

150mA, 100V 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: 4.60mg (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	150	mA
V_{RRM}	100	V
I_{FSM}	300	mA
V_F at $I_F = 100\text{mA}$	1	V
$T_{J\text{MAX}}$	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	$t = 1\text{s}$	1	-	0.5	A	
	$t = 1\mu\text{s}$	2	0.5	1	A	
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	3,000 / 7" Tape & Reel
1N4148WS RR	SOD-323F	3,000 / 7" Tape & Reel
1N4148WS R9G	SOD-323F	10,000 / 13" Tape & Reel
1N4148WS R9	SOD-323F	10,000 / 13" Tape & Reel
1N4448WS RRG	SOD-323F	3,000 / 7" Tape & Reel
1N4448WS RR	SOD-323F	3,000 / 7" Tape & Reel
1N4448WS R9G	SOD-323F	10,000 / 13" Tape & Reel
1N4448WS R9	SOD-323F	10,000 / 13" Tape & Reel
1N914BWS RRG	SOD-323F	3,000 / 7" Tape & Reel
1N914BWS RR	SOD-323F	3,000 / 7" Tape & Reel
1N914BWS R9G	SOD-323F	10,000 / 13" Tape & Reel
1N914BWS R9	SOD-323F	10,000 / 13" Tape & 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

