

BAV19WS-FL-Q1 THRU BAV21WS-FL-Q1**List**

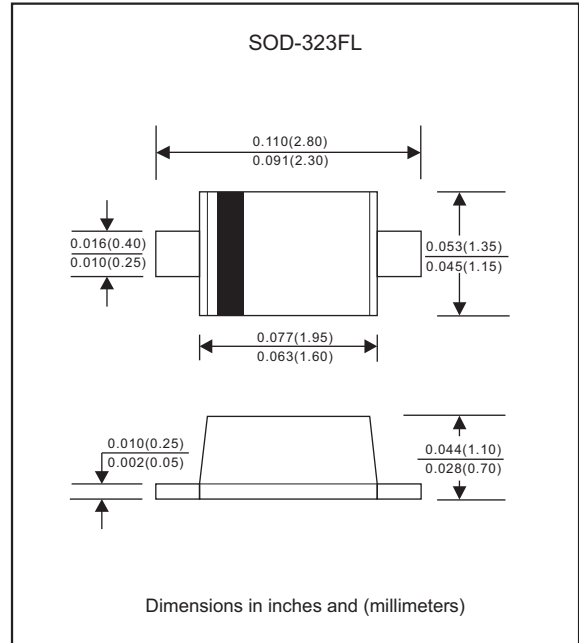
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BAV19WS-FL-Q1 THRU BAV21WS-FL-Q1**200mA Surface Mount
Switching Diode-100V-200V****Features**

- Flat Lead SOD-323FL Small Outline Plastic Package
- Surface Device Type Mounting.
- RoHS Compliant.
- Green EMC
- Matte Tin(Sn) Lead Finish
- Lead-free parts meet RoHS requirements.
- Qualified to AEC-Q101 standards for high reliability.
- Suffix "-H" indicates Halogen-free parts, ex. BAV19WS-FL-Q1-H

Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOD-323FL
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any
- Weight : Approximated 0.004 gram

Package outline**Maximum ratings** (AT $T_A=25^{\circ}\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	BAV19WS-FL-Q1	BAV20WS-FL-Q1	BAV21WS-FL-Q1	UNIT
Repetitive Peak Reverse Voltage	V_{RRM}	120	200	250	V
Continuous Reverse Voltage	V_R	100	150	200	V
Continuous Forward Current	$I_F(AV)$	200			mA
Repetitive Peak Forward Current	I_{FRM}	625			mA
Non-Repetitive Peak Forward Surge Current at $t = 1\text{s}$ at $t = 1\mu\text{s}$	I_{FSM}	0.5 2.5			A
Power Dissipation	P_D	200			mW
Operating Junction Temperature Range	T_J	$-65 \sim +150$			$^{\circ}\text{C}$
Storage Temperature Range	T_{STG}	$-65 \sim +150$			$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise specified)

PARAMETER	CONDITION	SYMBOL	BAV19WS-FL-Q1	BAV20WS-FL-Q1	BAV21WS-FL-Q1	UNIT
Min. Reverse Breakdown Voltage	$I_R = 100\mu\text{A}$	V_R	120	200	250	V
Max. Forward Voltage	$I_F = 100\text{mA}$ $I_F = 200\text{mA}$	V_F	1.0 1.25			V
Max. Reverse Leakage Current	$V_R = V_{R(Max.)}$ $V_R = V_{R(Max.)}$, at $T_J=125^{\circ}\text{C}$	I_R	0.1 100			μA
Max. Total capacitance	$V_R = 0\text{V}$, $f = 1\text{MHz}$	C_T	5			pF
Max. Reverse recovery time	$I_F=I_R=30\text{mA}$, $I_{RR}=0.1 \times I_R$, $R_L=100\Omega$	T_{rr}	50			ns

Rating and characteristic curves(BAV19WS-FL-Q1 THRU BAV21WS-FL-Q1)

