

FEATURES

- | Fast Switching Device (TRR <4.0 nS)
- | Power Dissipation of 200mW
- | High Stability and High Reliability
- | Low Reverse Leakage
- | Meet AEC-Q101 Requirements



SOD-323



Marking



Schematic Symbol

MECHANICAL DATA

- | Encapsulation: SOD-323 Small Outline Plastic Package
- | Polarity: Color Band Denotes Cathode End
- | Mounting Position: Any

APPROVALS

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

MAXIMUM RATINGS (T_A=25°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	
Non-Repetitive Peak Forward Surge Current	I _{FSM}	t=1.0μs	2.0	A
		t=1.0s	1.0	A
Power Dissipation	P _{tot}	200	mW	
Non-repetitive Peak Forward Current	I _{FM}	300	mA	
Thermal Resistance from Junction to Ambient	R _{θJA}	625	°C/W	
Operating Junction Temperature Range	T _J	150	°C	
Storage Temperature Range	T _{STG}	-55 to 150	°C	

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

Parameter	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Forward Voltage	V_F	$I_F=10\text{mA}$			1.0	V
Instantaneous Reverse Current	I_R	$V_R=20\text{V}$			25	nA
		$V_R=75\text{V}$			5	μA
		$V_R=20\text{V}, T_J=150^\circ\text{C}$			50	μA
Capacitance	C_{tot}	$V_F=V_R=0\text{V}$			4	pF
Reverse Recovery Time	t_{rr}	$I_F=10\text{mA}, V_R=6.0\text{V}, I_R=1\text{mA}, R_L=100\Omega$			4	ns
Voltage Rise when Switching On tested	V_{fr}	$t_p=0.1\mu\text{s}$ $f_p=5$ to 100kHz Time $<30\text{ns}$			2.5	V
Total Capacitance	C_T	$V_R=0\text{V}, f=1\text{MHz}$			2.0	pF

