



DESCRIPTION

These Schottky barrier diodes are designed for high speed switching applications, 3 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.

The BAT54S is available in SOT-23 Package.

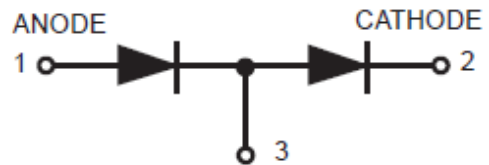
ORDERING INFORMATION

Package Type	Part Number
SOT-23	BAT54S-1
Note	Package Q'ty/Reel 1=3,000pcs/Reel
AiT provides all RoHS Compliant Products	

FEATURES

- Extremely Fast Switching Speed
- Low Forward Voltage- 0.35Volts (Typ)
@ $I_F = 10\text{mAdc}$
- Available in SOT-23 Package

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

$T_J = 125^\circ\text{C}$ unless otherwise specified

V_R , Reverse Voltage	30Volts
P_D , Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	225mW 1.8mW/ $^\circ\text{C}$
I_F , Forward Current (DC)	200mA
T_J , Junction Temperature	125 $^\circ\text{C}$
T_{stg} , Storage Temperature Range	-55 $^\circ\text{C}$ to +150 $^\circ\text{C}$

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ELECTRICAL CHARACTERISTICS

$T_J = 25^\circ\text{C}$ unless otherwise specified. (EACH DIODE)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 10\mu\text{A}$	30	-	-	Volts
Total Capacitance	C_T	$V_R = 1.0\text{V}$, $f = 1.0\text{MHz}$	-	7.6	10	pF
Reverse Leakage	I_R	$V_R = 25\text{V}$	-	0.5	2.0	μA dc
Forward Voltage	V_F	$I_F = 0.1\text{mA}$ dc	-	0.22	0.24	Vdc
Forward Voltage	V_F	$I_F = 30\text{mA}$ dc	-	0.41	0.5	Vdc
Forward Voltage	V_F	$I_F = 100\text{mA}$ dc	-	0.52	1.0	Vdc
Reverse Recovery Time	t_{rr}	$I_F = I_R = 10\text{mA}$ dc $I_{R(\text{REC})} = 1.0\text{mA}$ dc ^{Figure 1}	-	-	5.0	ns
Forward Voltage	V_F	$I_F = 1.0\text{mA}$ dc	-	0.29	0.32	Vdc
Forward Voltage	V_F	$I_F = 10\text{mA}$ dc	-	0.35	0.40	Vdc
Forward Current	I_F	DC	-	-	200	mA
Repetitive Peak Forward Current	I_{FRM}		-	-	300	mA
Non-Repetitive Peak Forward Current	I_{FSM}	$t < 1.0\text{s}$	-	-	600	mA



