



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.

The BAT54 is available in SOT-23 Package

FEATURES

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

ORDERING INFORMATION

Package Type	Part Number
SOT-23	BAT54
Note	3,000PCS/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

T_J =125°C unless otherwise noted

V _R , Reverse Voltage		30 Volts
P _D , Forward Power Dissipation	@ TA = 25°C	225 mW
	Derate above 25°C	2.0 mW/°C
I _F , Forward Current (DC)		200 Max mA
T _J , Junction Temperature		125 Max °C
T _{stg} , Storage Temperature Range		-55 °C to +150 °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.



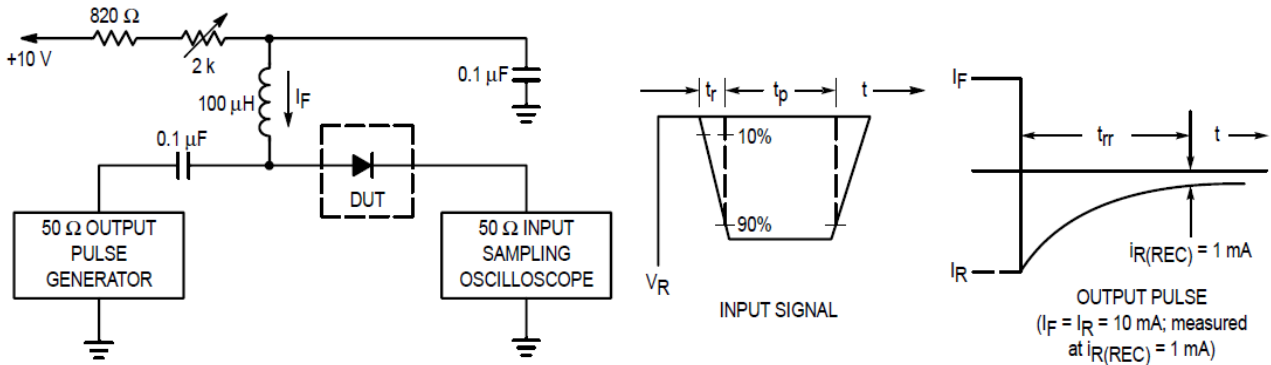
ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise specified

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

TYPICAL CHARACTERISTICS

Figure 1. Recovery Time Equivalent Test Circuit



Note1: A 2.0 k Ω variable resistor adjusted for a Forward Current (I_F) of 10 mA.

Note2: Input pulse is adjusted so $I_R(\text{peak})$ is equal to 10 mA.