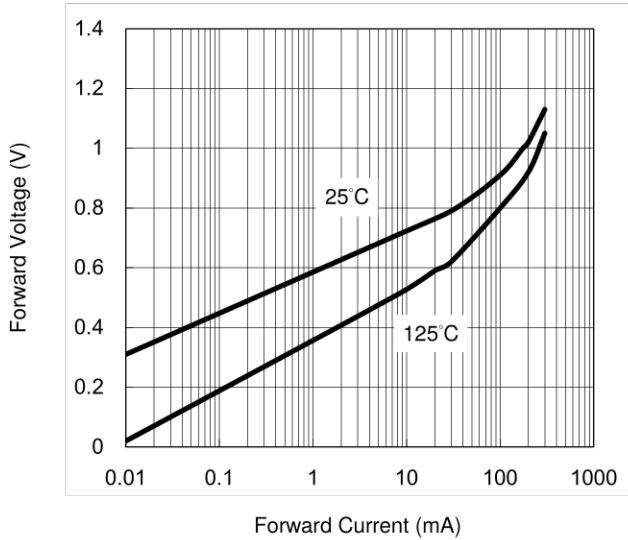


Fig.2 Reverse Current vs Reverse Voltage

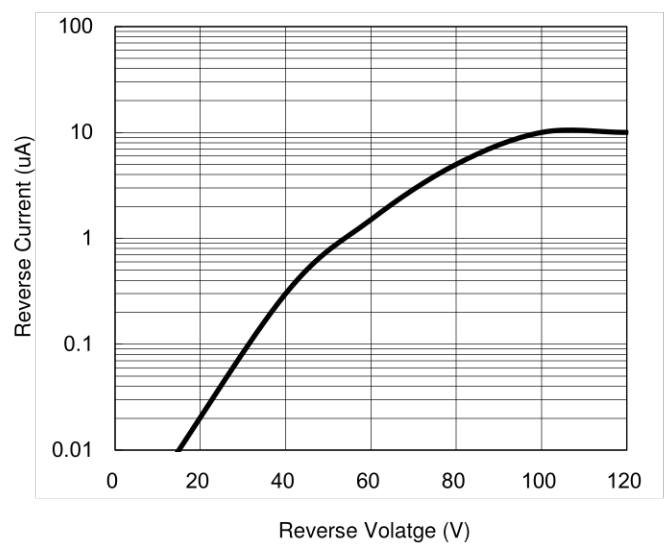


Fig.3 Admissible Power Dissipation Curve

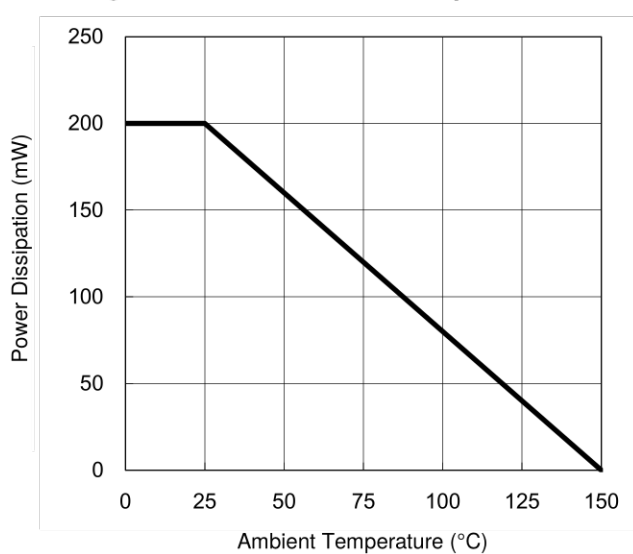
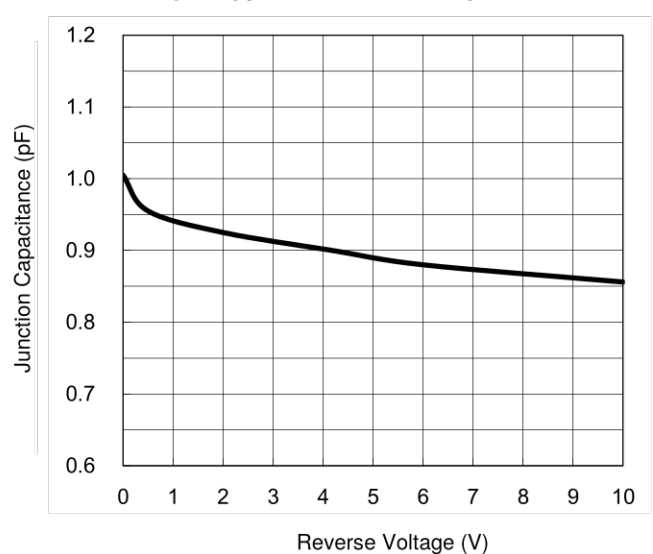
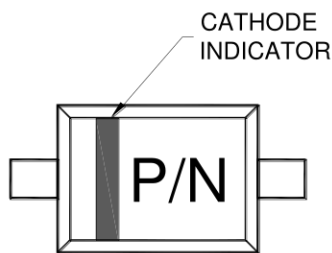
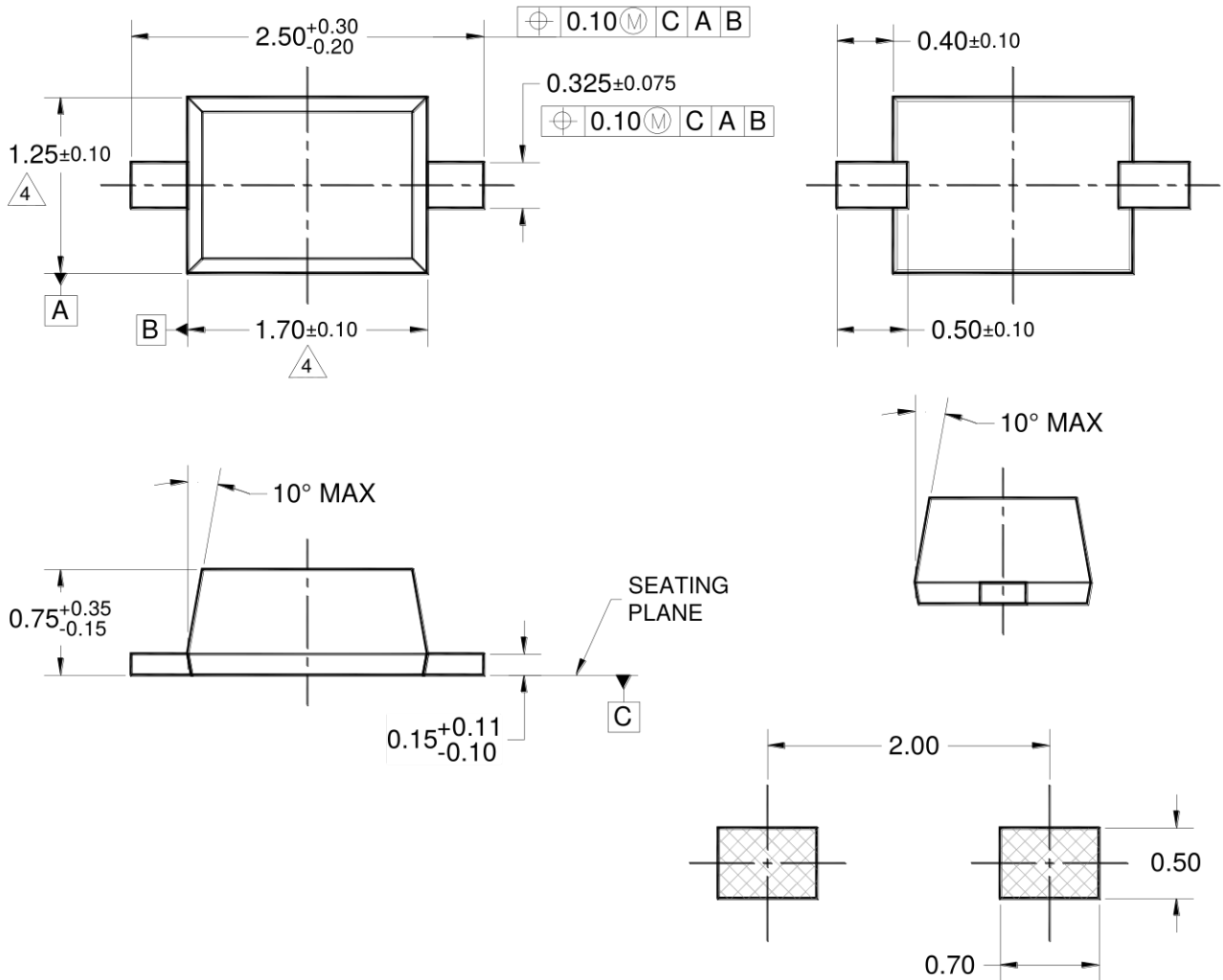


Fig.4 Typical Junction Capacitance



PACKAGE OUTLINE DIMENSIONS

SOD-323F



MARKING DIAGRAM

P/N = MARKING CODE

SUGGESTED PAD LAYOUT

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. PACKAGE OUTLINE REFERENCE: EIAJ ED-7500A-1, SC-90.

4. MOLDED PLASTIC BODY LATERAL DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-SOD323F-018 REV A.

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