

# Schottky Barrier Diodes

## BAS40P2

These Schottky barrier diodes are designed for high speed switching applications, circuit protection, and voltage clamping. Extremely low forward voltage reduces conduction loss. Miniature surface mount package is excellent for hand held and portable applications where space is limited.

### Features

- S Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free, Halogen Free/BFR Free and are RoHS Compliant

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	40	V
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_F$	225 1.8	mW mW/ $^\circ\text{C}$
Operating Junction and Storage Temperature Range	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$
Forward Continuous Current	$I_F$	120	mA
Forward Surge Current $t \leq 1 \text{ s}$ $t \leq 10 \text{ ms}$	$I_{FSM}$	200 600	mA
Thermal Resistance (Note 1) Junction-to-Ambient (Note 2)	$R_{\theta JA}$	508 311	$^\circ\text{C/W}$

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

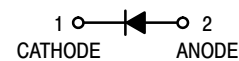
1. FR-4 @ minimum pad.
2. FR-4 @  $1.0 \times 1.0$  in pad.



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## 40 VOLTS SCHOTTKY BARRIER DIODES



### MARKING DIAGRAM



AA = Specific Device Code  
M = Date Code

### ORDERING INFORMATION

Device	Package	Shipping†
BAS40P2T5G	SOD-923 (Pb-Free)	8000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

# BAS40P2

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

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10\ \mu\text{A}$ )	$V_{(BR)R}$	40	–	V
Reverse Leakage ( $V_R = 25\ \text{V}$ )	$I_R$	–	1.0	$\mu\text{A}$
Forward Voltage ( $I_F = 1.0\ \text{mA}$ ) ( $I_F = 10\ \text{mA}$ ) ( $I_F = 40\ \text{mA}$ )	$V_F$	– – –	380 500 1000	mV
Total Capacitance ( $V_R = 1.0\ \text{V}$ , $f = 1.0\ \text{MHz}$ )	$C_T$	–	5.0	pF

## TYPICAL CHARACTERISTICS

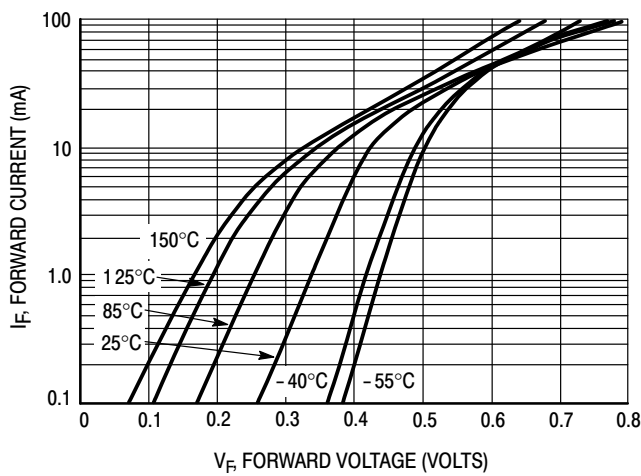


Figure 1. Typical Forward Voltage

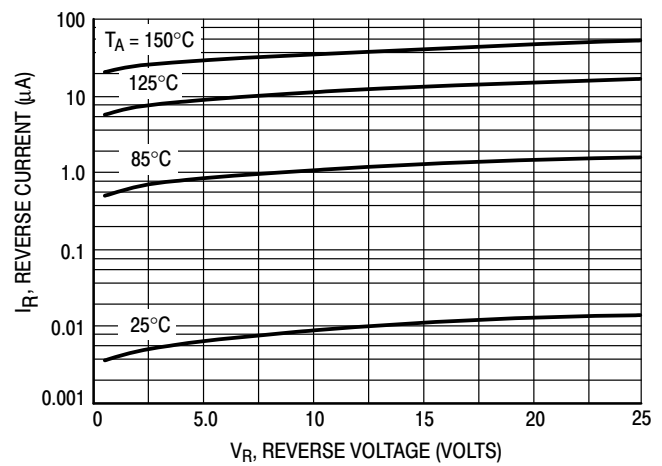


Figure 2. Reverse Current versus Reverse Voltage

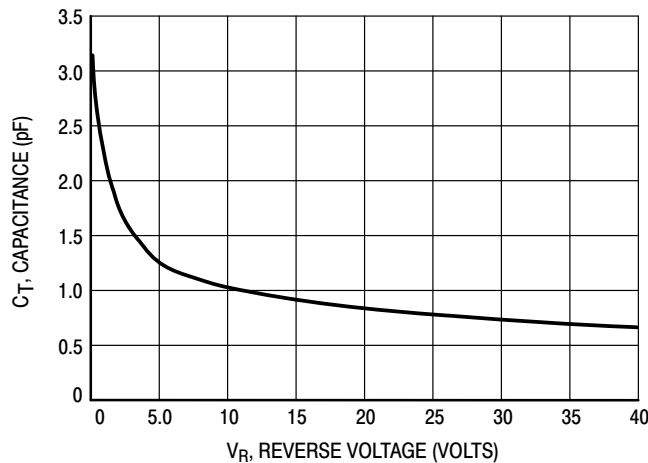
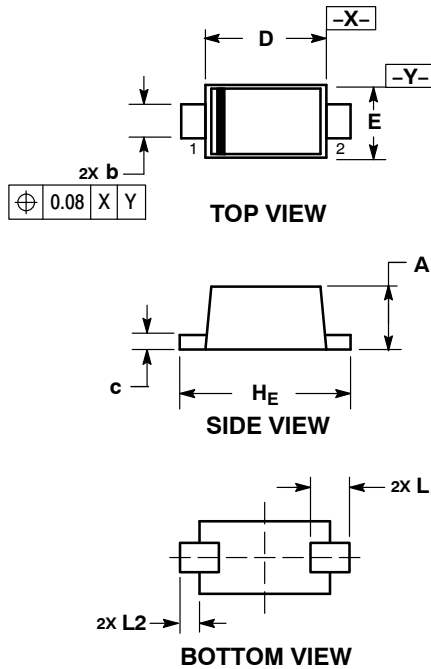


Figure 3. Typical Capacitance

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## PACKAGE DIMENSIONS

**SOD-923**  
**CASE 514AB**  
**ISSUE C**

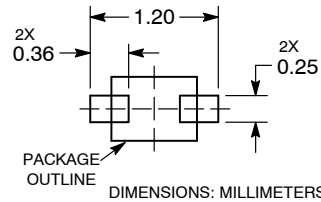


### NOTES:

1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.


DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.34	0.37	0.40	0.013	0.015	0.016
b	0.15	0.20	0.25	0.006	0.008	0.010
c	0.07	0.12	0.17	0.003	0.005	0.007
D	0.75	0.80	0.85	0.030	0.031	0.033
E	0.55	0.60	0.65	0.022	0.024	0.026
H <sub>E</sub>	0.95	1.00	1.05	0.037	0.039	0.041
L	0.19 REF			0.007 REF		
L <sub>2</sub>	0.05	0.10	0.15	0.002	0.004	0.006

### SOLDERING FOOTPRINT\*



See Application Note AND8455/D for more mounting details

\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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