Note3: $t_p \gg t_{rr}$

Figure 2. Forward Voltage

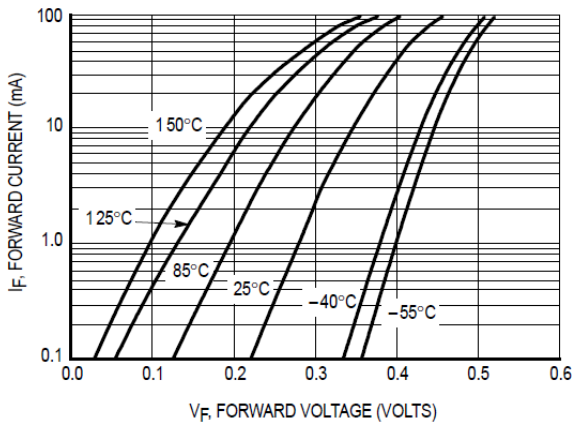


Figure 3. Leakage Current

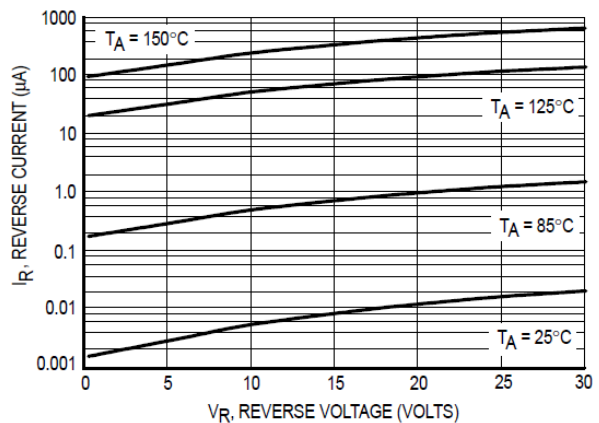
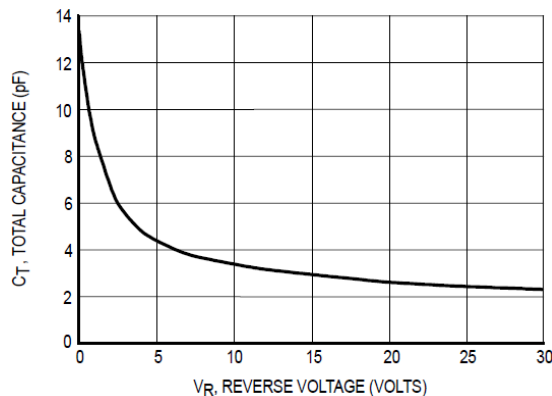


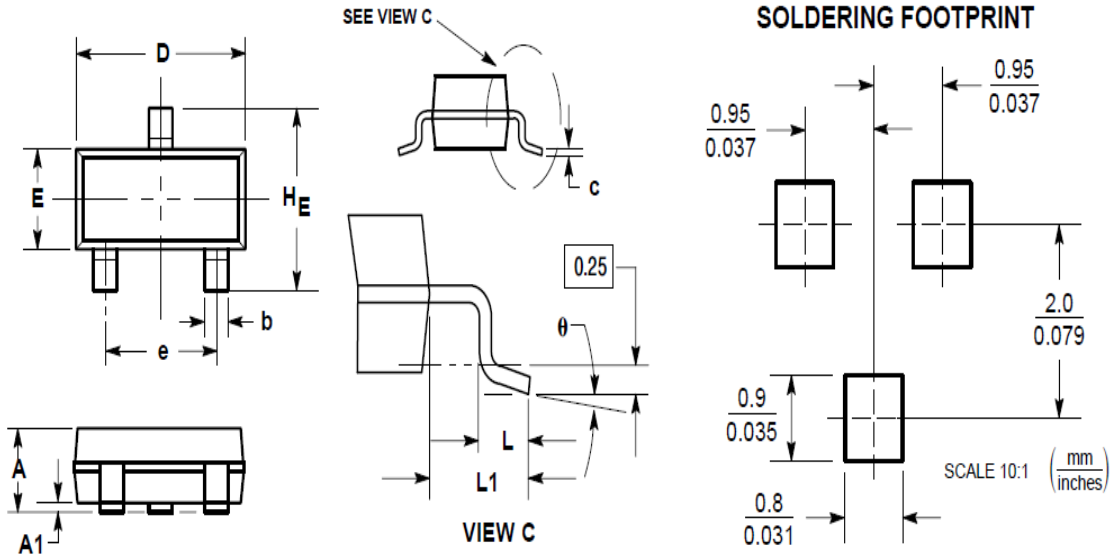
Figure 4. Total Capacitance





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



IMPORTANT NOTICE

AiT Components (AiT) reserves the right to make changes to any its product, specifications, to discontinue any integrated circuit product or service without notice, and advises its customers to obtain the latest version of relevant information to verify, before placing orders, that the information being relied on is current.

AiT Components' integrated circuit products are not designed, intended, authorized, or warranted to be suitable for use in life support applications, devices or systems or other critical applications. Use of AiT products in such applications is understood to be fully at the risk of the customer. As used herein may involve potential risks of death, personal injury, or severe property, or environmental damage. In order to minimize risks associated with the customer's applications, the customer should provide adequate design and operating safeguards.

AiT Components assumes no liability to customer product design or application support. AiT warrants the performance of its products of the specifications applicable at the time of sale.