

200mW High Speed SMD Switching Diode

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Moisture sensitivity level: level 1, per J-STD-020
- RoHS Compliant

APPLICATIONS

- Switching mode power supply (SMPS)
- Adapters
- Lighting application
- On-board DC/DC converter

MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 4.85mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
V_{RRM}	100	V
V_F at $I_F = 100\text{mA}$	1	V
T_J	150	°C
Package	SOD-323F	
Configuration	Single die	


SOD-323F


ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)					
PARAMETER	SYMBOL	1N4148WS	1N4448WS	1N914BWS	UNIT
Marking code on the device		S1	S2	S3	
Power dissipation	P_D	200			mW
Repetitive peak reverse voltage	V_{RRM}	100			V
Forward current	I_F	150			mA
Non-repetitive peak forward current	I_{FRM}	300			mA
Junction temperature range	T_J	-65 to +150			°C
Storage temperature range	T_{STG}	-65 to +150			°C

THERMAL PERFORMANCE			
PARAMETER	SYMBOL	TYP	UNIT
Junction-to-ambient thermal resistance	$R_{\theta JA}$	625	°C/W

ELECTRICAL SPECIFICATIONS ($T_A = 25^\circ\text{C}$ unless otherwise noted)						
PARAMETER		CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage ⁽¹⁾	1N4448WS 1N914BWS	$I_F = 5\text{ mA}, T_J = 25^\circ\text{C}$	V_F	0.62	0.72	V
	1N4148WS	$I_F = 10\text{ mA}, T_J = 25^\circ\text{C}$		-	1.00	V
	1N4448WS 1N914BWS	$I_F = 100\text{ mA}, T_J = 25^\circ\text{C}$		-	1.00	V
Reverse voltage	$I_R = 5\mu\text{A}, T_J = 25^\circ\text{C}$		V_R	75	-	V
	$I_R = 100\mu\text{A}, T_J = 25^\circ\text{C}$			100	-	V
Reverse current @ rated V_R ⁽²⁾	$V_R = 20\text{V}, T_J = 25^\circ\text{C}$		I_R	-	25	nA
	$V_R = 75\text{V}, T_J = 25^\circ\text{C}$			-	5	μA
Junction capacitance	1MHz, $V_R = 0\text{V}$		C_J	-	4	pF
Reverse recovery time	$I_F = 10\text{mA}, I_R = 60\text{mA}, R_L = 100\Omega, I_{RR} = 1\text{mA}$		t_{rr}	-	4	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION		
ORDERING CODE⁽¹⁾	PACKAGE	PACKING
1N4148WS RRG	SOD-323F	3K / 7" Reel
1N4148WS RR	SOD-323F	3K / 7" Reel
1N4148WS R9G	SOD-323F	10K / 13" Reel
1N4148WS R9	SOD-323F	10K / 13" Reel
1N4448WS RRG	SOD-323F	3K / 7" Reel
1N4448WS RR	SOD-323F	3K / 7" Reel
1N4448WS R9G	SOD-323F	10K / 13" Reel
1N4448WS R9	SOD-323F	10K / 13" Reel
1N914BWS RRG	SOD-323F	3K / 7" Reel
1N914BWS RR	SOD-323F	3K / 7" Reel
1N914BWS R9G	SOD-323F	10K / 13" Reel
1N914BWS R9	SOD-323F	10K / 13" Reel

Notes:

1. "G" means green compound (halogen-free according to IEC 61249-2-21)

