

HIGH VOLTAGE SWITCHING DIODE

Features

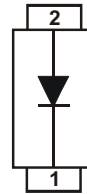
- Fast Switching Speed: max. 50 ns
- High Reverse Breakdown Voltage: 300V
- Low Leakage Current: 100nA at room temperature
- Ultra Small Plastic SMD Package
- P/N suffix V means AEC-Q101 qualified, e.g: BAS521V
- Halogen-free

Mechanical Data

- Case: SOD-523
- Case Material: Molded Plastic, "Green" Molding Compound.
UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe.
- Solderable per MIL-STD-202, Method 208
- Weight: 0.0014 grams (approximate)



Top View



Device Schematic

Maximum Ratings @ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Repetitive Peak Reverse Voltage	V_{RRM}	300	V
Working Peak Reverse Voltage	V_{RWM}	300	V
DC Blocking Voltage			
Forward Current (Note 2)	I_F	250	mA
Non-Repetitive Peak Forward Surge Current @ $t = 1.0\mu\text{s}$	I_{FSM}	4.5	A
Repetitive Peak Forward Current (Note 2)	I_{FRM}	1	A

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Power Dissipation (Note 2)	P_D	325	mW
Thermal Resistance Junction to Ambient Air (Note 2)	$R_{\theta JA}$	385	$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to +150	$^\circ\text{C}$

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

Characteristic	Symbol	Min	Max	Unit	Test Condition
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	300	—	V	$I_R = 100\mu\text{A}$
Forward Voltage	V_F	—	1.1	V	$I_F = 100\text{mA}$
Reverse Current (Note 1)	I_R	—	50	nA	$V_R = 5\text{V}$
		—	150	nA	$V_R = 250\text{V}$
		—	100	μA	$V_R = 250\text{V}, T_J = 150^\circ\text{C}$
Total Capacitance	C_T	—	5	pF	$V_R = 0, f = 1.0\text{MHz}$
Reverse Recovery Time	t_{rr}	—	50	ns	$I_F = I_R = 30\text{mA}, I_{tr} = 0.1 \times I_R, R_L = 100\Omega$

- Notes:
1. Short duration pulse test used to minimize self-heating effect.
 2. Part mounted on FR-4 board with recommended pad layout.
 3. No purposefully added lead. Halogen and Antimony Free.

RATING AND CHARACTERISTICS CURVES (BAS521)