Fig.1 FORWARD CHARACTERISTICS

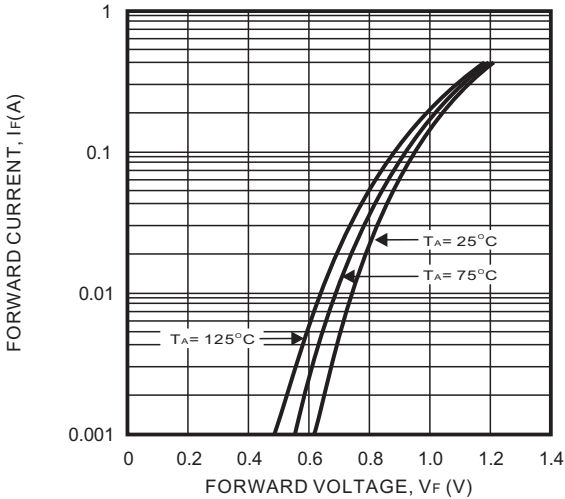


Fig.2 REVERSE CHARACTERISTICS

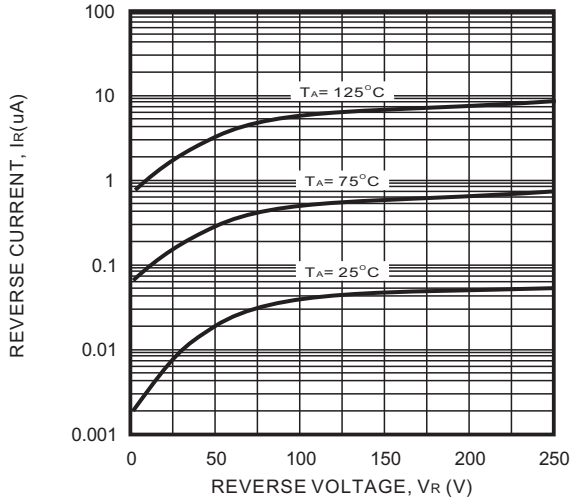


Fig.3 CAPACITANCE CHARACTERISTICS

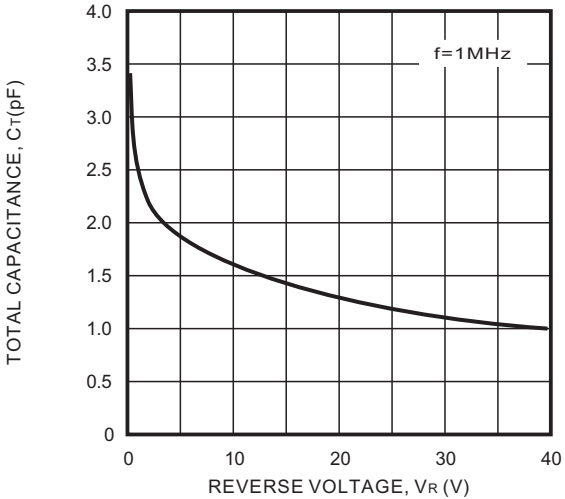
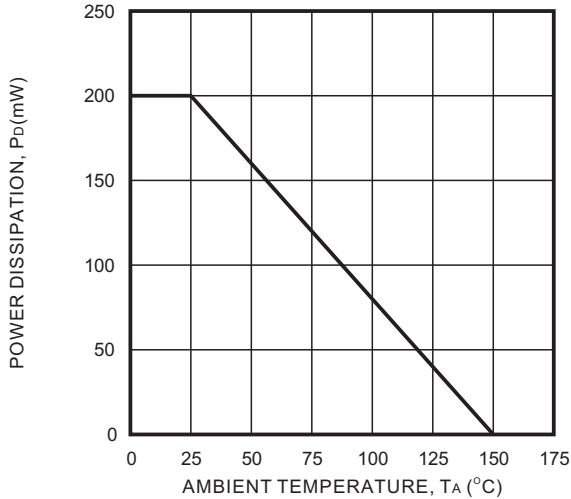


Fig.4 POWER DERATING CURVE

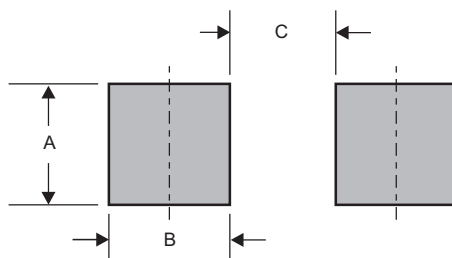


BAV19WS-FL-Q1 THRU BAV21WS-FL-Q1**Pinning information**

Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
BAV19WS-FL-Q1	JX
BAV20WS-FL-Q1	T2
BAV21WS-FL-Q1	T3

