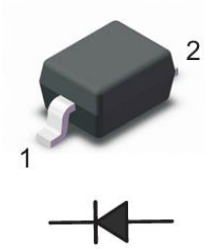
1N4148WS

Fast Switching Diode

Features

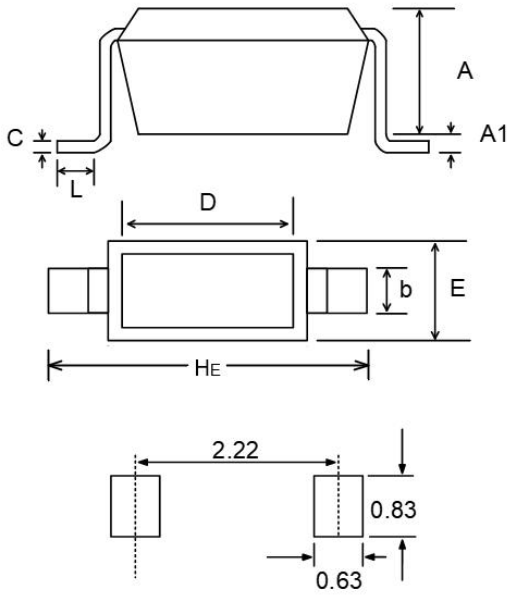


- Fast Switching Device
- For surface mounted applications
- Low power loss, high efficiency
- Built-in strain relief, ideal for automated placement
- Plastic package has underwriters laboratory flammability 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Case: SOD-323
- Polarity: Color band denotes positive end (cathode) except bi-directional models

Applications

- Instrument
- BCM
- SRS
- Muti-media
- CRC

Dimensions (SOD-323)



Symbol	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.80	1.00	0.031	0.040
A1	0.00	0.10	0.000	0.004
b	0.25	0.4	0.012	0.016
C	0.089	0.177	0.005	0.007
D	1.60	1.80	0.066	0.070
E	1.15	1.35	0.049	0.053
HE	2.30	2.70	0.098	0.105
L	0.08	--	0.003	--

Maximum Ratings and Thermal Characteristics(T_A=25℃ unless otherwise noted)

Characteristic		Symbol	Value	Unit
Power Dissipation (Note 2)		P_D	400	mW
Maximum RMS voltage		V_{RMS}	75	V
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage		V_{RRM} V_{RWM} V_R	100	V
Non-repetitive Peak Forward Surge Current	at 1s at 1ms at 1μs	I_{FSM}	0.5 1 4	A
Average Rectified Forward Current		$I_{F(AV)}$	150	mA
Thermal Resistance Junction to Ambient Air (Note 2)		$R_{\theta JA}$	340	℃/W
Operating and Storage Temperature Range		T_J,T_{STG}	-55 to +150	℃

Electrical Characteristics (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Condition	Min.	Max.	Unit
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	I_R = 1.0μA	75	--	V
Forward Voltage	V_{FM}	I_F = 1.0mA I_F = 10mA I_F = 50mA I_F = 150mA	--	0.715 0.855 1.0 1.25	V
Peak Reverse Current (Note 1)	I_{RM}	V_R = 75V V_R = 75V, T_J = +150°C V_R = 25V, T_J = +150°C V_R = 20V	--	1.0 50 30 0.025	μA
Total Capacitance	C_T	V_R = 0, f = 1.0MHz	--	2.0	pF
Reverse Recovery Time	t_{rr}	I_F = I_R = 10mA, I_{RR}= 0.1 x I_R, R_L = 100Ω	--	4.0	ns

Notes:

1. Short duration pulse test used to minimize self-heating effect.
2. Part mounted on FR-4 PC board with recommended pad layout.

Ratings and Characteristic Curves (T_A=25℃ unless otherwise noted)

