marking



Schematic Symbol

APPROVALS

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

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

Parameter	Symbol	Value	Unit
Reverse Voltage	V_R	75	V
Peak Reverse Voltage	V_{RM}	100	V
Average Rectified Output Current	I_O	150	mA
Peak Forward Surge Current @ $t_p=1\mu\text{s}$; $T_A=25^{\circ}\text{C}$	I_{FSM}	2	A
Power Dissipation	pd	200	mW
Working Inverse Voltage	W_{IV}	75	V
Non-repetitive Peak Forward Current	I_{FM}	300	mA
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	625	$^{\circ}\text{C}/\text{W}$
Operating junction temperature range	T_J	125	$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to 150	$^{\circ}\text{C}$

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Breakdown Voltage	B_V	$I_R=100\mu\text{A}$	100			V
		$I_R=5\mu\text{A}$	75			V
Reverse Leakage Current	I_R	$V_R=20\text{V}$			25	nA
		$V_R=75\text{V}$			1	μA
Forward Voltage	V_F	$I_F=1.0\text{mA}$			0.715	V
		$I_F=10\text{mA}$			0.855	V
		$I_F=50\text{mA}$			1.00	V
		$I_F=150\text{mA}$			1.25	V
Capacitance	C_J	$V_R=0\text{V}$, $f=1\text{MHz}$			2	pF
Reverse Recovery Time	t_{rr}	$I_F=I_R=10\text{mA}$, $R_L=100\Omega$, $I_{RR}=0.1\times I_R$			4	nS

CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

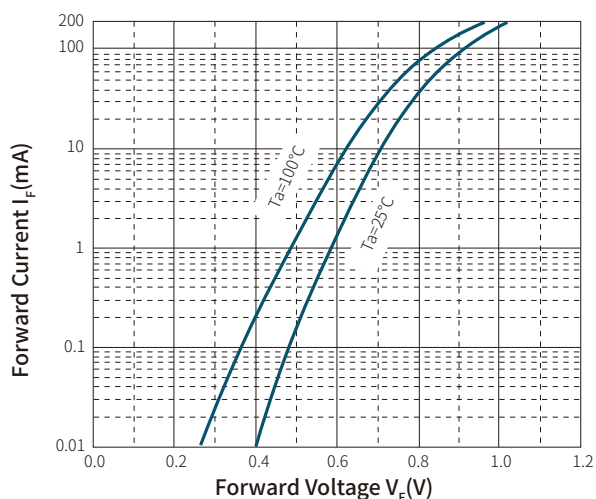


Fig.2 Reverse Characteristics

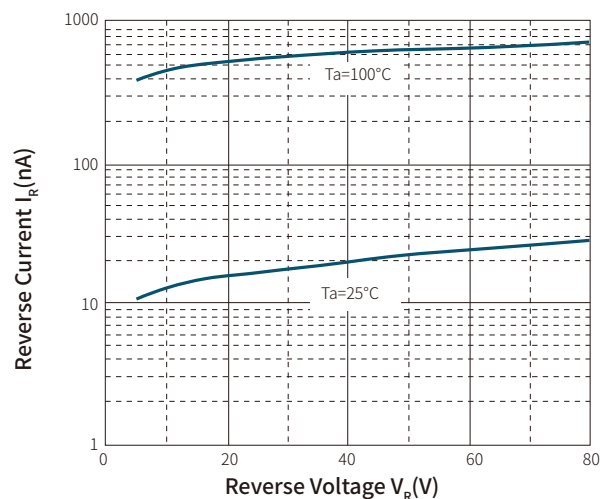
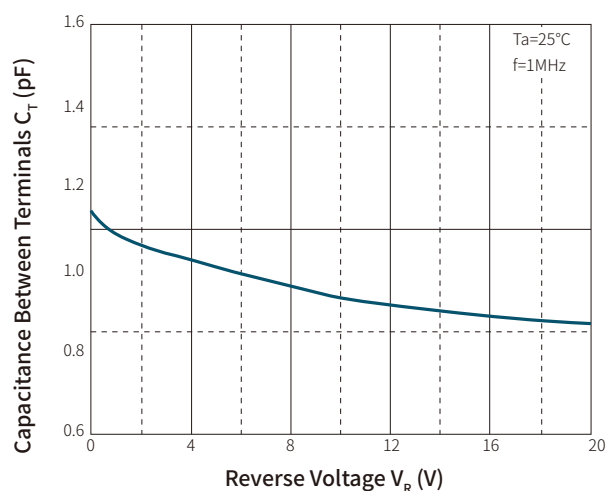
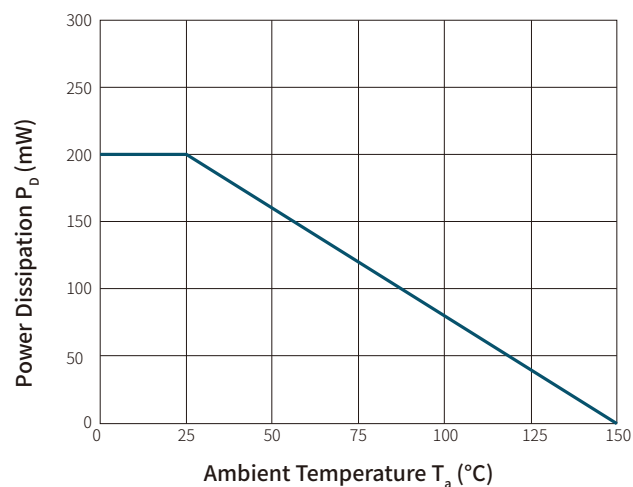
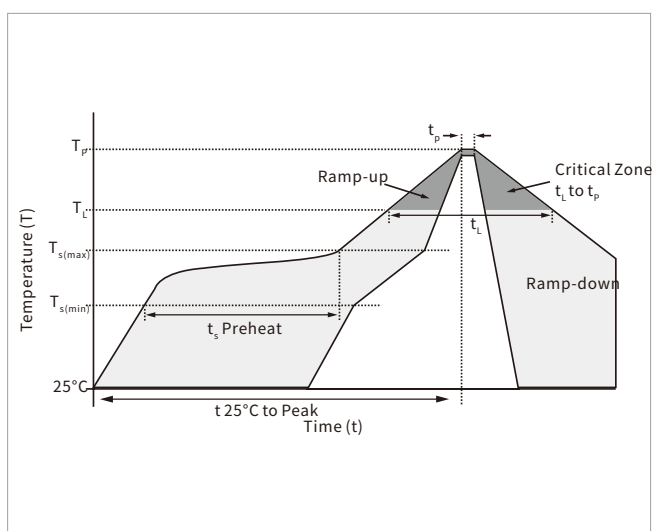


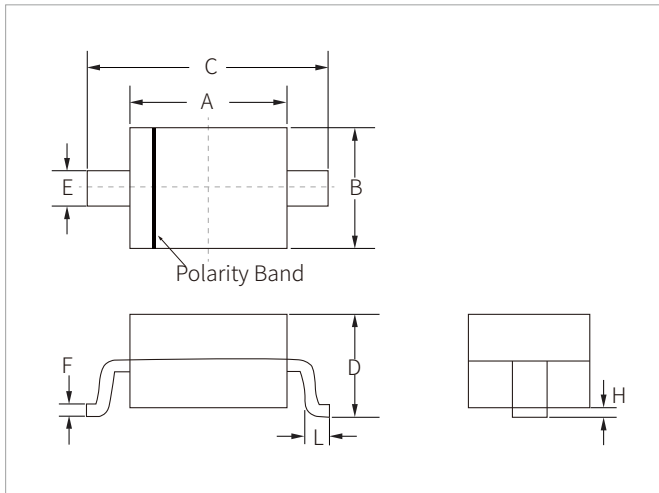
Fig.3 Capacitance Characteristics

Fig.4 Power Derating Curve


SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ($T_{s(\min)}$)	150 $^\circ\text{C}$
	Temperature Max ($T_{s(\max)}$)	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
$T_{s(\max)}$ 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 $^\circ\text{C}$

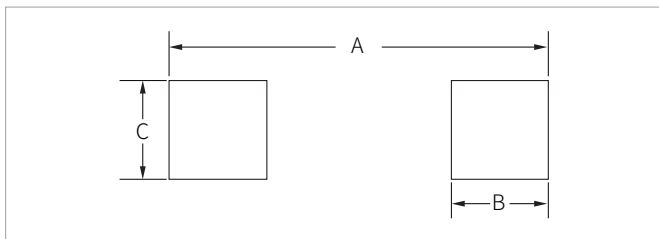


SOD-323 PACKAGE INFORMATION



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
1N4148WS	SOD-323	3000PCS	7"

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