

## Features

- Halogen Free. "Green" Device (Note 1)
- AEC-Q101 Qualified
- Silicon Epitaxial Planar Diodes
- For General Purpose
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

- Operating Junction Temperature Range: -65°C to +150°C
- Storage Temperature Range: -65°C to +150°C
- Thermal Resistance: 500°C/W Junction to Ambient (Note 2)

MCC Part Number	Repetitive Peak Reverse Voltage $V_{RRM}$	RMS Reverse Voltage $V_{R(RMS)}$	DC Blocking Voltage $V_R$
BAV19WSHE3	120V	85V	120V
BAV20WSHE3	200V	141V	200V
BAV21WSHE3	250V	177V	250V

## Electrical Characteristics @ 25°C Unless Otherwise Specified

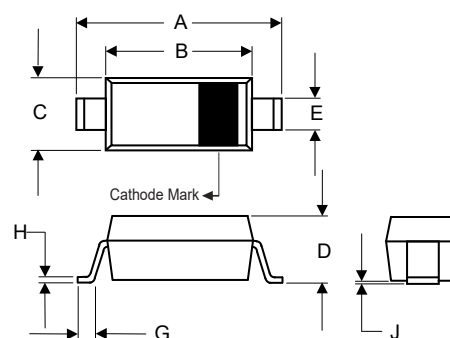
Average Rectified Forward Current	$I_{F(AV)}$	200mA	(Note 2)
Peak Forward Current	$I_{FM}$	400mA	
Non-Repetitive Peak Forward Surge Current	$I_{FSM}$	9.0A 0.5A	@ t=1us @ t=1s
Repetitive Peak Forward Current	$I_{FRM}$	625mA	
Power Dissipation	$P_{TOT}$	250mW	$T_A=25^\circ\text{C}$

Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Mounted on FR-4 board with recommended pad layout.

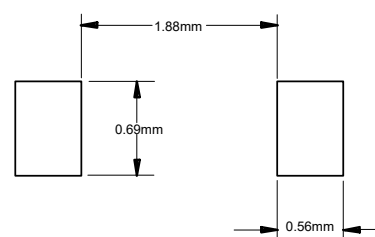
# 250mW Small Signal Diodes 120 to 250 Volts

## SOD-323

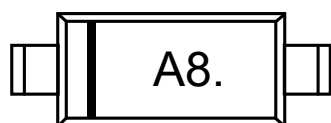


DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.090	0.107	2.30	2.70	
B	0.063	0.071	1.60	1.80	
C	0.045	0.053	1.15	1.35	
D	0.031	0.045	0.80	1.15	
E	0.010	0.016	0.25	0.40	
G	0.004	0.018	0.10	0.45	
H	0.004	0.010	0.10	0.25	
J	----	0.006	----	0.15	

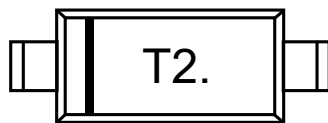
## Suggested Solder Pad Layout



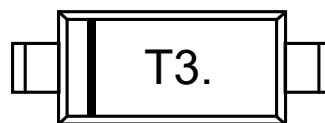
## Internal Structure and Marking Code



BAV19WSHE3



BAV20WSHE3



BAV21WSHE3

## Electrical Characteristics @ 25°C (Unless Otherwise Specified)

### BAV19WSHE3

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	$V_{BR}$	$I_R=100\mu A$	120			V
Forward Voltage	$V_F$	$I_F=100mA$			1.00	V
		$I_F=200mA$			1.25	V
Reverse Current	$I_R$	$V_R=100V$			100	nA
		$V_R=100V, T_J=100^\circ C$			15	$\mu A$
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		1.5	2.0	pF
Reverse Recovery Time	$t_{rr}$	$I_F=I_R=30mA,$ $I_{rr}=3mA, R_L=100\Omega$			50	ns

### BAV20WSHE3

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	$V_{BR}$	$I_R=100\mu A$	200			V
Forward Voltage	$V_F$	$I_F=100mA$			1.00	V
		$I_F=200mA$			1.25	V
Reverse Current	$I_R$	$V_R=150V$			100	nA
		$V_R=150V, T_J=100^\circ C$			15	$\mu A$
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		1.5	2.0	pF
Reverse Recovery Time	$t_{rr}$	$I_F=I_R=30mA,$ $I_{rr}=3mA, R_L=100\Omega$			50	ns

BAV21WSHE3

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Breakdown Voltage	$V_{BR}$	$I_R=100\mu A$	250			V
Forward Voltage	$V_F$	$I_F=100mA$			1.00	V
		$I_F=200mA$			1.25	V
Reverse Current	$I_R$	$V_R=200V$			100	nA
		$V_R=200V, T_J=100^\circ C$			15	$\mu A$
Junction Capacitance	$C_J$	$V_R = 0V, f = 1MHz$		1.5	2.0	pF
Reverse Recovery Time	$t_{rr}$	$I_F=I_R=30mA, I_{rr}=3mA, R_L=100\Omega$			50	ns

