

200mA, 120-250V 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
- 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

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
$I_{F(AV)}$	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	



MECHANICAL DATA

- Case: SOD-323F
- Molding compound meets UL 94 V-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: 4.5 ± 0.5 mg (approximately)



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
Peak forward surge current	Pulse Width = 1 s , Square Wave	I _{FSM}	0.5			A
	Pulse Width = 1 μs , Square Wave		2.5			
Junction temperature range		T _J	-65 to +150			°C
Storage temperature range		T _{STG}	-65 to +150			°C

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

PARAMETER		CONDITIONS	SYMBOL	MIN	MAX	UNIT
Forward voltage per diode ⁽¹⁾		$I_F = 100\text{mA}, T_J = 25^\circ\text{C}$	V_F	-	1.00	V
		$I_F = 200\text{mA}, T_J = 25^\circ\text{C}$		-	1.25	
Reverse voltage	BAV19WS	$I_R = 100\mu\text{A}, T_J = 25^\circ\text{C}$	V_R	120	-	V
	BAV20WS			200	-	
	BAV21WS			250	-	
Reverse current ⁽²⁾	BAV19WS	$V_R = 100\text{V}, T_J = 25^\circ\text{C}$	I_R	-	100	nA
	BAV20WS	$V_R = 150\text{V}, T_J = 25^\circ\text{C}$				
	BAV21WS	$V_R = 200\text{V}, T_J = 25^\circ\text{C}$				
Junction capacitance		1 MHz, $V_R = 0\text{V}$	C_J	-	5	pF
Reverse recovery time		$I_F = I_R = 30\text{mA}, R_L = 100\Omega,$ $I_{RR} = 3\text{mA}$	t_{rr}	-	50	ns

Notes:

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

ORDERING INFORMATION

PART NO.	PACKAGE	PACKING
BAV19WS RRG	SOD-323F	3K / 7" Reel
BAV19WS RR	SOD-323F	3K / 7" Reel
BAV19WS R9G	SOD-323F	10K / 13" Reel
BAV19WS R9	SOD-323F	10K / 13" Reel
BAV20WS RRG	SOD-323F	3K / 7" Reel
BAV20WS RR	SOD-323F	3K / 7" Reel
BAV20WS R9G	SOD-323F	10K / 13" Reel
BAV20WS R9	SOD-323F	10K / 13" Reel
BAV21WS RRG	SOD-323F	3K / 7" Reel
BAV21WS RR	SOD-323F	3K / 7" Reel
BAV21WS R9G	SOD-323F	10K / 13" Reel
BAV21WS R9	SOD-323F	10K / 13" Reel

