200mA, 120V - 250V High Voltage 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

KEY PARAMETERS		
PARAMETER	**VALUE**	**UNIT**
I_F	200	mA
V_{RRM}	120 - 250	V
I_{FSM}	2.5	A
V_F at I_F = 200mA	1.25	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**	**BAV19WS**	**BAV20WS**	**BAV21WS**	**UNIT**
Marking code on the device			S5	S6	S7	
Power dissipation		P_D	200			mW
Average forward current		I_F	200			mA
Repetitive peak reverse voltage		V_{RRM}	120	200	250	V
Non-repetitive square wave peak forward current	t = 1s	I_{FSM}	0.5			A
	t = 1μs		2.5			A
Junction temperature range		T_J	-65 to +150			°C
Storage temperature range		T_{STG}	-65 to +150			°C

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

PARAMETER		CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage[1]		I_F = 100mA, T_J = 25°C	V_F	-	1.00	V
		I_F = 200mA, T_J = 25°C		-	1.25	V
Reverse voltage	BAV19WS	I_R = 100μA, T_J = 25°C	V_R	120	-	V
	BAV20WS			200	-	V
	BAV21WS			250	-	V
Reverse current[2]	BAV19WS	V_R = 100V T_J = 25°C	I_R	-	0.1	μA
	BAV20WS	V_R = 150V T_J = 25°C		-	0.1	μA
	BAV21WS	V_R = 200V T_J = 25°C		-	0.1	μA
Junction capacitance		1MHz, V_R = 0V	C_J	-	5	pF
Reverse recovery time		I_F = I_R = 30mA, R_L = 100Ω, I_{rr} = 3mA	t_{rr}	-	50	ns

Notes:

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

ORDERING INFORMATION

ORDERING CODE[1][2]	PACKAGE	PACKING
BAVxWS RR	SOD-323F	3,000 / 7" Tape & Reel
BAVxWS RRG	SOD-323F	3,000 / 7" Tape & Reel
BAVxWS R9	SOD-323F	10,000 / 13" Tape & Reel
BAVxWS R9G	SOD-323F	10,000 / 13" Tape & Reel

Notes:

1. "x" is device code from "19"(BAV19WS) to "21"(BAV21WS)
2. "G" means green compound (halogen-free according to IEC 61249-2-21)

CHARACTERISTICS CURVES

(T_A = 25°C unless otherwise noted)

