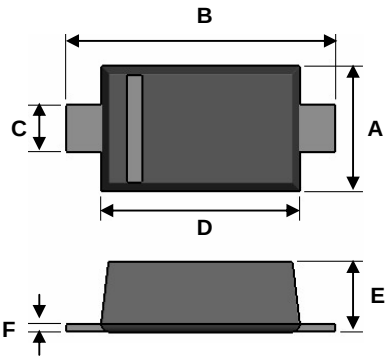
TAIWAN SEMICONDUCTOR

BAV19WS/BAV20WS/BAV21WS
200mW High Voltage SMD Switching Diode

Small Signal Diode

SOD-323F



Features

- ✧Flat Lead SOD-323F small outline plastic package
- ✧Surface device type mounting
- ✧Moisture sensitivity level 1
- ✧Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧Pb free version and RoHS compliant
- ✧Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

Mechanical Data

- ✧Case : Flat lead SOD-323F small outline plastic package
- ✧Terminal: Matte tin plated, solderable per MIL-STD-202, Method 208 guaranteed
- ✧High temperature soldering guaranteed: 260℃/10s
- ✧Polarity : Indicated by cathode band
- ✧Weight : 4.5±0.5 mg
- ✧Marking Code : S5, S6, S7

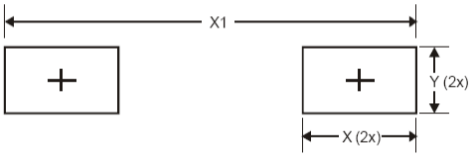
Dimensions (mm)	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	1.15	1.40	0.045	0.055
B	2.30	2.80	0.091	0.110
C	0.25	0.40	0.010	0.016
D	1.60	1.80	0.063	0.071
E	0.80	1.10	0.031	0.043
F	0.05	0.15	0.002	0.006

Ordering Information

Part No.	Package	Packing Code	Packing	Marking
BAV19WS	SOD-323F	RR	3K / 7" Reel	S5
BAV20WS	SOD-323F	RR	3K / 7" Reel	S6
BAV21WS	SOD-323F	RR	3K / 7" Reel	S7
BAV19WS	SOD-323F	RRG	3K / 7" Reel	S5
BAV20WS	SOD-323F	RRG	3K / 7" Reel	S6
BAV21WS	SOD-323F	RRG	3K / 7" Reel	S7

Pin Configuration

Suggested PAD Layout



Dimensions	Value (in mm)
X	0.710
X1	2.900
Y	0.403

Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

Maximum Ratings

Type Number	Symbol	Value	Units
Power Dissipation	P_D	200	mW
Repetitive Peak Reverse Voltage	V_{RRM}	250	V
Average Rectified Forward Current	$I_{F(AV)}$	200	mA
Non-Repetitive Peak Forward Surge Current Pulse width= 1μs Pulse width= 1s	I_{FSM}	 2.5 0.5	A
Junction and Storage Temperature Range	T_J, T_{STG}	-65 to + 150	°C

Note1. The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary despending on application.

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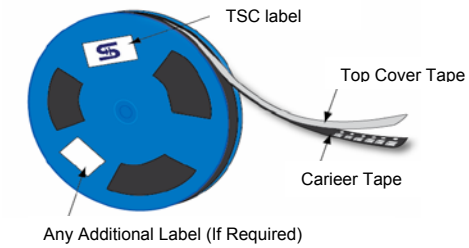
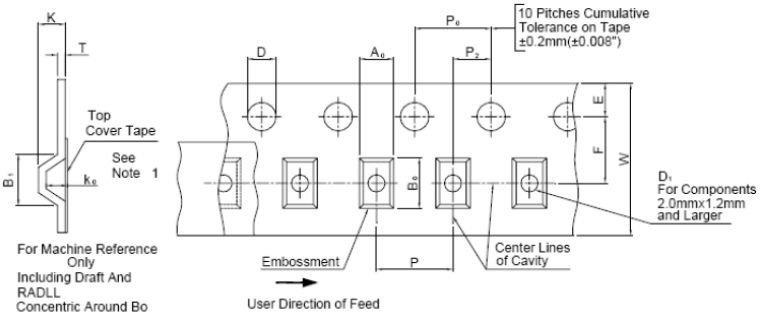
Electrical Characteristics

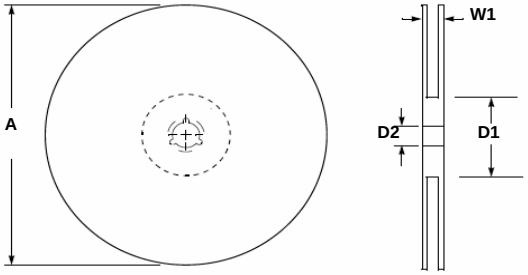
Type Number		Symbol	Min	Max	Units
Breakdown Voltage	BAV19W BAV20W (Note 2) BAV21W	V_R	120 200 250	- - -	V
Forward Voltage	I_F= 100mA I_F= 200mA	V_F	- -	1.00 1.25	V
Reverse Leakage Current	BAV19W BAV20W (Note 3) BAV21W	I_R	-	100	nA
Junction Capacitance	V_R=0, f=1.0MHz	C_J	-	5.0	pF
Reverse Recovery Time	(Note 4)	Trr	-	50	ns