Figure 1. Power Derating Curve

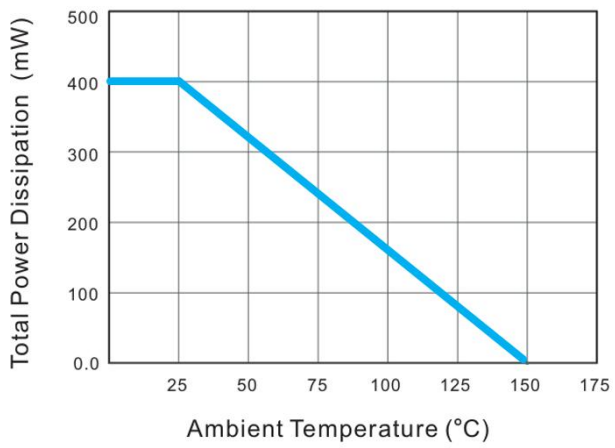


Figure 2. Typical Reverse Characteristics

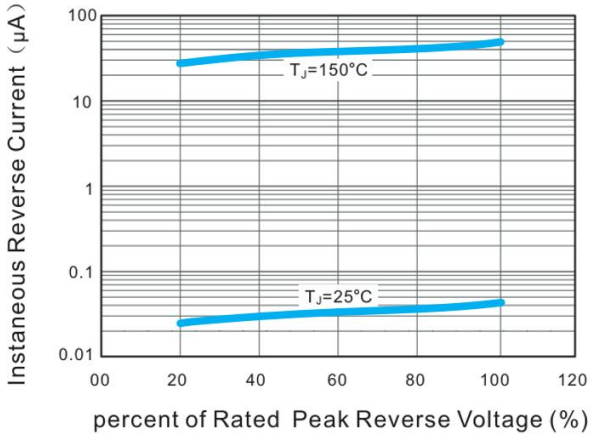


Figure 3.Typical Instaneous Forward Characteristics

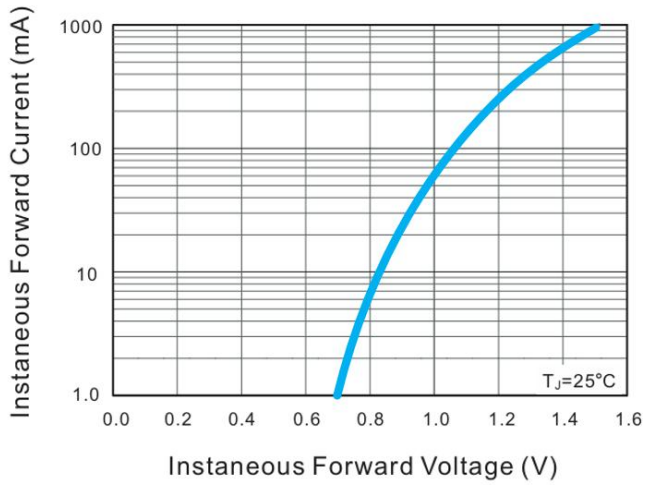
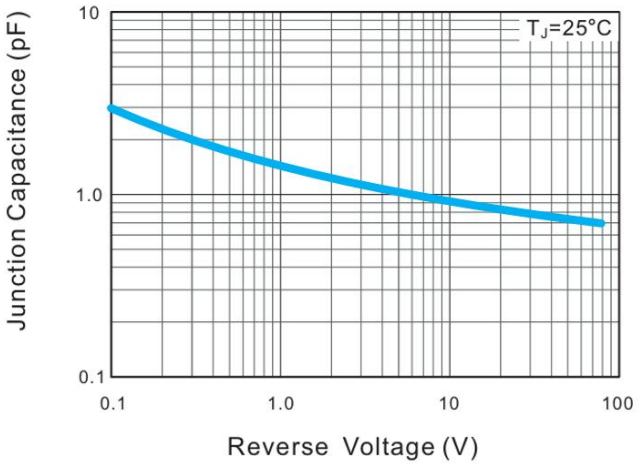
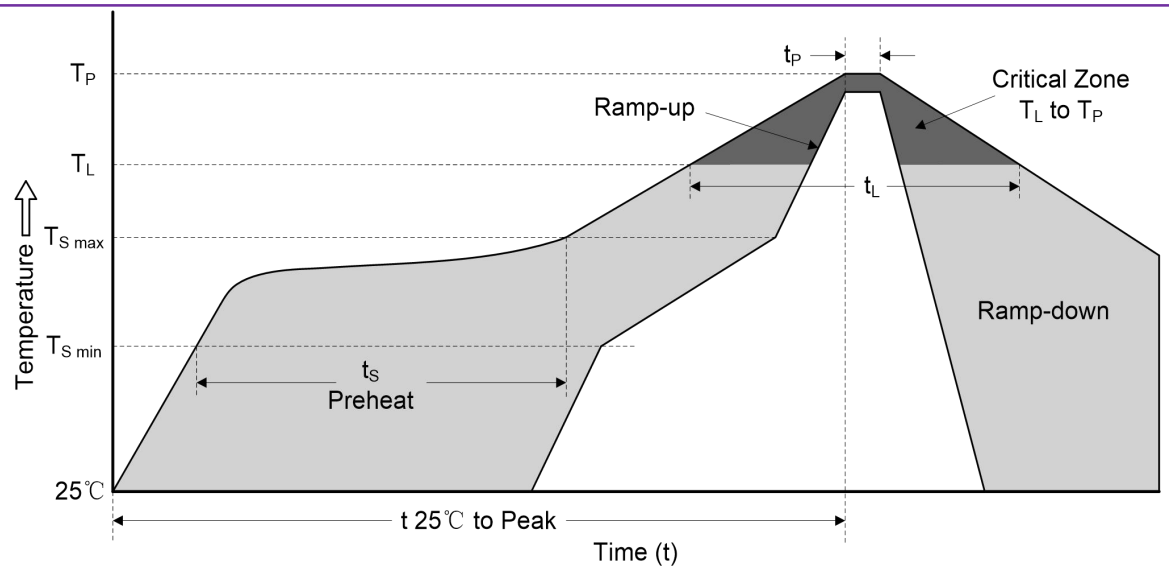


Figure 4. Typical Junction Capacitance



Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min ($T_{S\,min}$)	150℃
	-Temperature Max ($T_{S\,max}$)	200℃
	-Time (min to max) (t_S)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3℃/second max.
$T_{S\,max}$ to T_L -Ramp-up Rate		3℃/second max.
Reflow	-Temperature (T_L) (Liquidus)	217℃
	-Time (min to max) (t_S)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)℃
Time within 5℃ of actual Peak Temperature (t_P)		20-40 seconds
Ramp-down Rate		6℃/second max.
Time 25℃ to Peak Temperature(T_P)		8 minutes max.
Do not exceed		260℃