

BAS70L

Schottky Barrier Diodes

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

- Extremely Fast Switching Speed
- Low Forward Voltage
- NSV 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 ($T_J = 150^{\circ}\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Forward Current	I_F	70	mA
Non-Repetitive Peak Forward Surge Current ($t \leq 1.0$ s)	I_{FSM}	100	mA
Reverse Voltage	V_R	70	V

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Forward Power Dissipation @ $T_A = 25^{\circ}\text{C}$ Derate above 25°C	P_F	225 1.8	mW mW/ $^{\circ}\text{C}$
Thermal Resistance – Junction-to-Ambient (Note 1) (Note 2)	$R_{\theta JA}$	508 311	$^{\circ}\text{C}/\text{W}$
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to +150	$^{\circ}\text{C}$

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.

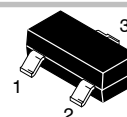
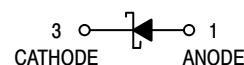
1. FR-4 @ minimum pad.
2. FR-4 @ 1.0×1.0 in pad.



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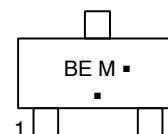
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70 VOLTS SCHOTTKY BARRIER DIODES



SOT-23 (TO-236)
CASE 318
STYLE 8

MARKING DIAGRAM



BE Specific Device Code
M = Date Code*
▪ = Pb-Free Package

(Note: Microdot may be in either location)

*Date Code orientation and/or overbar may vary depending upon manufacturing location.

ORDERING INFORMATION

Device	Package	Shipping†
BAS70LT1G	SOT-23 (Pb-Free)	3,000 / Tape & Reel
NSVBAS70LT1G	SOT-23 (Pb-Free)	3,000 / 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.

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

Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage ($I_R = 10\ \mu\text{A}$)	$V_{(BR)R}$	70	–	V
Total Capacitance ($V_R = 0\ \text{V}$, $f = 1.0\ \text{MHz}$)	C_T	–	2.0	pF
Reverse Leakage ($V_R = 50\ \text{V}$) ($V_R = 70\ \text{V}$)	I_R	– –	0.1 10	μA
Forward Voltage ($I_F = 1.0\ \text{mA}$) ($I_F = 10\ \text{mA}$) ($I_F = 15\ \text{mA}$)	V_F	– – –	410 750 1000	mV

