SURFACE MOUNT FAST SWITCHING DIODE

Features

- Fast Switching Speed
- Low Forward Voltage: Maximum of 0.715V at 1mA
- Fast Reverse Recovery: Maximum of 4ns
- Low Capacitance: Maximum of 1.5pF
- Surface Mount Package Ideally Suited for Automated Insertion
- For General Purpose Switching Applications
- Totally Lead-Free & Fully RoHS Compliant (Notes 1)
- Halogen and Antimony “Green” Device (Note 2)
- Qualified to AEC-Q101 Standards for High Reliability
- PPAP Capable (Note 4)

PINNING

PIN	DESCRIPTION
1	Cathode
2	Anode

Simplified outline SOD-323W and symbol

Automotive Grade

Mechanical Date

- Case: SOD-323W
- Case Material: Molded Plastic, “Green” Molding Compound; UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solderable per MIL-STD-750, Method 2026

Maximum Ratings(TA=+25℃unless other otherwise specified)

Parameter		Symbols	1N4148WB	Units
Maximum Repetitive Peak Reverse oltage		V_{RRM}	100	V
Maximum RMS voltage		V_{RMS}	71	V
Average Rectified Forward Current		$I_{F(AV)}$	300	mA
Non-reptitive Peak Forward Surge Current	at 1s	I_{FSM}	1	A
	at 1us		2	
Total Power Dissipation		P_{tot}	400	mW
Typical Thermal Resistance (4)		$R_{\theta JA}$	315	℃/W
		$R_{\theta JC}$	100	
Operating and Storage Temperature Range		T_J, T_{STJ}	~65~+150	℃

Electrical Characteristics(TA=+25℃ unless other otherwise specified)

Parameter		Symbols	1N4148WB	Units
Reverse Breakdown voltage	at 1 m A	$V_{(BR)R}$	75	V
Maximum Forward Voltage	at 1 mA	V_F	0.715	V
	at 10 mA		0.855	
	at 50 mA		1.00	
	at 150 mA		1.25	
Peak Reverse Current	at V=20V Tj=25°C	I_R	0.025	uA
	at V=75V Tj=25°C		2.5	
	at V=25V Tj=150°C		30	
	at V=75V Tj=150°C		50	
Typical Juncition Capacitance	f=1MHz,VR=0V	C_j	1.5	pF
Maximum Reverse Recovery time(5)		t_{rr}	4	ns

Notes
1.No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
2.Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine,<900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
3.Automotive products are AEC-Q101 qualified and are PPAP capable. Automotive, AEC-Q10x and standard products are electrically and thermally the same,except where specified.
4.P.C.B. mounted with 5*5mm copper pad areas.
5.Measured with I_F=I_R=10mA,Irr=0.1xIR,R_L=100Ω.

Fig.1 Power Derating Curve

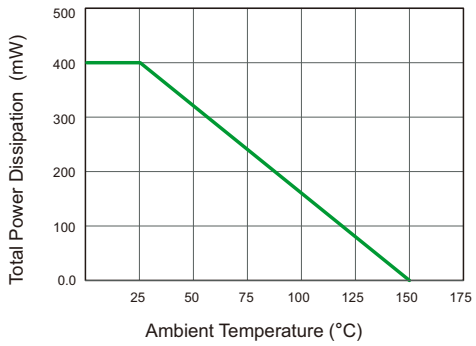


Fig.2 Typical Reverse Characteristics

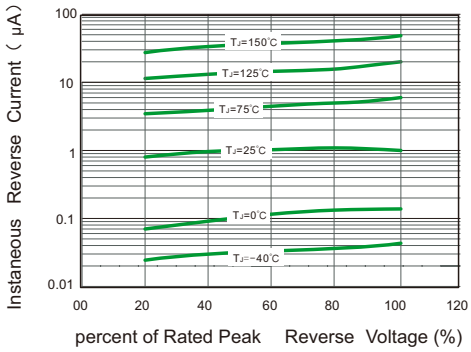


Fig.3 Typical Instaneous Forward Characteristics

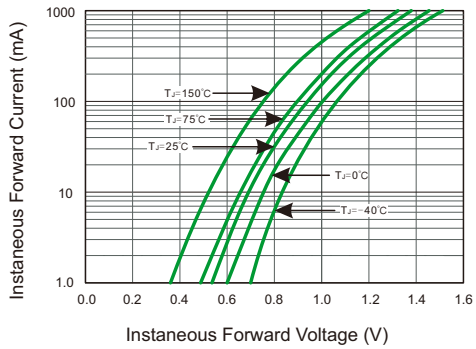
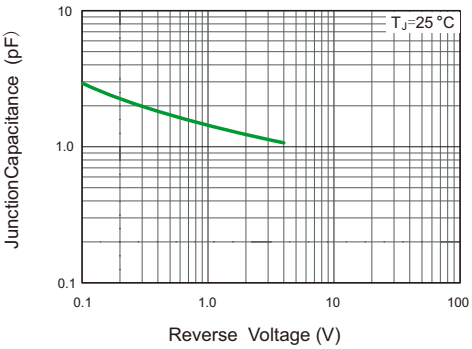


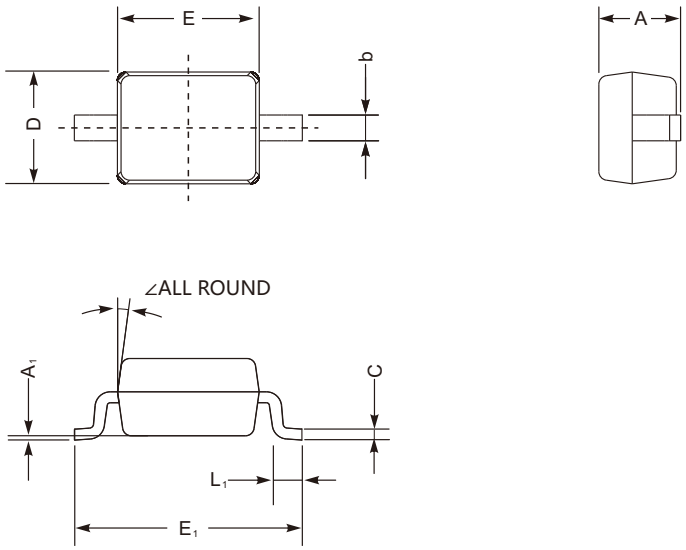
Fig.4 Typical Junction Capacitance



PACKAGE OUTLINE

Plastic surface mounted package; 2 leads

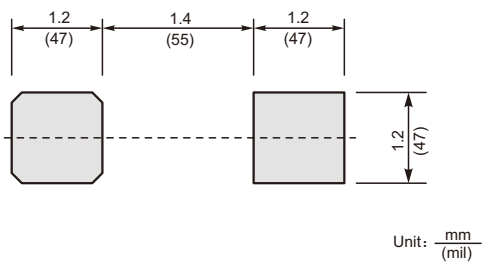
SOD-323W



SOD-323W mechanical data

UNIT		A	C	D	E	E_1	b	L_1	A_1	∠
mm	max	1.1	0.15	1.4	1.8	2.75	0.4	0.45	0.2	9°
	min	0.8	0.08	1.2	1.4	2.55	0.25	0.2	—	
mil	max	43	5.9	55	70	108	16	16	8	
	min	32	3.1	47	55	100	9.8	7.9	—	

The recommended mounting pad size



Marking

Type number	Marking code
1N4148WB	T4