



## DESCRIPTION

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.

- Extremely Fast Switching Speed
- Low Forward Voltage -  
0.35Volts (Typ) @  $I_F = 10\text{mA}$

The BAT54AL is available in SOT-23 Package.

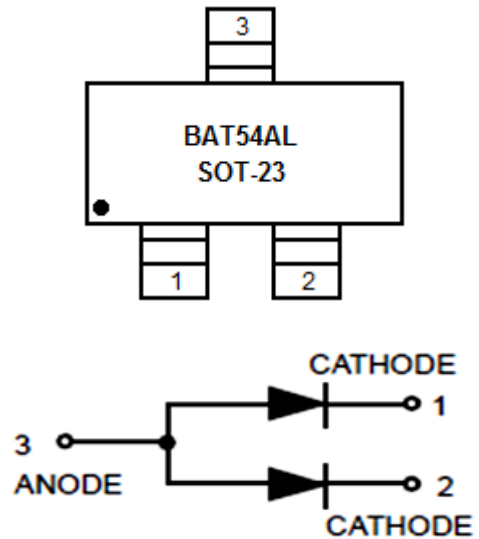
## ORDERING INFORMATION

Package Type	Part Number
SOT-23	BAT54AL
Note	3,000pcs/Reel
AiT provides all RoHS Compliant Products	

## FEATURES

- RoHS Compliant
- Available in SOT-23 Package

## PIN DESCRIPTION





## ABSOLUTE MAXIMUM RATINGS

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

$V_R$ , Reverse Voltage	30 Volts
$P_F$ , Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	225mW 1.8mW/ $^\circ\text{C}$
$I_F$ , Forward Current (DC)	200Max mA
$T_J$ , Junction Temperature	125Max $^\circ\text{C}$
$T_{stg}$ , 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.



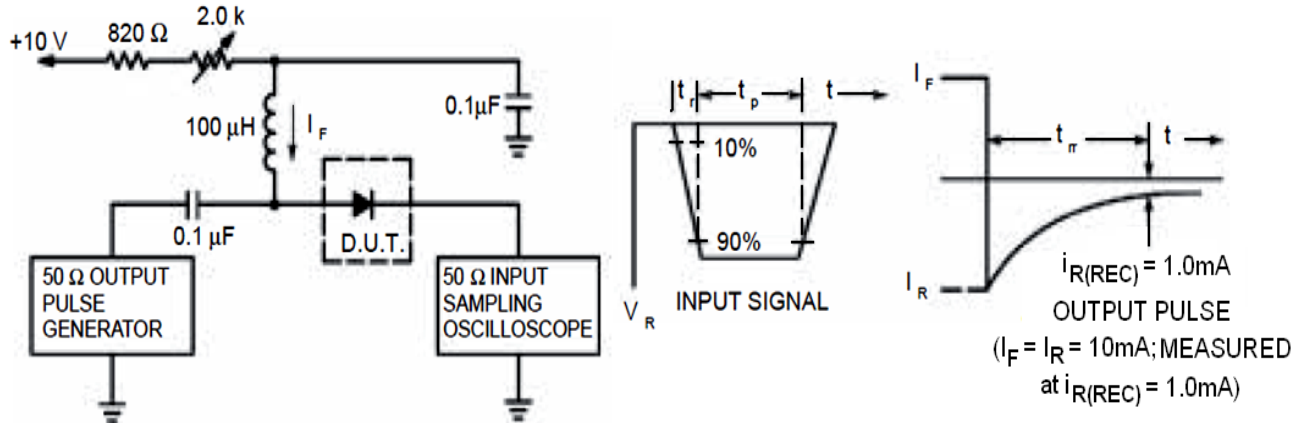
## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C unless otherwise specified (EACH DIODE)