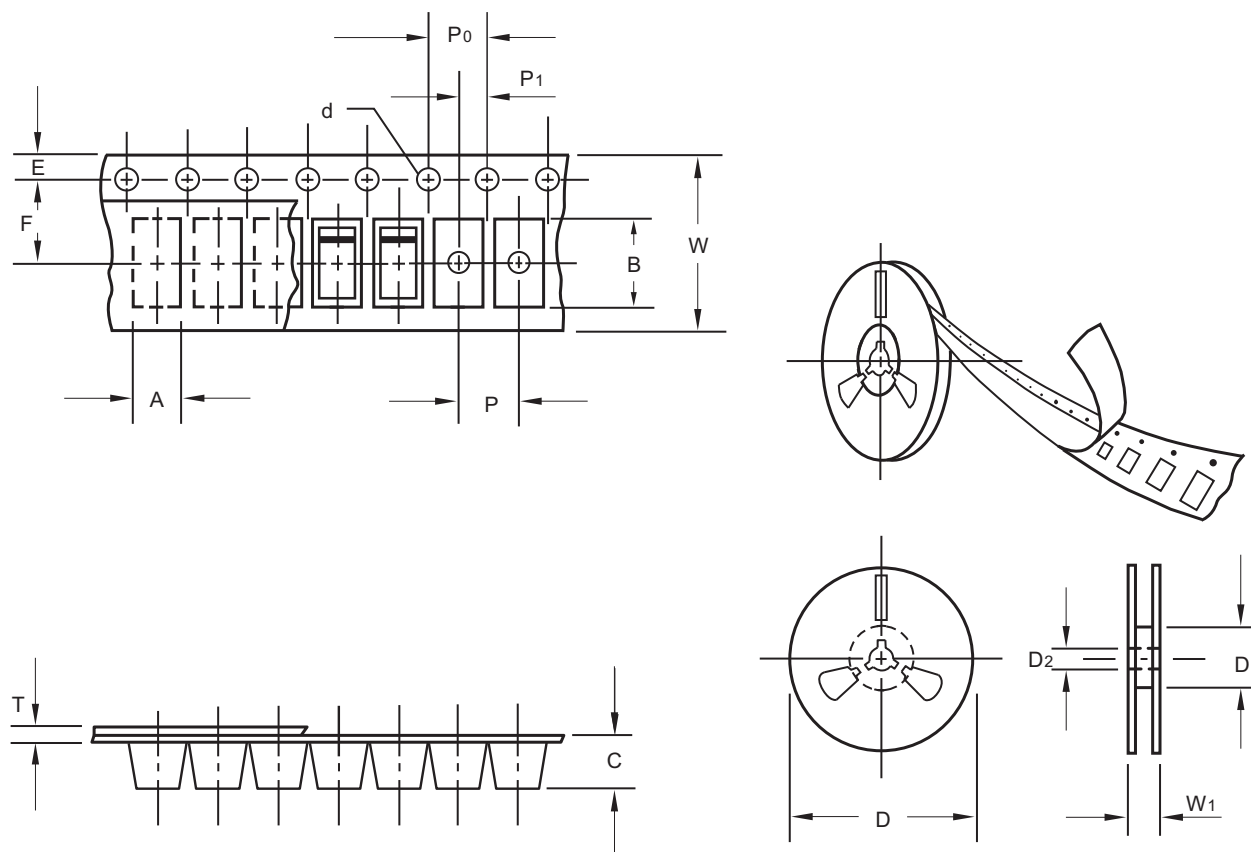
Suggested solder pad layout

Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SOD-323FL	0.032 (0.82)	0.022 (0.56)	0.069 (1.75)

BAV19WS-FL-Q1 THRU BAV21WS-FL-Q1

Packing information



unit:mm

Item	Symbol	Tolerance	SOD-323FL
Carrier width	A	0.1	1.46
Carrier length	B	0.1	2.95
Carrier depth	C	0.1	1.25
Sprocket hole	d	0.1	1.50
13" Reel outside diameter	D	2.0	-
13" Reel inner diameter	D1	min	-
7" Reel outside diameter	D	2.0	178.00
7" Reel inner diameter	D1	min	62.00
Feed hole diameter	D2	0.5	13.00
Sprocket hole position	E	0.1	1.75
Punch hole position	F	0.1	3.50
Punch hole pitch	P	0.1	4.00
Sprocket hole pitch	P0	0.1	4.00
Embossment center	P1	0.1	2.00
Overall tape thickness	T	0.1	0.23
Tape width	W	0.3	8.00
Reel width	W1	1.0	11.40

Note: Devices are packed in accordance with EIA standard RS-481-A and specifications listed above.