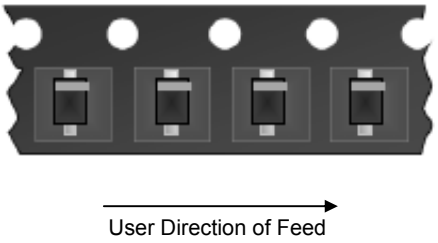
Tape & Reel specification



Item	Symbol	Dimension(mm)
Carrier depth	K	2.40 Max.
Sprocket hole	D	1.5 ± 0.1
Reel outside diameter	A	178 ± 1
Reel inner diameter	D1	50 Min.
Feed hole width	D2	13.0 ± 0.5
Sprocke hole position	E	1.75 ±0.10
Punch hole position	F	3.50 ±0.05
Sprocke hole pitch	P0	4.00 ±0.10
Embossment center	P1	2.00 ±0.10
Overall tape thickness	T	0.6 Max.
Tape width	W	8.30 Max.
Reel width	W1	14.4 Max







Note 2: Test Condition : I_R=100μA

Note 3: Test Condition : BAV19WS @ V_R=100V, BAV20WS @ V_R=150V, BAV21WS @ V_R=200V

Note 4: Test Condition : I_F=I_R=30mA, R_L=100Ω, I_{RR}=3mA

Note 5: A0, B0, and K0 are determined by component size. The clearance between the components and the cavity must be within 0.05 mm min. to 0.5 mm max. The component cannot rote more than 10° within the determined cavity.

Note 6: If B1 exceeds 4.2 mm(0.165") for 8 mm embossed tape, the tape may not feed through all tape feeders.

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Rating and Characteristic Curves

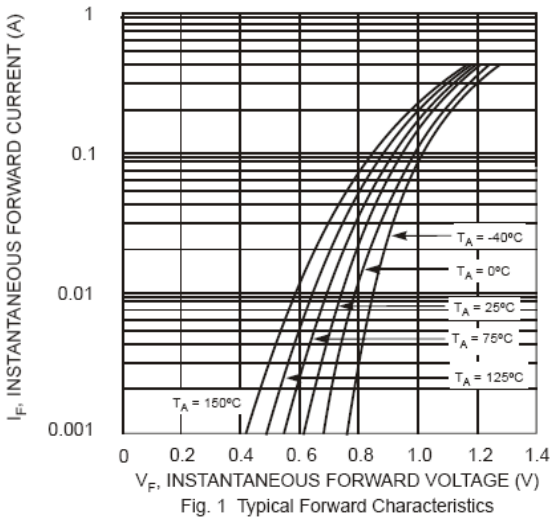

Fig. 1 Typical Forward Characteristics

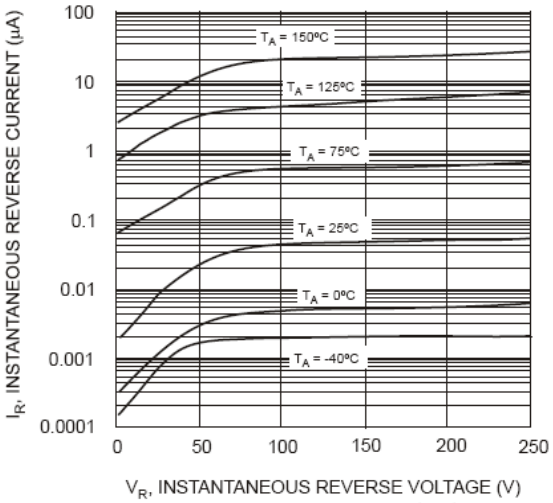

Fig. 2 Typical Reverse Characteristics

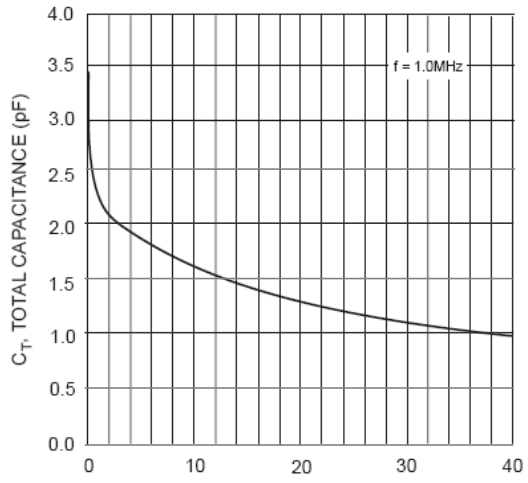

Fig. 3 Typical Capacitance vs. Reverse Voltage

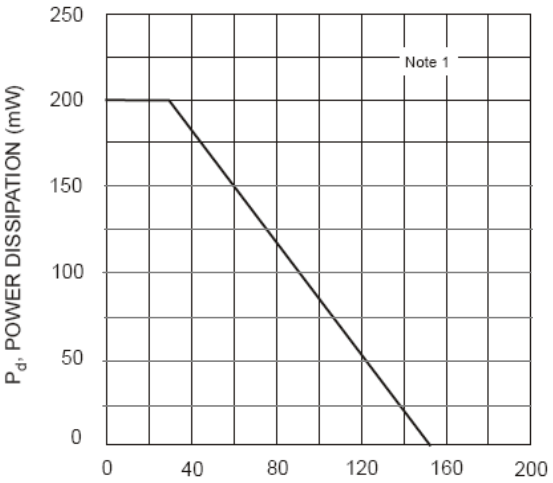

Fig. 4 Power Derating Curve

Mouser Electronics

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BAV20WS BAV21WS