200mW High Speed SMD Switching Diode

FEATURES

- Low power loss, high efficiency
- Ideal for automated placement
- High surge current capability
- Compliant to RoHS directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21

APPLICATIONS

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

MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94 V-0 flammability rating
- Moisture sensitivity level: level 1, per J-STD-020
- Packing code with suffix "G" means green compound (halogen-free)
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 1A whisker test
- Polarity: Indicated by cathode band
- Weight: 4.85 ± 0.5 mg (approximately)

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
V_{RRM}	100	V
I_{FRM}	300	mA
V_F at I_F=100mA	1.0	V
T_J MAX.	150	°C
Package	SOD-323F	
Configuration	Single dice	

Pb-Free RoHS COMPLIANT

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

PARAMETER	SYMBOL	1N4148 WS	1N4448 WS	1N914B WS	UNIT
Marking code on the device		W2			
Power dissipation	P_D	200			mW
Repetitive peak reverse voltage	V_{RRM}	100			V
Forward current	I_F	100			mA
Continue forward current	I_O	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	LIMIT	UNIT
Junction-to-ambient thermal resistance	$R_{\Theta JA}$	625	°C/W

ELECTRICAL SPECIFICATIONS (T_A = 25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage (1)	1N4448WS,1N914BWS I_F = 5 mA, T_J = 25°C	V_F	0.62	0.72	V
	1N4148WS I_F =10 mA, T_J = 25°C		-	1.00	
	1N4448WS,1N914BWS I_F =100 mA, T_J = 25°C		-	1.00	
Reverse voltage	I_R= 5μA, T_J = 25°C	V_R	75	-	V
	I_R= 100μA, T_J = 25°C		-	100	
Reverse current @ rated V_R (2)	V_R= 20V T_J = 25°C	I_R	-	25	nA
	V_R= 75V T_J = 25°C		-	5	μA
Junction capacitance	1 MHz, V_R=0V	C_J	-	4	pF
Reverse recovery time	I_F=10mA, I_R=60mA, R_L=100Ω, I_{RR}=1mA	t_{rr}	-	4	ns

Notes:

1. Pulse test with PW=0.3 ms
2. Pulse test with PW=30 ms

ORDERING INFORMATION

PART NO.	PACKING CODE	PACKING CODE SUFFIX(*)	PACKAGE	PACKING
1NxxxxWS (Note 1)	RR	G	SOD-323F	3K / 7" Reel
	R9			10K / 13" Reel

Notes:

1. "xxxx" is device code from "4148" to "914B"

*: optional available

EXAMPLE

EXAMPLE P/N	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
1N4148WS RRG	1N4148WS	RR	G	Green compound

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig. 1 Forward Voltage VS. Forward Current

