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 = 100mA	1	V
$T_{J\ MAX}$	150	°C
Package	SOD-323F	
Configuration	Single die	

Pb-Free RoHS COMPLIANT

SOD-323F

ABSOLUTE MAXIMUM RATINGS (T_A = 25°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 = 1s	I_{FSM}	1	-	0.5	A
	t = 1us		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°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	V
	1N4448WS 1N914BWS	I_F =100 mA, T_J = 25°C		-	1.00	V
Reverse voltage		I_R = 5μA, T_J = 25°C	V_R	75	-	V
		I_R = 100μA, T_J = 25°C		100	-	V
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		1MHz, 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 = 0.3ms
2. Pulse test with PW = 30ms

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°C unless otherwise noted)

Fig.1 Forward Voltage VS. Forward Current

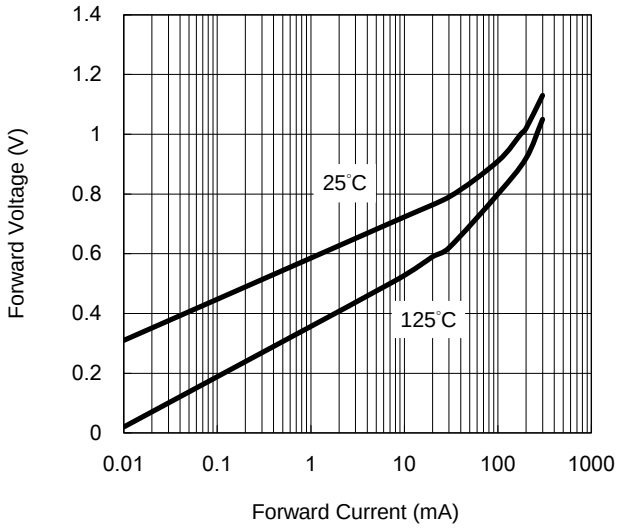


Fig.2 Reverse Current vs Reverse Voltage

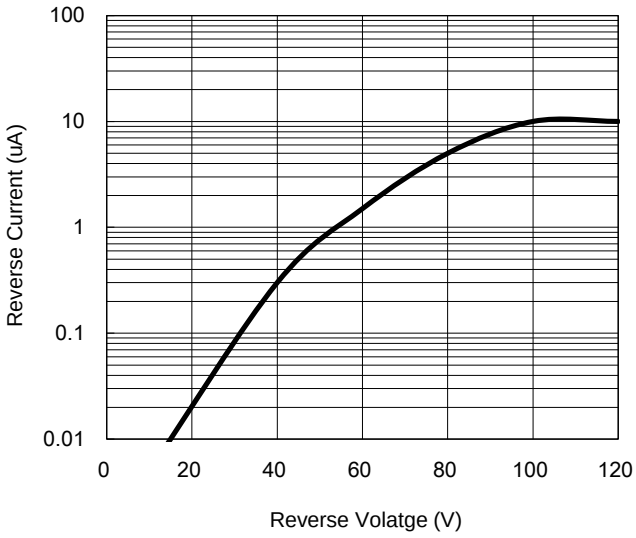


Fig.3 Admissible Power Dissipation Curve

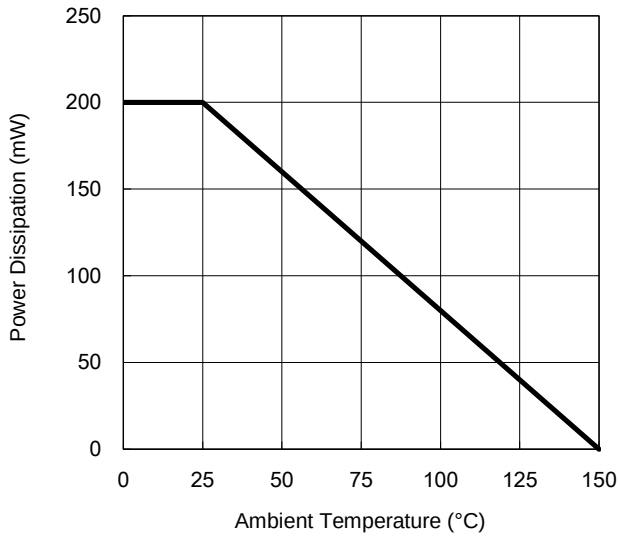
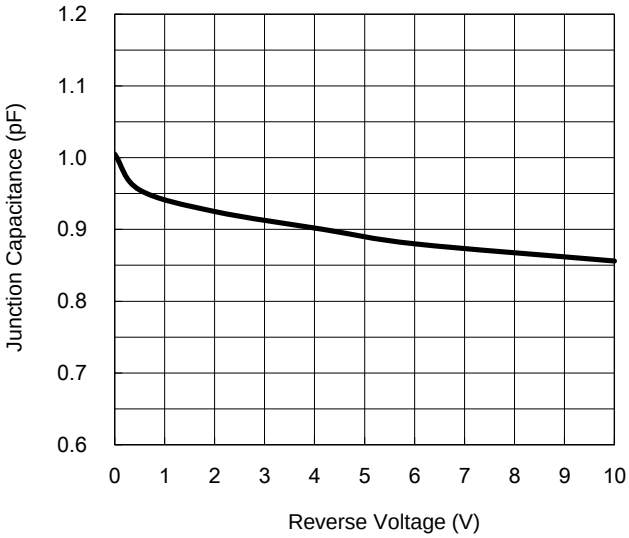
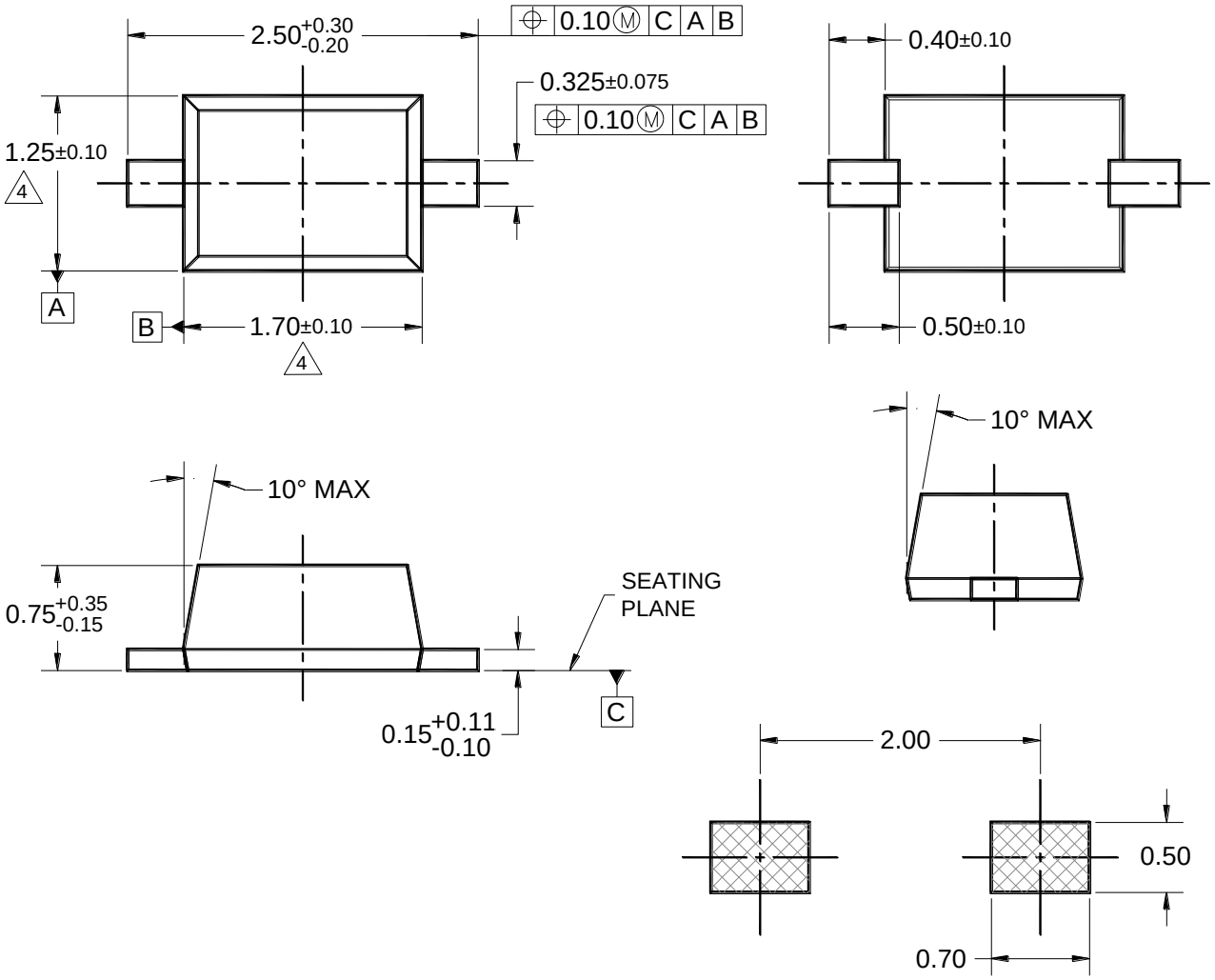


Fig.4 Typical Junction Capacitance

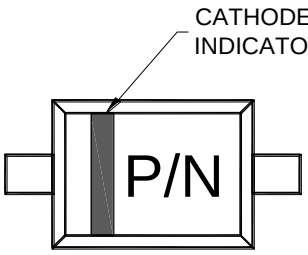


PACKAGE OUTLINE DIMENSIONS

SOD-323F



SUGGESTED PAD LAYOUT



MARKING DIAGRAM

P/N = MARKING CODE

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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