Parameter	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I <sub>R</sub> = 10μA)	V <sub>(BR)R</sub>	30	-	-	Volts
Total Capacitance (V <sub>R</sub> = 1.0V, f = 1.0MHz)	C <sub>T</sub>	-	7.6	10	pF
Reverse Leakage (V <sub>R</sub> = 25V)	I <sub>R</sub>	-	0.5	2.0	μA <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 0.1mA <sub>dc</sub> )	V <sub>F</sub>	-	0.22	0.24	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 30mA <sub>dc</sub> )	V <sub>F</sub>	-	0.41	0.5	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 100mA <sub>dc</sub> )	V <sub>F</sub>	-	0.52	1.0	V <sub>dc</sub>
Reverse Recovery Time (I <sub>F</sub> = I <sub>R</sub> = 10mA <sub>dc</sub> , I <sub>R(REC)</sub> = 1.0mA <sub>dc</sub> ) <sup>Figure 1</sup>	t <sub>rr</sub>	-	-	5.0	ns
Forward Voltage (I <sub>F</sub> = 1.0mA <sub>dc</sub> )	V <sub>F</sub>	-	0.29	0.32	V <sub>dc</sub>
Forward Voltage (I <sub>F</sub> = 10mA <sub>dc</sub> )	V <sub>F</sub>	-	0.35	0.40	V <sub>dc</sub>
Forward Current (DC)	I <sub>F</sub>	-	-	200	mA <sub>dc</sub>
Repetitive Peak Forward Current	I <sub>FRM</sub>	-	-	300	mA <sub>dc</sub>
Non-Repetitive Peak Forward Current (t < 1.0 s)	I <sub>FSM</sub>	-	-	600	mA <sub>dc</sub>

## TYPICAL CHARACTERISTICS

Figure 1. Recovery Time Equivalent Test Circuit



NOTE1: A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.

NOTE2: Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10mA.

NOTE3:  $t_p \gg t_{rr}$

Figure 2. Forward Voltage

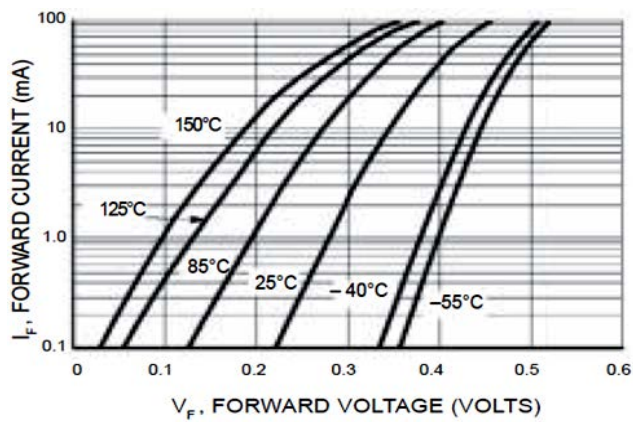


Figure 3. Leakage Current

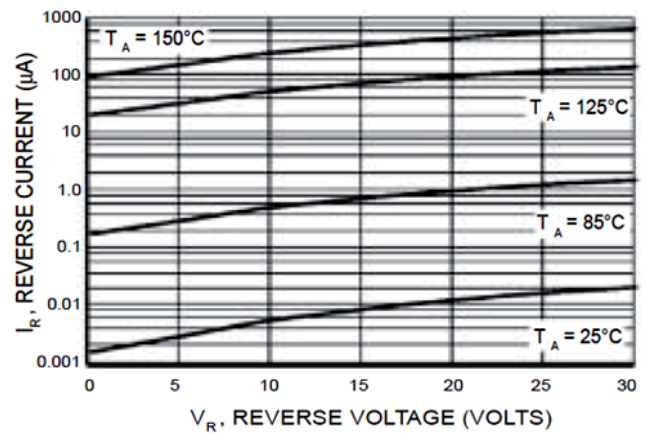
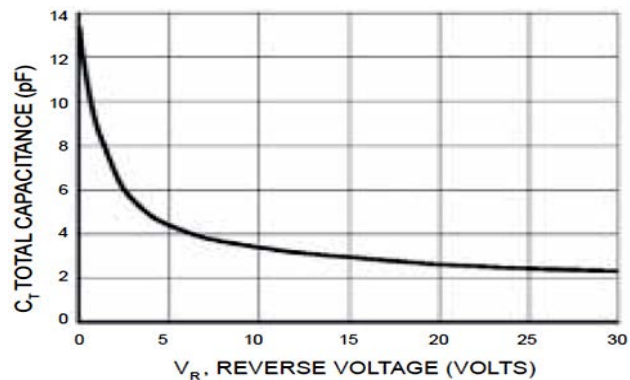