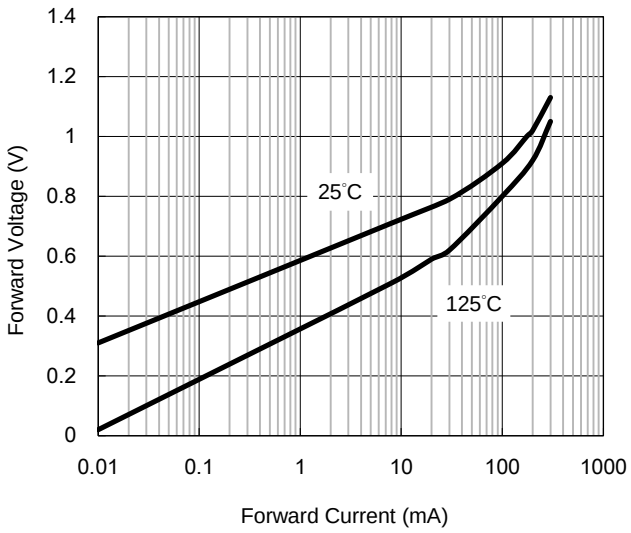


Fig. 2 Reverse Current vs Reverse Voltage

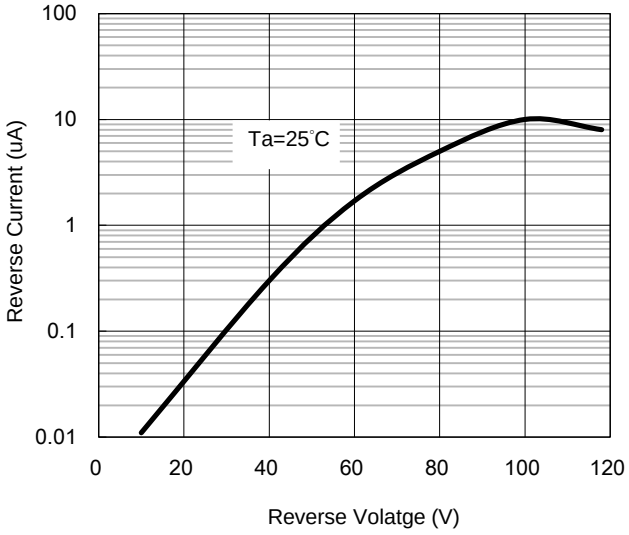


Fig. 3 Admissible Power Dissipation Curve

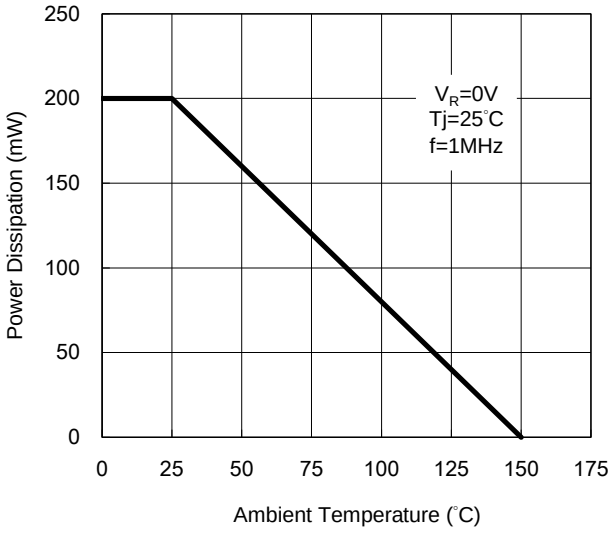
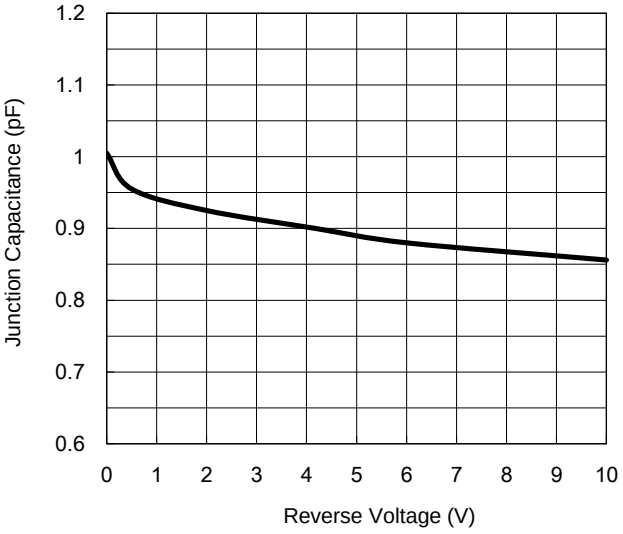
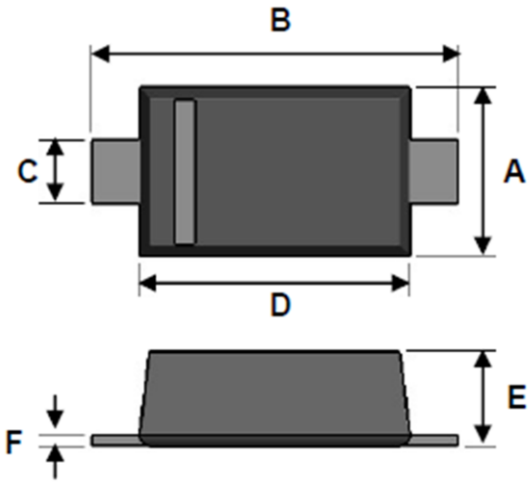


Fig.4 Typical Junction Capacitance



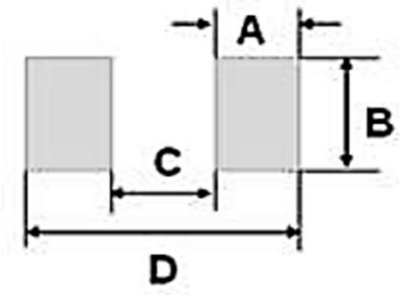
PACKAGE OUTLINE DIMENSION

SOD-323F



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

SUGGEST PAD LAYOUT



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

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