MOTOROLA
SEMICONDUCTOR
TECHNICAL DATA

Order this data sheet
by BAS116LT1/D

Advance Information

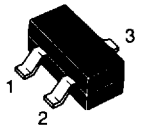
Switching Diode

BAS116LT1

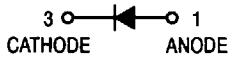
Motorola Preferred Device

This switching diode has the following features:

- Low Leakage Current Applications
- Medium Speed Switching Times
- Available in 8 mm Tape and Reel
  Use BAS116LT1 to order the 7 inch/3,000 unit reel
  Use BAS116LT3 to order the 13 inch/10,000 unit reel



CASE 318-07, STYLE 8
SOT-23 (TO-236AB)



MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Continuous Reverse Voltage	V_R	75	Vdc
Peak Forward Current	I_F	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mA

DEVICE MARKING

BAS116LT1 = JV

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (1) T_A = 25°C Derate above 25°C	P_D	225 1.8	mW mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate (2) T_A = 25°C Derate above 25°C	P_D	300 2.4	mW mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	−55 to +150	°C

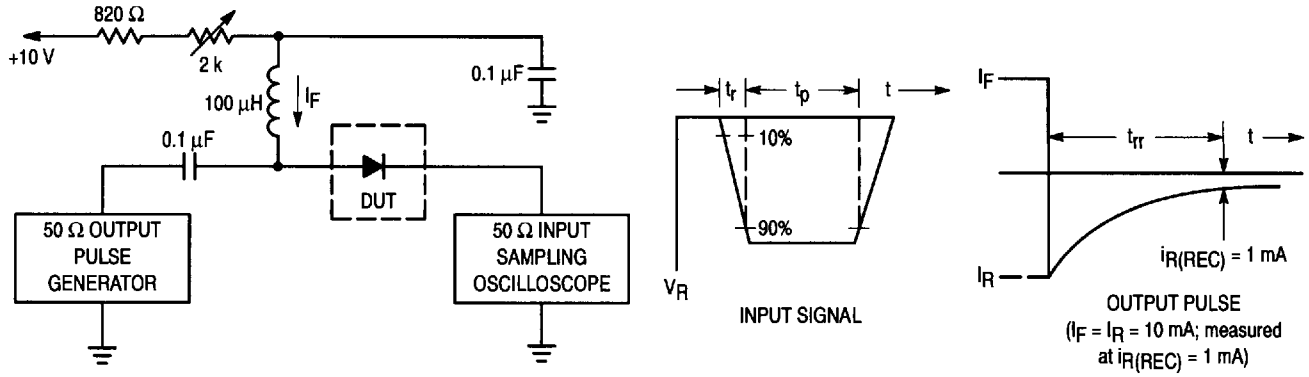
ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
OFF CHARACTERISTICS				
Reverse Breakdown Voltage (I_{BR} = 100 μA)	$V_{(BR)}$	75	—	V
Reverse Voltage Leakage Current (V_R = 75 V) (V_R = 75 V, T_J = 150°C)	I_R	— —	5.0 80	nA
Forward Voltage (I_F = 1.0 mA) (I_F = 10 mA) (I_F = 50 mA) (I_F = 150 mA)	V_F	— — — —	900 1000 1100 1250	mV
Diode Capacitance (V_R = 0 V, f = 1.0 MHz)	C_D	—	2.0	pF
Reverse Recovery Time (I_F = I_R = 10 mA) (Figure 1)	t_{rr}	—	3.0	μs

(1) FR-5 = 1 0 x 0 75 x 0 062 in
(2) Alumina = 0 4 x 0 3 x 0 024 in 99 5% alumina

This document contains information on a new product Specifications and information herein are subject to change without notice

Preferred devices are Motorola recommended choices for future use and best overall value.



Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10 mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10 mA.
3. $t_p \gg t_{rr}$

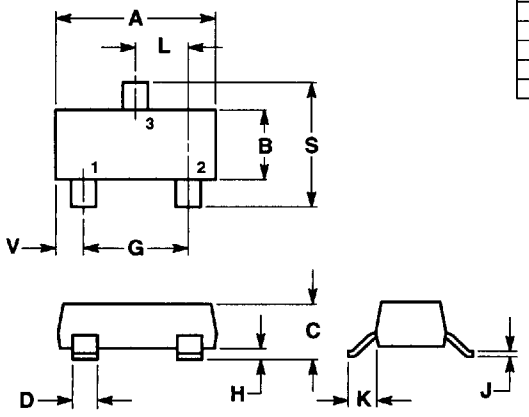
Figure 1. Recovery Time Equivalent Test Circuit

OUTLINE DIMENSIONS

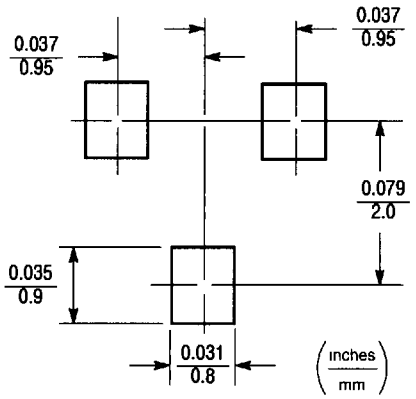
NOTES
1. DIMENSIONING AND TOLERANCING PER ANSI Y14 5M, 1982.
2. CONTROLLING DIMENSION: INCH
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.

DIM	INCHES MIN	INCHES MAX	MILLIMETERS MIN	MILLIMETERS MAX
A	0 1102	0 1197	2 80	3 04
B	0.0472	0 0551	1 20	1 40
C	0.0350	0 0440	0.89	1 11
D	0.0150	0 0200	0.37	0.50
G	0.0701	0.0807	1 78	2 04
H	0.0005	0 0040	0 013	0 100
J	0.0034	0 0070	0.085	0.177
K	0.0180	0 0236	0.45	0.60
L	0.0350	0 0401	0 89	1.02
S	0.0830	0.0984	2.10	2 50
V	0.0177	0 0236	0 45	0.60

STYLE 8:
PIN 1 ANODE
2 NO CONNECTION
3 CATHODE



CASE 318-07
SOT-23 (TO-236AB)



SOT-23 Footprint

Literature Distribution Centers:
USA: Motorola Literature Distribution; P.O. Box 20912; Phoenix, Arizona 85036.
EUROPE: Motorola Ltd.; European Literature Centre; 88 Tanners Drive, Blakelands, Milton Keynes, MK14 5BP, England.
JAPAN: Nippon Motorola Ltd.; 4-32-1, Nishi-Gotanda, Shinagawa-ku, Tokyo 141 Japan.
ASIA-PACIFIC: Motorola Semiconductors H.K. Ltd.; Silicon Harbour Center, No. 2 Dai King Street, Tai Po Industrial Estate, Tai Po, N.T., Hong Kong.