CHARACTERISTICS CURVES

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

Fig.1 Forward Voltage VS. Forward Current

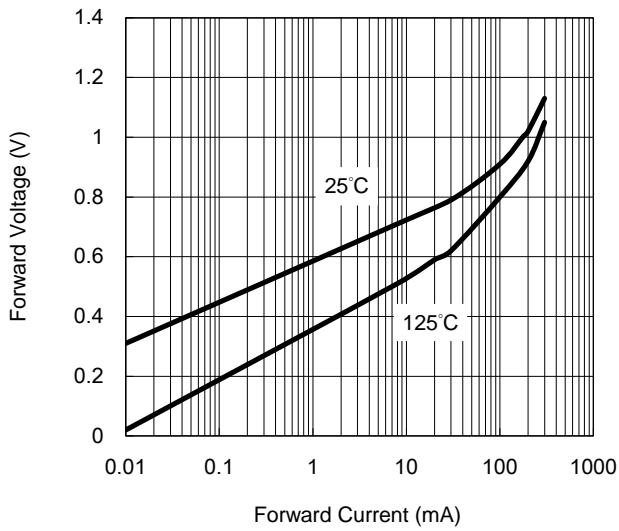


Fig.2 Reverse Current vs Reverse Voltage

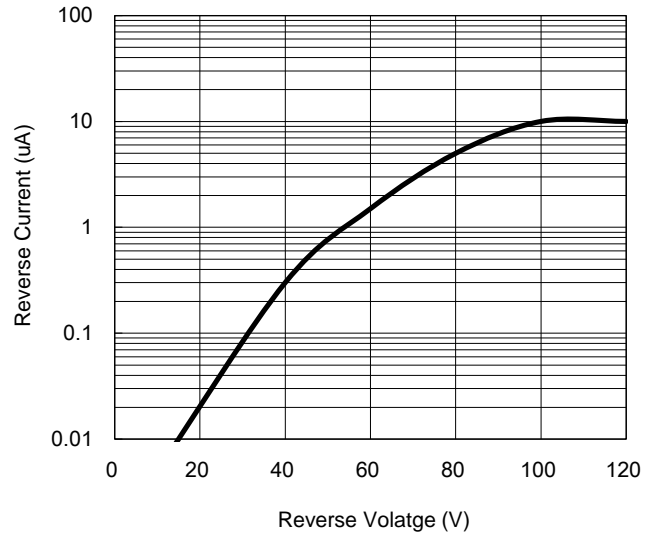


Fig.3 Admissible Power Dissipation Curve

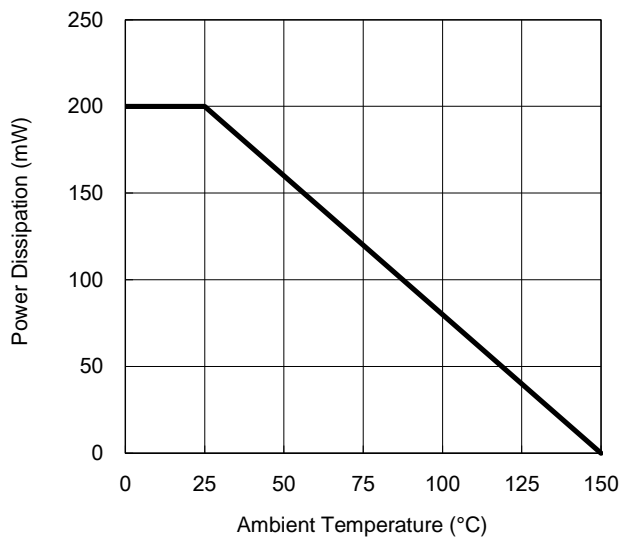
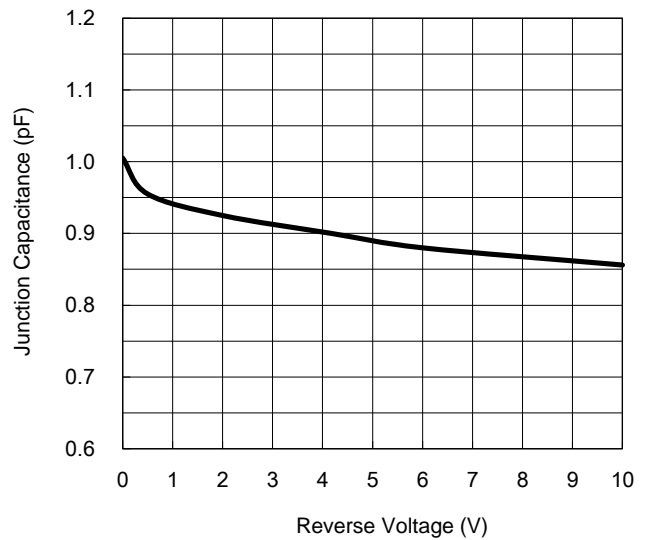
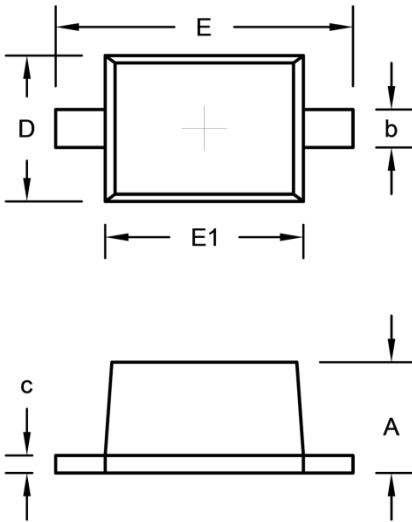


Fig.4 Typical Junction Capacitance



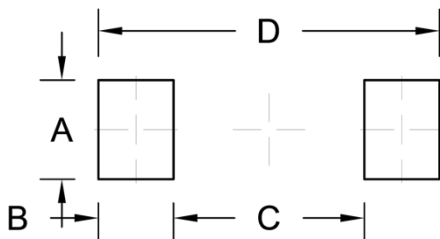
PACKAGE OUTLINE DIMENSIONS

SOD-323F



DIM.	Unit (mm)		Unit (inch)	
	Min.	Max.	Min.	Max.
A	0.80	1.10	0.031	0.043
b	0.25	0.40	0.010	0.016
c	0.05	0.25	0.002	0.010
D	1.15	1.35	0.045	0.053
E	2.30	2.80	0.091	0.110
E1	1.60	1.80	0.063	0.071

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	0.83	0.033
B	0.63	0.025
C	1.60	0.063
D	2.86	0.113

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