TEST CIRCUITS

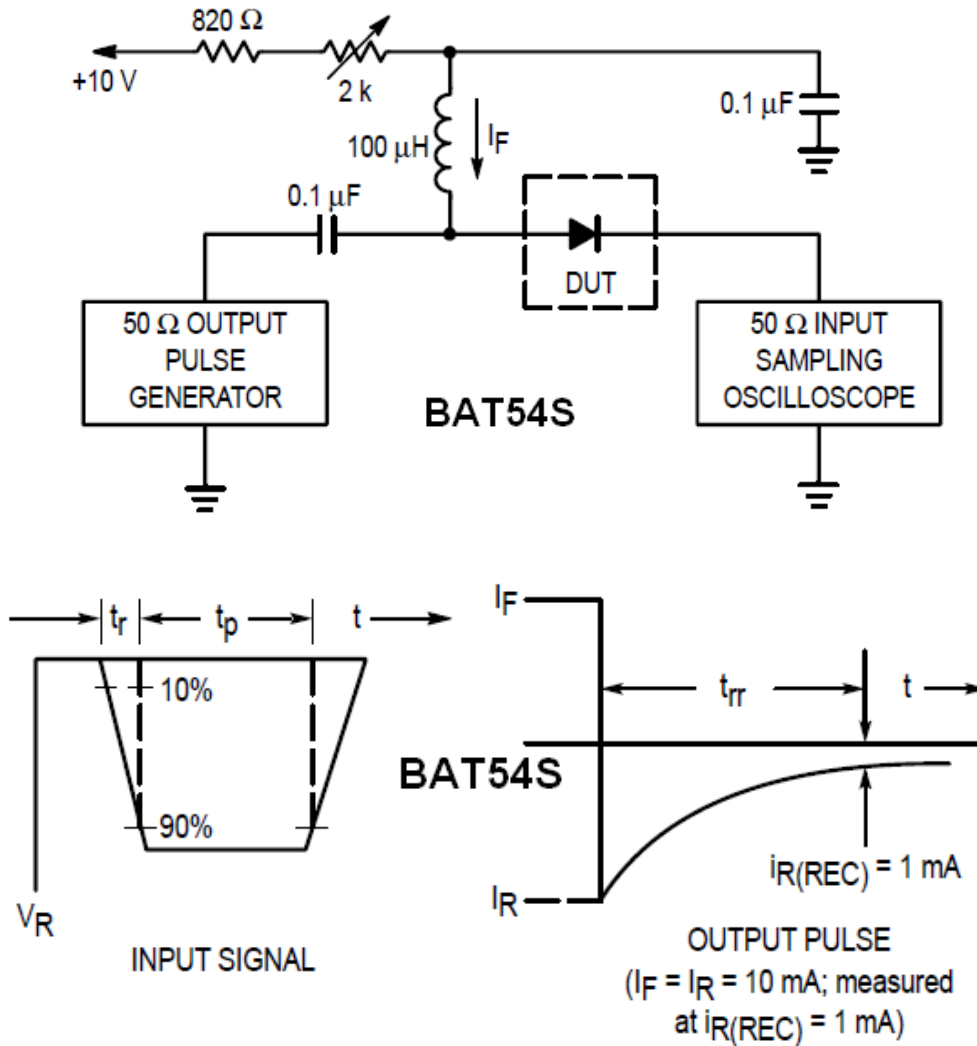


Figure 1. Recovery Time Equivalent Test Circuit

NOTE: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10mA.

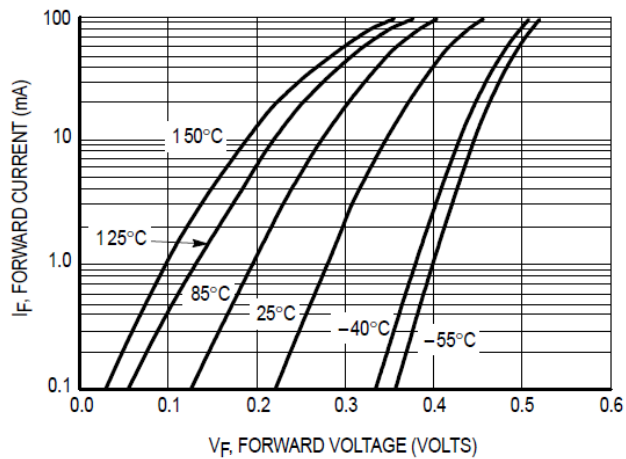
NOTE: 2. Input pulse is adjusted so $I_{R(\text{peak})}$ is equal to 10mA.