## Curve Characteristics

Fig. 1 - Typical Instantaneous Forward Characteristics

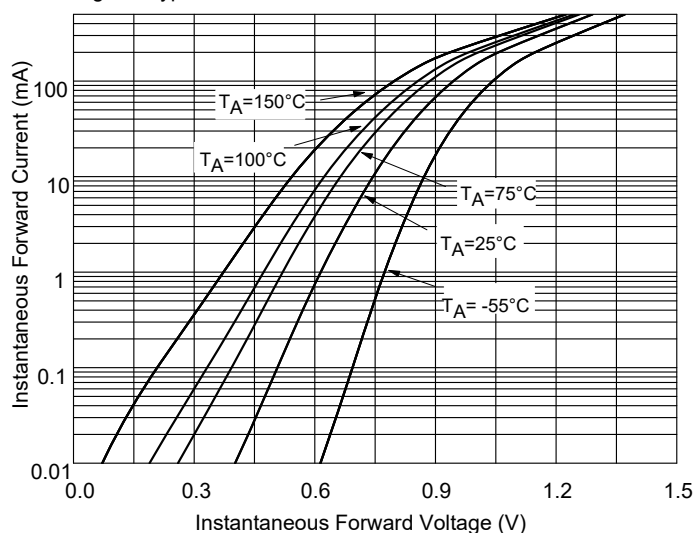


Fig. 2 - Typical Reverse Leakage Characteristics

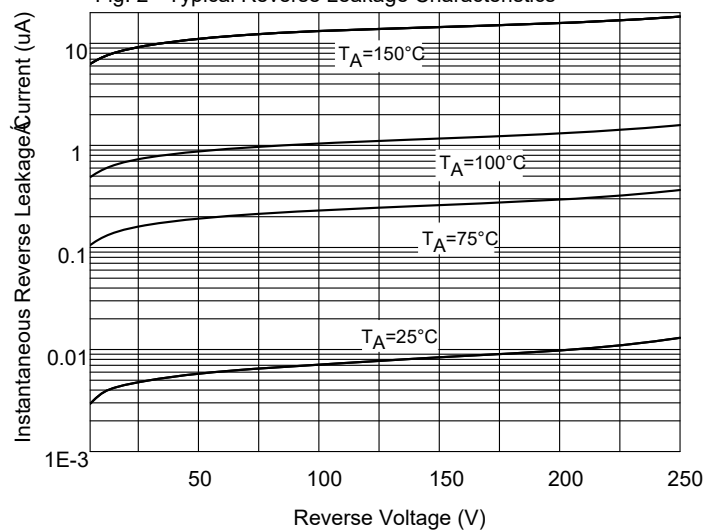


Fig. 3 - Capacitance Characteristics

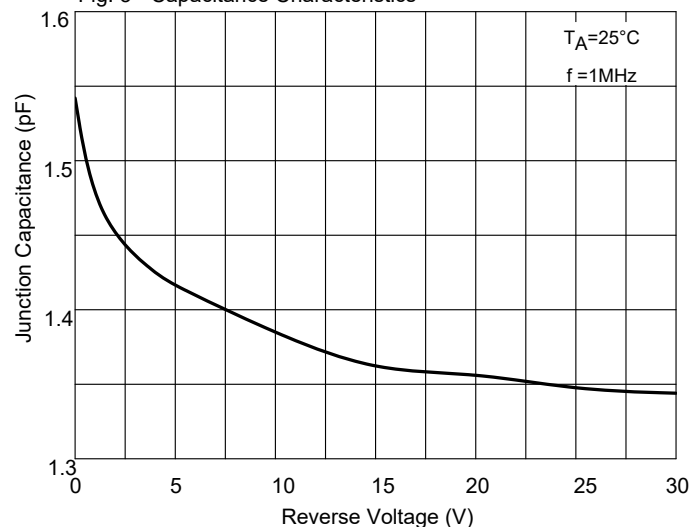
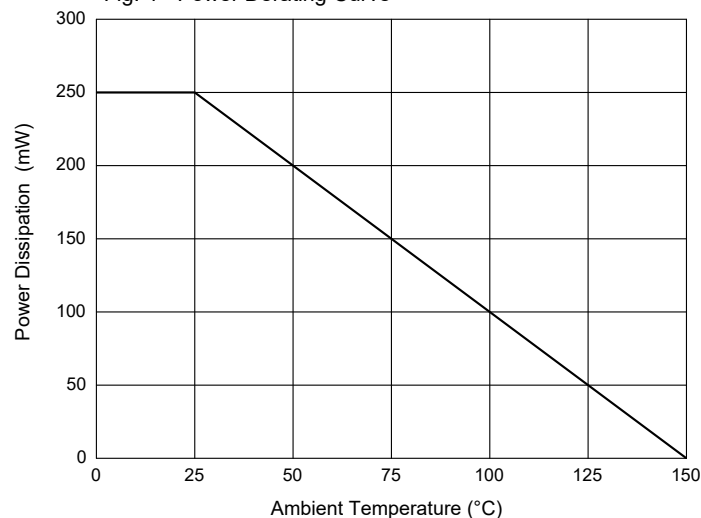


Fig. 4 - Power Derating Curve



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 3Kpcs/Reel
Part Number-13P	Tape&Reel: 10Kpcs/Reel

For packaging details, go to our website at <https://www.mccsemi.com/pdf/productpackaging/SOD-323%20Package.pdf>

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