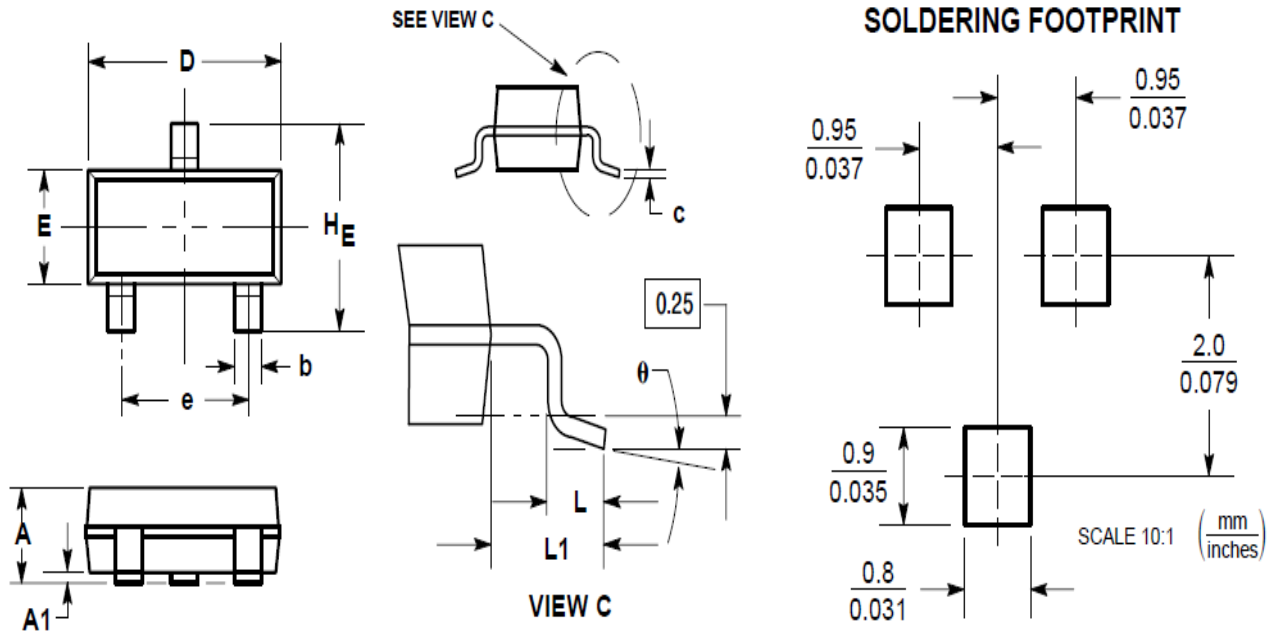
Figure 4. Total Capacitance





**PACKAGE INFORMATION**

Dimension in SOT-23 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.035	0.044	0.89	1.11
A1	0.001	0.004	0.01	0.10
b	0.015	0.020	0.37	0.50
c	0.003	0.007	0.09	0.18
D	0.110	0.120	2.80	3.04
E	0.047	0.055	1.20	1.40
e	0.070	0.081	1.78	2.04
L	0.004	0.012	0.10	0.30
L1	0.014	0.029	0.35	0.69
HE	0.083	0.104	2.10	2.64



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