NOTE: 3. $t_p \gg t_{rr}$

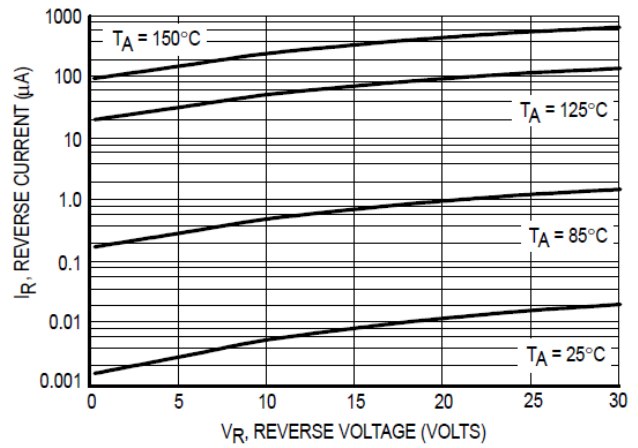


TYPICAL CHARACTERISTICS

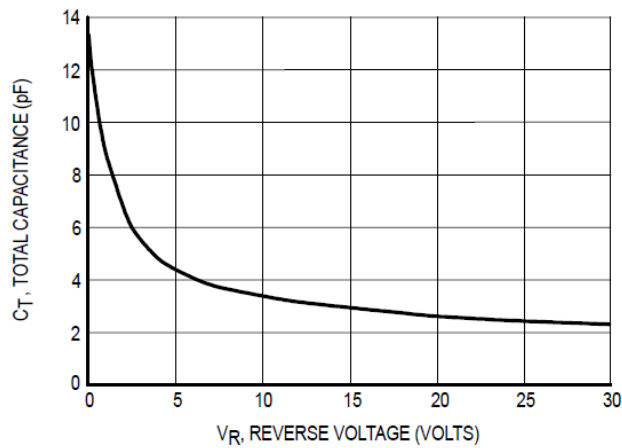
1. Forward Voltage



2. Leakage Current



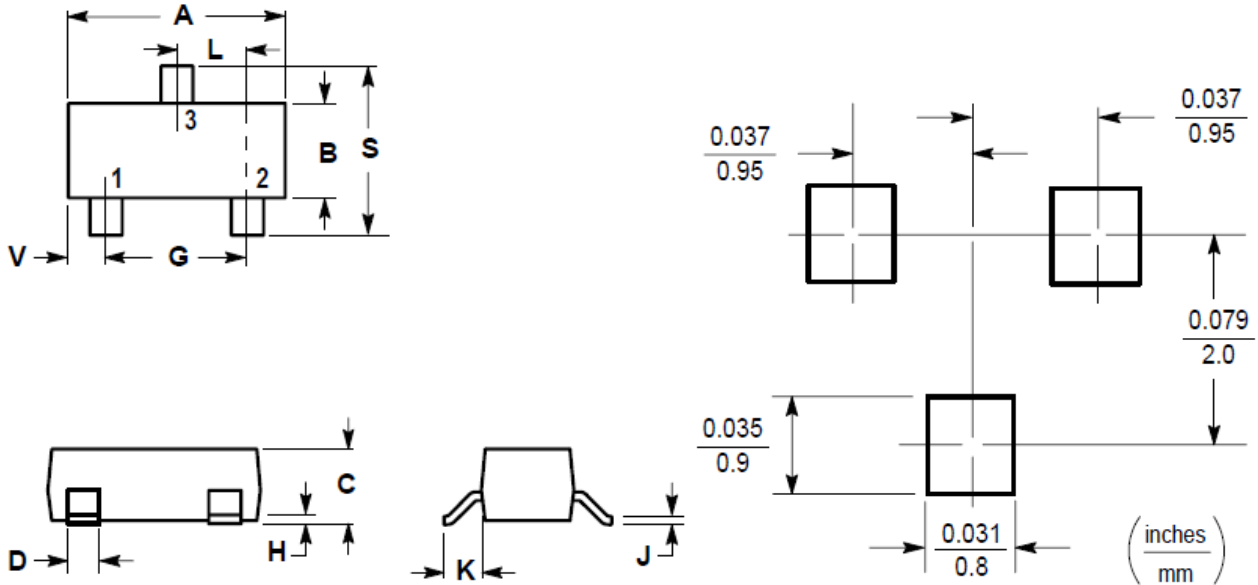
3. Total Capacitance





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	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	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60



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