Fig.1 Typical Forward Characteristics

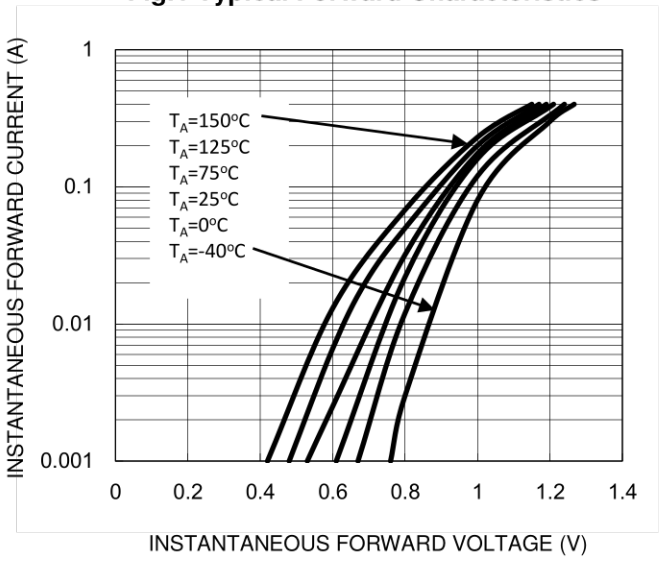


Fig.2 Typical Reverse Characteristics

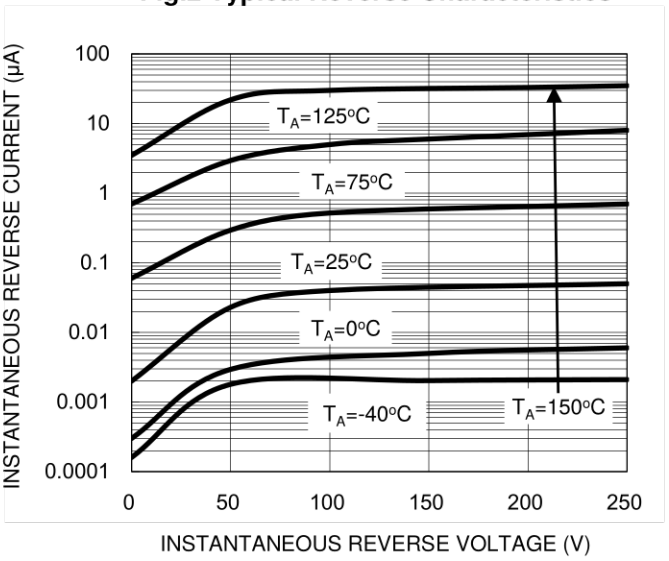


Fig.3 Typical Capacitance VS. Reverse Voltage

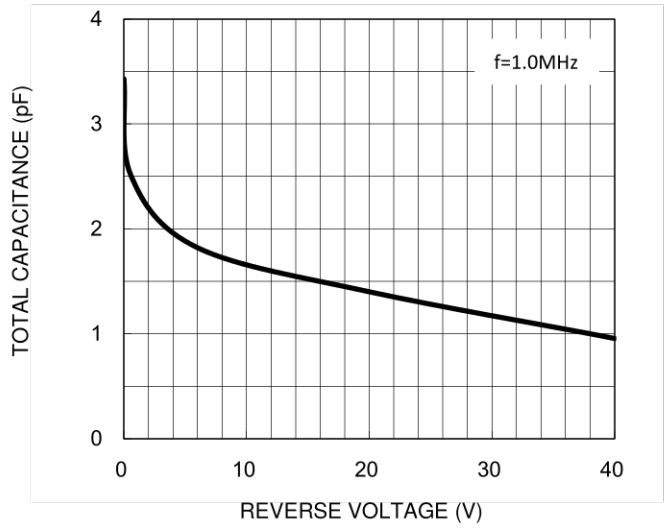
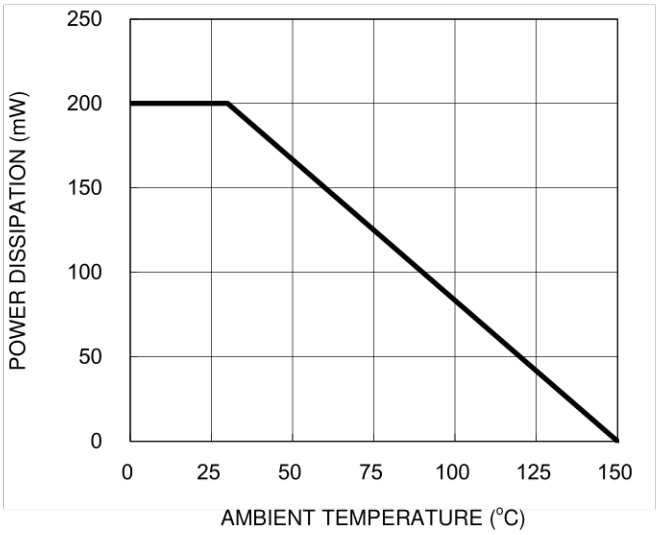
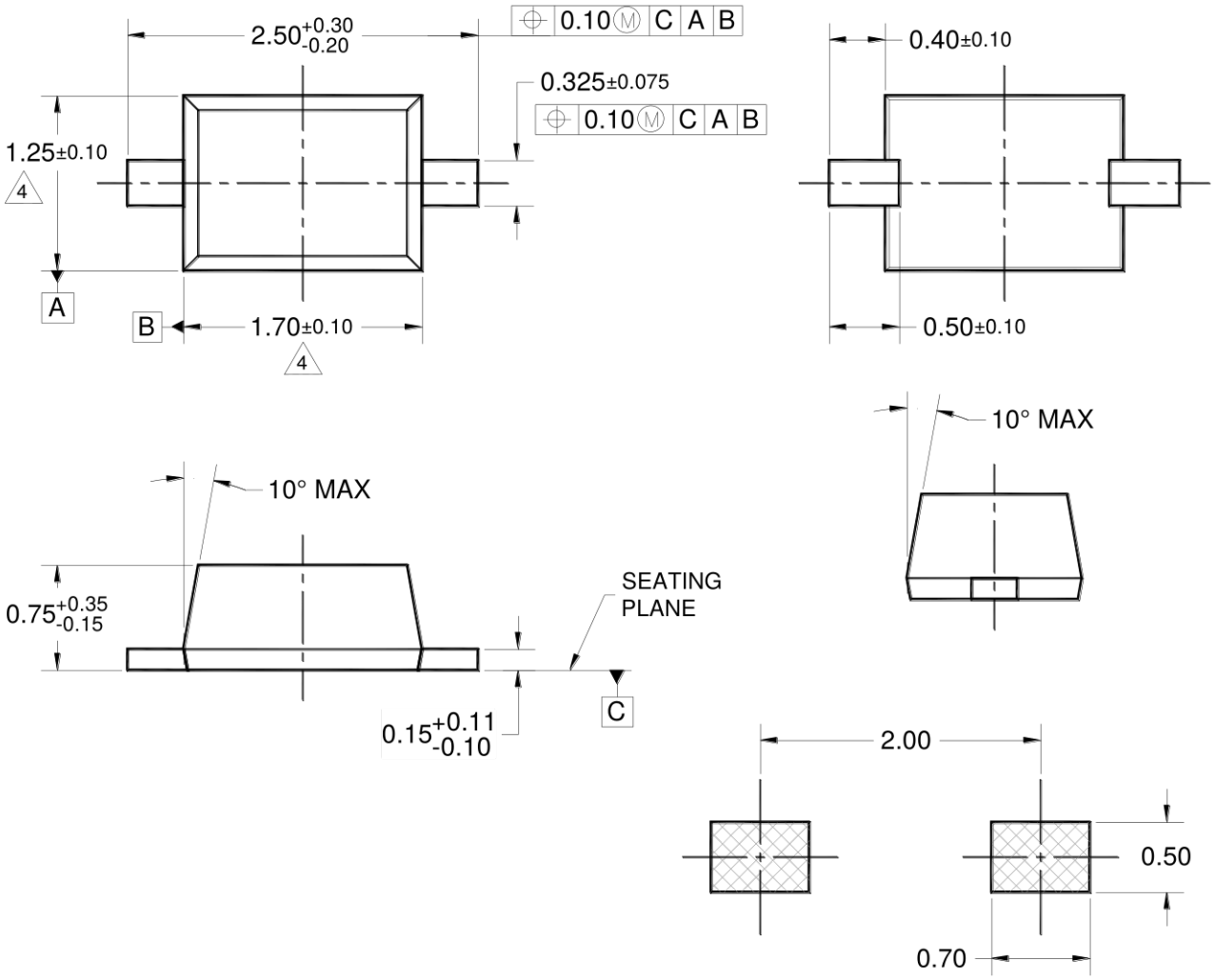


Fig.4 Power Derating Curve

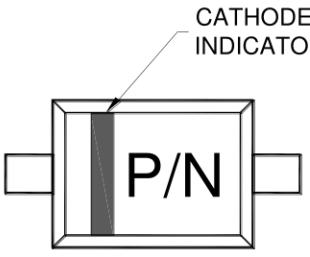


PACKAGE OUTLINE DIMENSIONS

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.

Notice

Specifications of the products displayed herein are subject to change without notice. TSC or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies.

Purchasers are solely responsible for the choice, selection, and use of TSC products and TSC assumes no liability for application assistance or the design of Purchasers' products.

Information contained herein is intended to provide a product description only. No license, express or implied, to any intellectual property rights is granted by this document. Except as provided in TSC's terms and conditions of sale for such products, TSC assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of TSC products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify TSC for any damages resulting from such improper use or sale.