CHARACTERISTICS CURVES

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

Fig.1 Typical Forward Characteristics

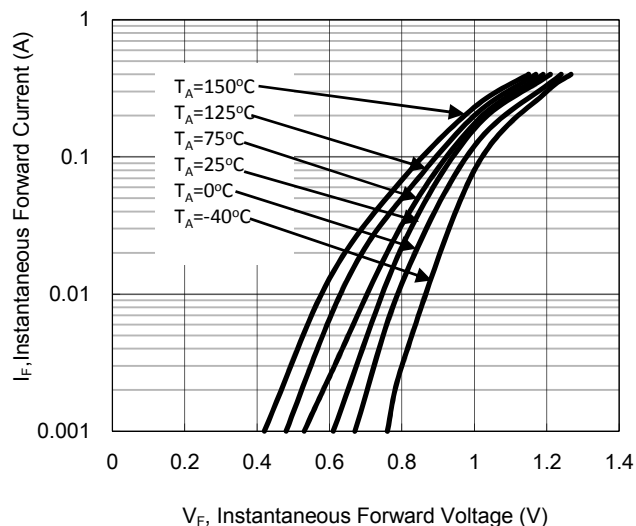


Fig.2 Typical Reverse Characteristics

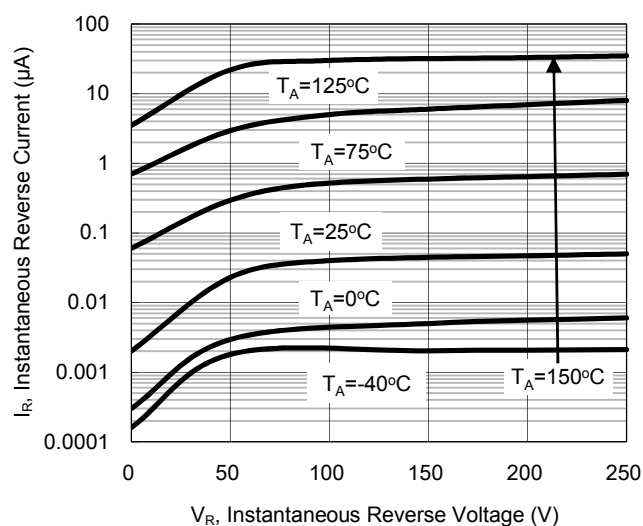


Fig.3 Typical Capacitance VS. Reverse Voltage

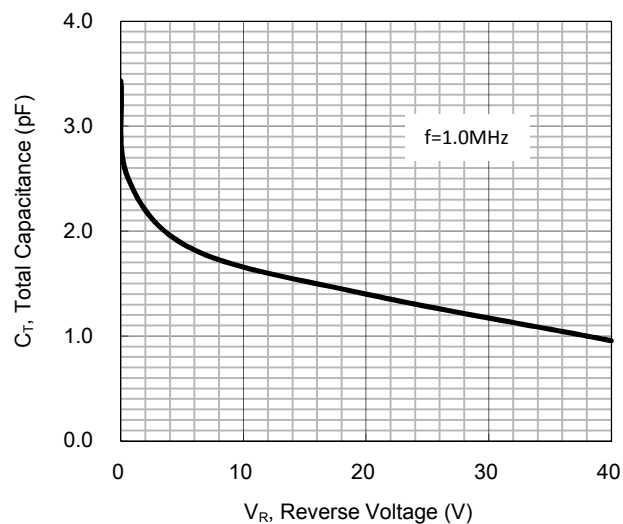
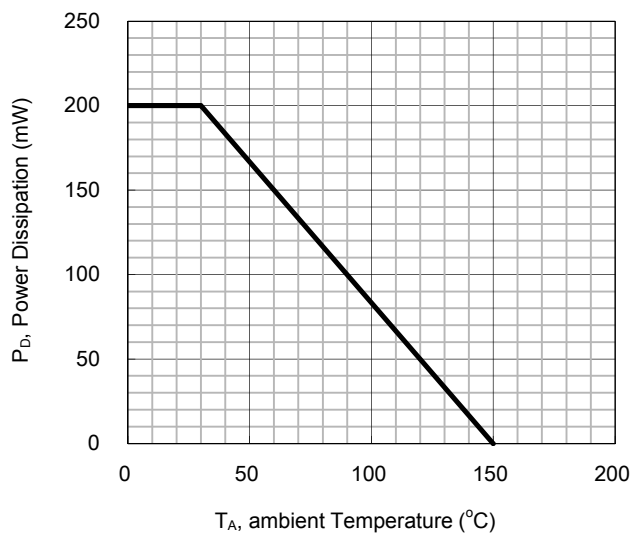
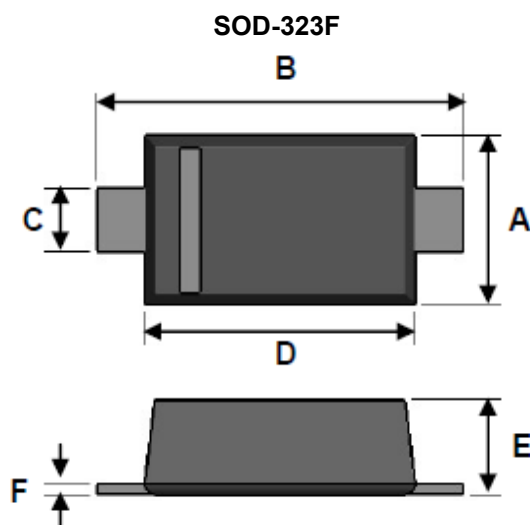


Fig.3 Power Derating Curve

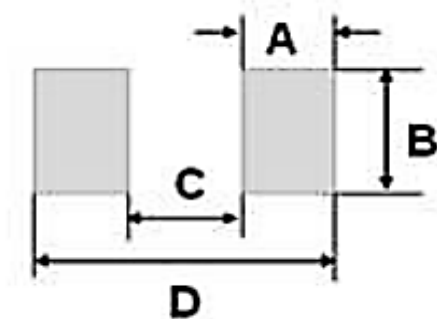


PACKAGE OUTLINE DIMENSION



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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