

Surface Mount Switching Diodes

(Pb) Lead(Pb)-Free

Features:

- *Fast Switching Speed
- *Surface Mount Package Ideally Suited for Automatic Insertion
- *High Conductance
- *For General Purpose Switching Applications

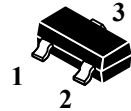
Mechanical Data:

- *Case: SOT-23, Molded Plastic
- *Terminals: Solderable per MIL-STD-202, Method 208
- *Polarity: See diagram
- *Weight: 0.008 grams

SWITCHING DIODE

200m AMPERES

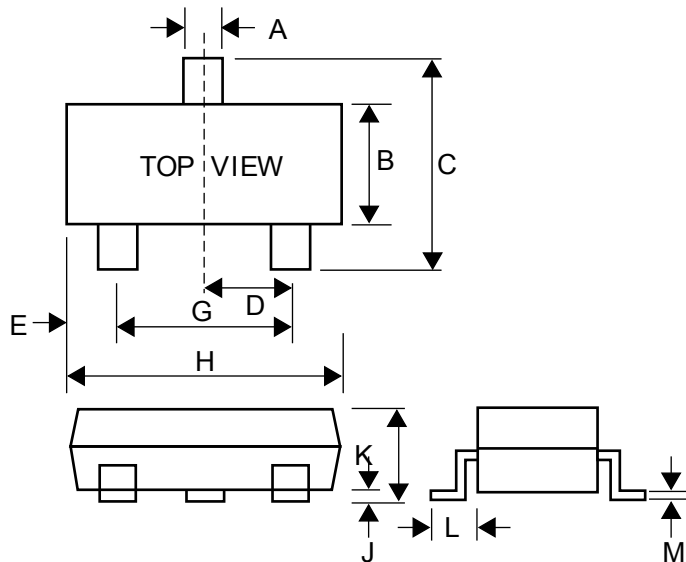
250 VOLTS



SOT-23

SOT-23 Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25

Maximum Ratings

Characteristic	Symbol	Value	Unit
Reverse Voltage	V_R	250	V
Forward Current	I_F	225	mA
Total Device Dissipation FR-5 Board, (1) $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate, (2) $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Peak Forward Surge Current	I_{FSM}	625	mA
Junction and Storage Temperature	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$



Electrical Characteristics ($T_A=25^\circ\text{C}$ Unless otherwise noted)

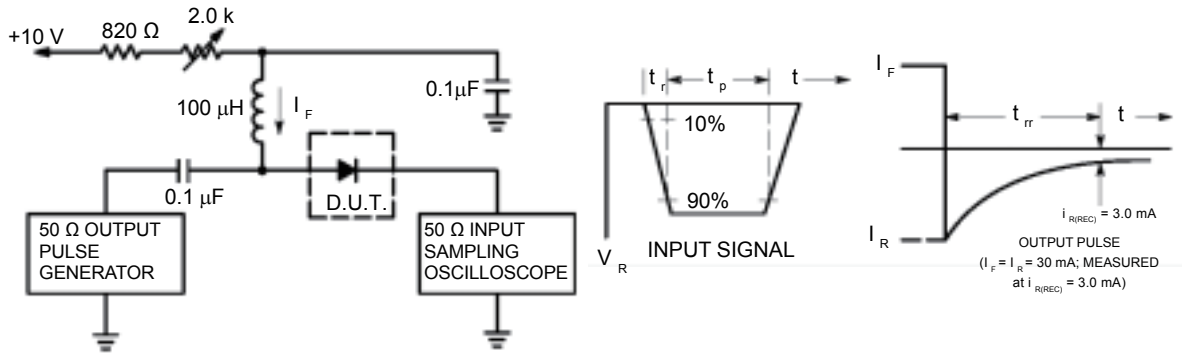
Characteristic	Symbol	Min	Max	Unit
Reverse Breakdown Voltage $I_R=100\mu\text{A}$	$V_{(BR)}$	250	-	V
Forward Voltage $I_F=100\text{mA}$ $I_F=200\text{mA}$	V_F	-	1.0 1.25	V
Reverse Leakage $V_R=200\text{V}$ $V_R=200\text{V}, T_j=150^\circ\text{C}$	I_R	-	0.1 100	μA
Total Capacitance $V_R=0\text{V}, f=1.0\text{MHz}$	C_D	-	5.0	pF
Reverse Recover Time	T_{rr}	-	50	nS

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.

Device Marking

Item	Marking	Equivalent Circuit diagram
BAS21C	JU	
BAS21S	JT	



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 30 mA.
 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 30 mA.
 3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

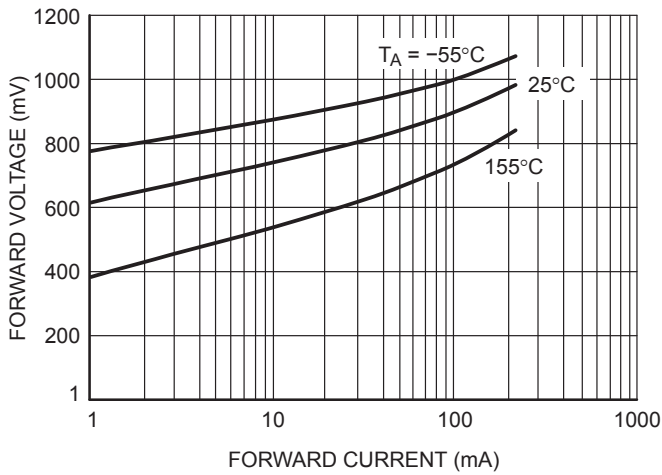


Figure 2. Forward Voltage

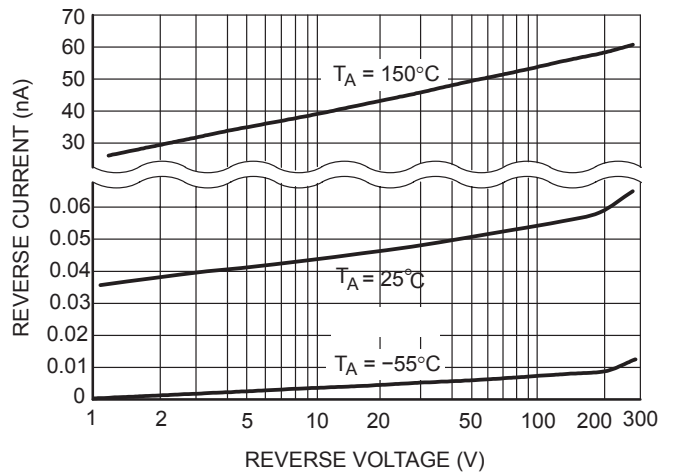


Figure 3. Reverse Leakage