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

TYPICAL CHARACTERISTICS

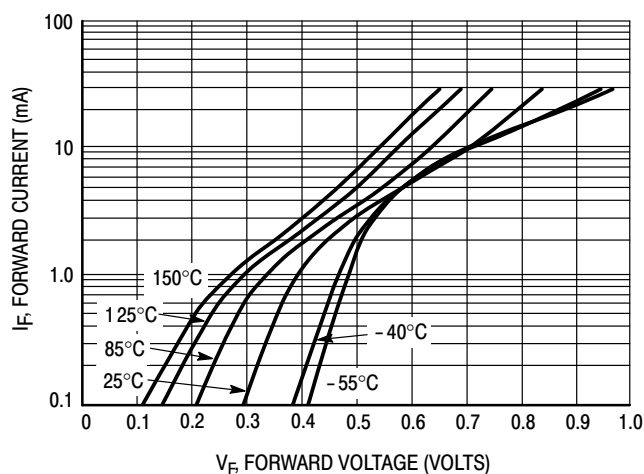


Figure 1. Typical Forward Voltage

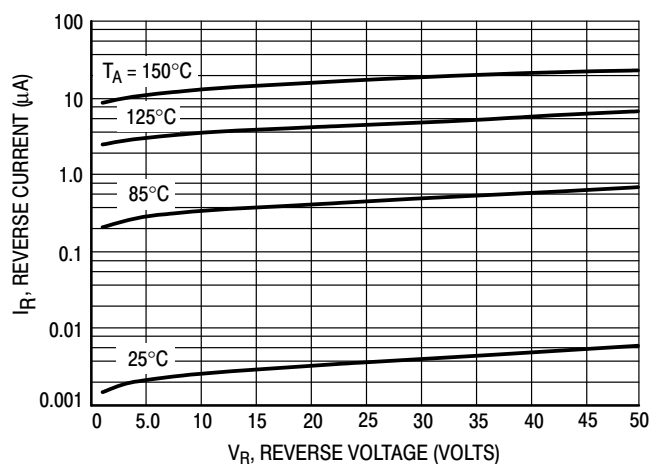


Figure 2. Reverse Current versus Reverse Voltage

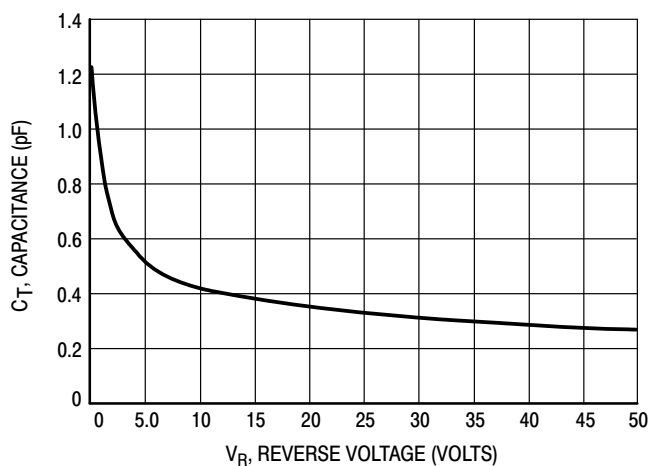
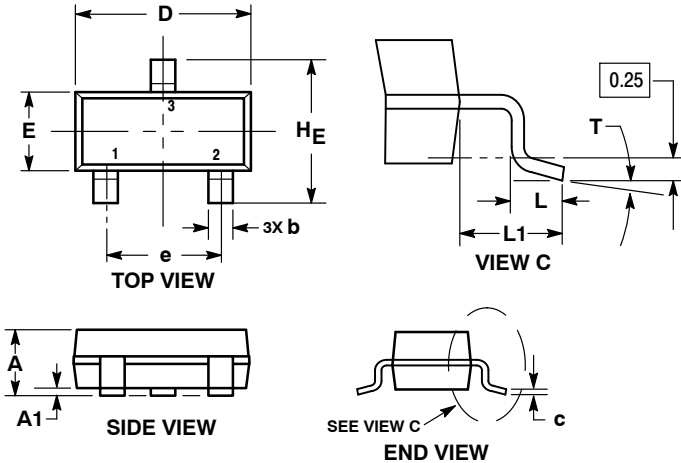


Figure 3. Typical Capacitance

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PACKAGE DIMENSIONS

SOT-23 (TO-236) CASE 318-08 ISSUE AS



NOTES:

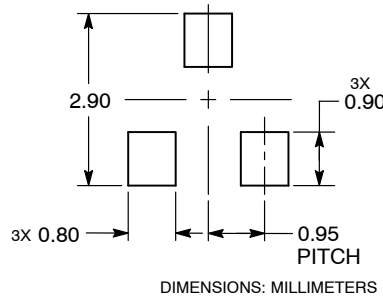
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF THE BASE MATERIAL.
4. DIMENSIONS D AND E DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.039	0.044
A1	0.01	0.06	0.10	0.000	0.002	0.004
b	0.37	0.44	0.50	0.015	0.017	0.020
c	0.08	0.14	0.20	0.003	0.006	0.008
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.080
L	0.30	0.43	0.55	0.012	0.017	0.022
L1	0.35	0.54	0.69	0.014	0.021	0.027
H _E	2.10	2.40	2.64	0.083	0.094	0.104
T	0°		10°	0°		10°

STYLE 8:

- PIN 1. ANODE
- NO CONNECTION
- CATHODE

RECOMMENDED SOLDERING FOOTPRINT*



*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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