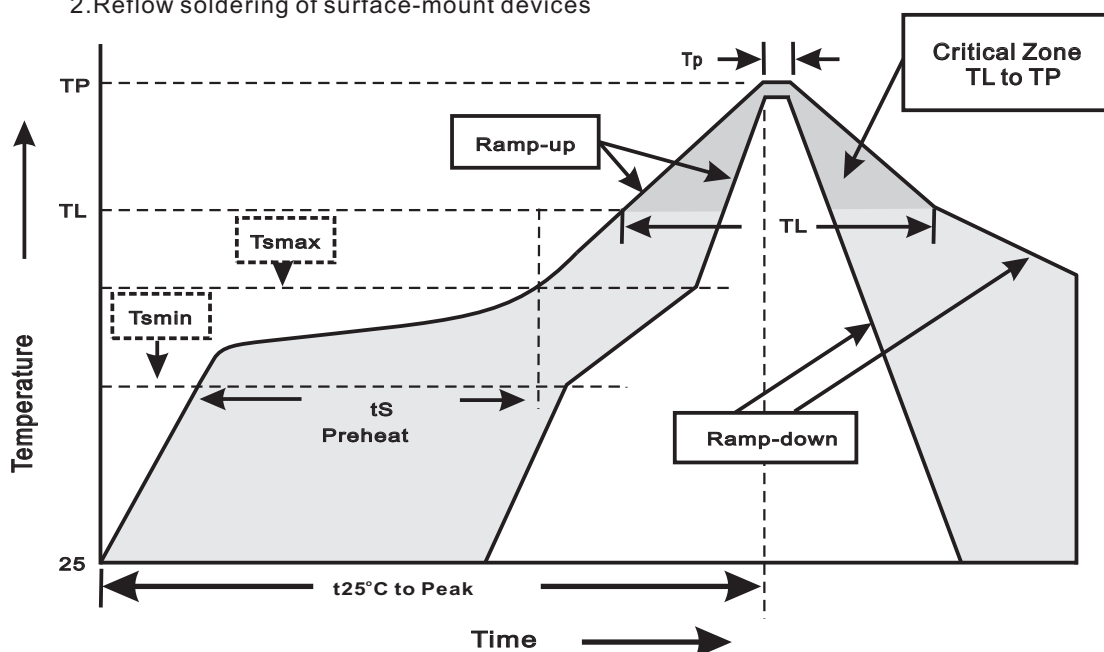
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Reel packing

PACKAGE	REEL SIZE	REEL (pcs)	COMPONENT SPACING (m/m)	BOX (pcs)	INNER BOX (m/m)	REEL DIA, (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
SOD-323FL	7"	3,000	4.0	30,000	183*183*123	178	382*262*387	240,000	9.5

Suggested thermal profiles for soldering processes

- 1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
- 2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T _L to T _P)	<3°C/sec
Preheat -Temperature Min(T _{smin}) -Temperature Max(T _{smax}) -Time(min to max)(t _s)	150°C 200°C 60~120sec
T _{smax} to T _L -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(T _L) -Time(t _L)	217°C 60~260sec
Peak Temperature(T _P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t _P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

BAV19WS-FL-Q1 THRU BAV21WS-FL-Q1**High reliability test capabilities**

Item Test	Conditions	Reference
1. MSL Preconditioning	24hr bake@125°C+168hrs@85°C /85%RH+3xIR@260°C+1flux immersion+alcohol+DI H2O rinse	JESD22-A113
2. Operation Life	Ta=25°C, Rated Current (Io=Iomax.) Test Duration:1000hrs	MIL-STD-750E METHOD 1027.3
3. High Temperature Reverse Bias	80% Rated VR (Tj=Tjmax.) Test Duration:1000hrs	JESD22-A108
4. High Temperature Storage Life	Ta=125°C Test Duration: 1000hrs	JESD22 A-103
5. Temperature Cycle	-55°C (15min) to 150°C (15min) Test Cycles: 1000cycles	JESD22 A-104
6. Autoclave	P=2atm Ta=121°C RH=100% Test Duration:96hrs	JESD22 A-102
7. Intermittent Operational Life	Ta=25°C, On/Io Max. 2min, Off/2min, Test Cycles:15000cycles	MIL-STD-750E METHOD 1037
8. Solderability	245±5°C for 5sec	J-STD-002
9. Moisture Resistance	Ta=85°C/85% Relative humidity Test Duration:1000hrs	MIL-STD-750E METHOD 1021.2
10. Resistance To Solder Heat	260±5°C for 10sec	JESD22 B-106
11. High Temperature High Humidity Reverse Bias	Ta=85°C, 85%RH, with device reverse biased at 80% of rated breakdown voltage up to a maximum of 100V or limit of chamber Test Duration:1000hrs	JESD22-A101