CHARACTERISTIC CURVES

Fig.1 Forward Characteristics

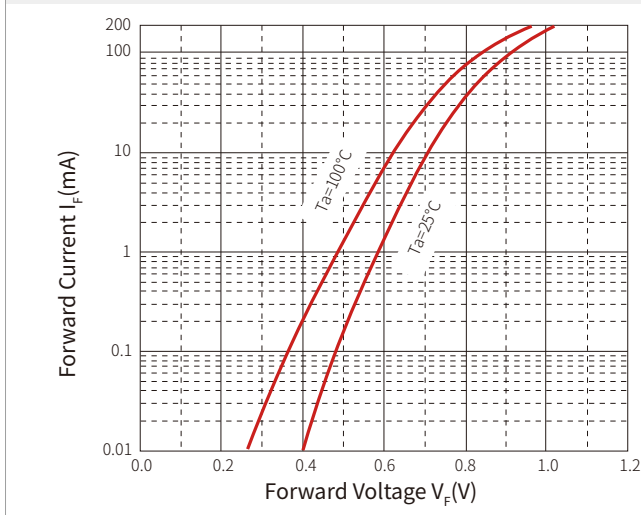


Fig.2 Reverse Characteristics

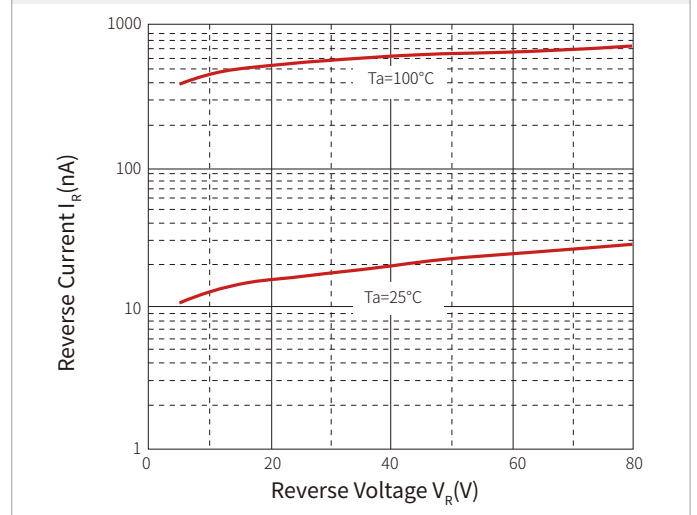
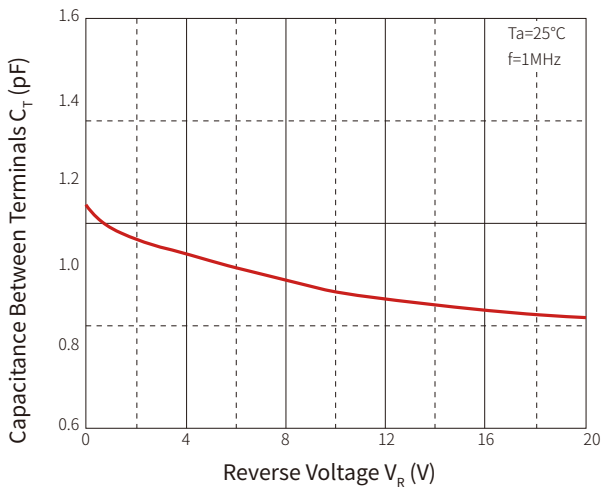
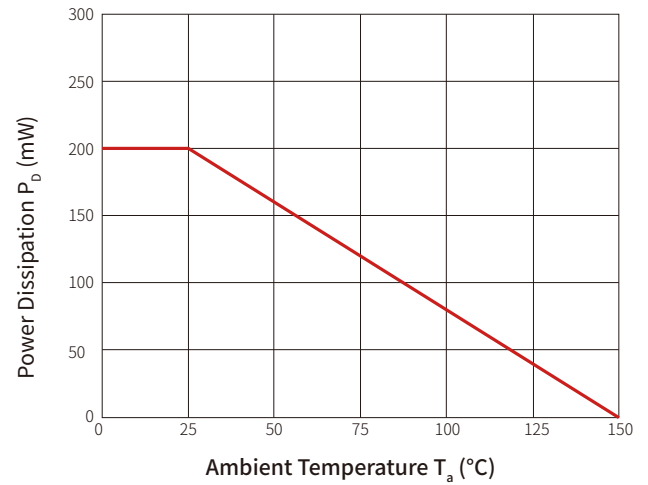
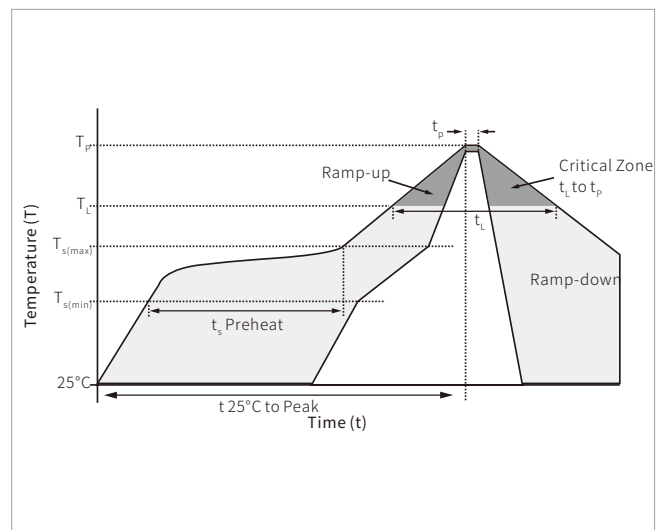


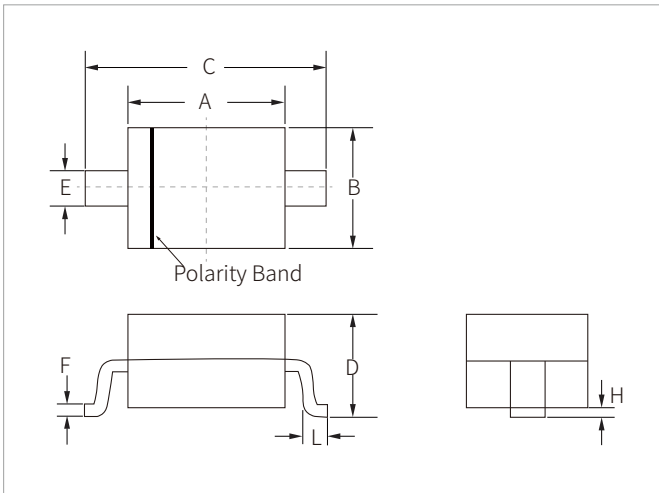
Fig.3 Capacitance Characteristics

Fig.4 Power Derating Curve


SOLDERING PARAMETERS

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

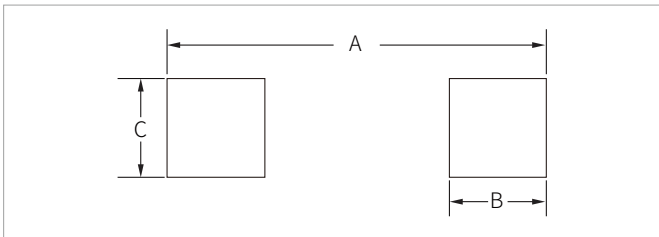


SOD-323 PACKAGE INFORMATION



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	2.35	2.75	0.093	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
1N4148WSQ	SOD-323	3000PCS	7"

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