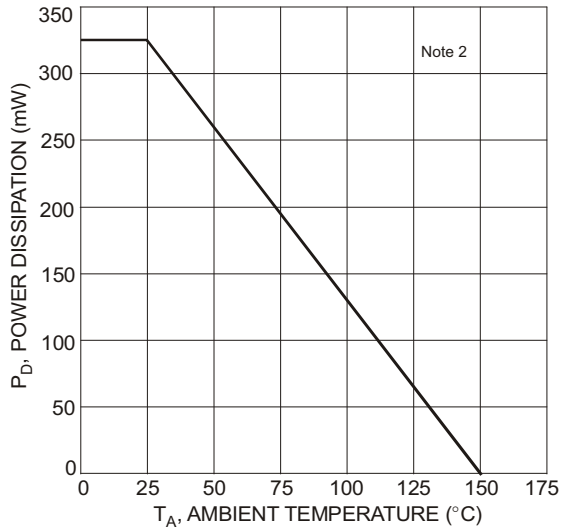


Fig. 1 Power Derating Curve, Total Package

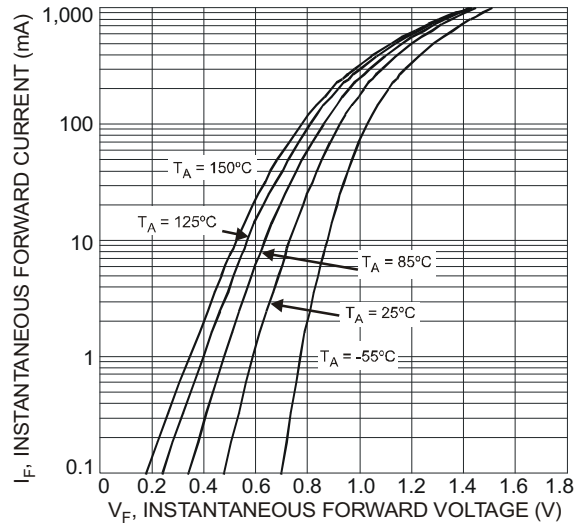


Fig. 2 Typical Forward Characteristics, Per Element

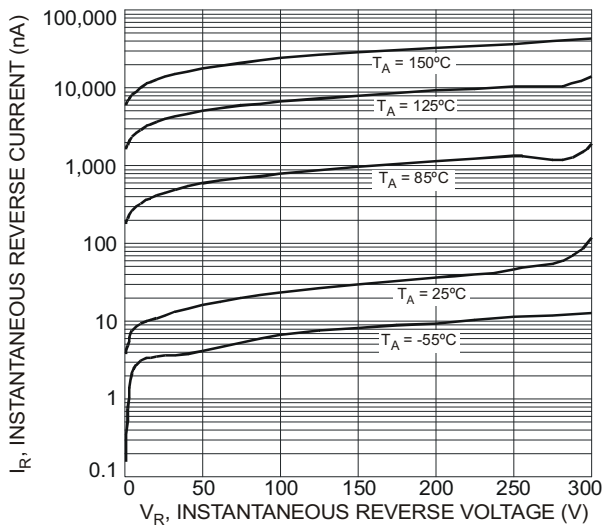


Fig. 3 Typical Reverse Characteristics, Per Element

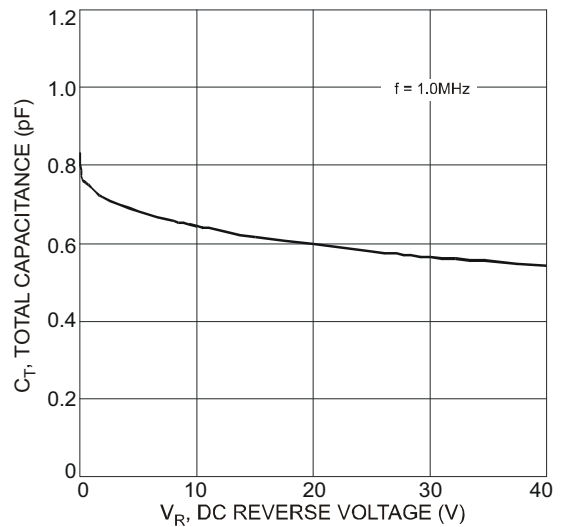
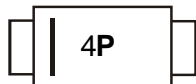


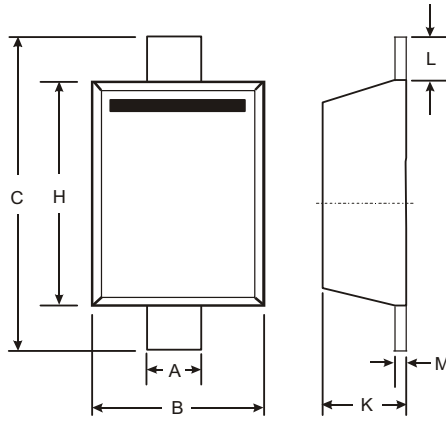
Fig. 4 Total Capacitance vs. Reverse Voltage, Per Element

Marking Information



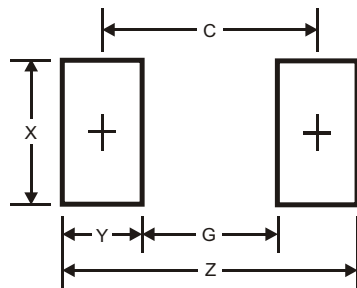
4P=Product Type Marking Code

Package Outline Dimensions



SOD-523		
Dim	Min	Max
A	0.25	0.35
B	0.70	0.90
C	1.50	1.70
H	1.10	1.30
K	0.55	0.65
L	0.10	0.30
M	0.10	0.12
All Dimensions in mm		

Suggested Pad Layout



Dimensions	Value (in mm)
Z	2.3
G	1.1
X	0.8
Y	0.6
C	1.7

PACKAGING OF DIODE AND BRIDGE RECTIFIERS

REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	EA PER INNER BOX	COMPONENT SPACE (mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SOD-523	-T	8,000	--	---	---	178	390*205*31	320,000	6.16

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