



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 BAT54CL is available in SOT-23 Package

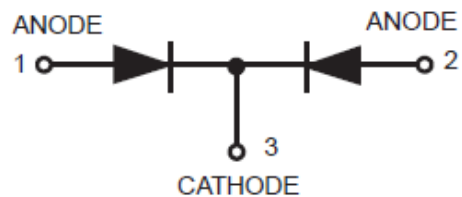
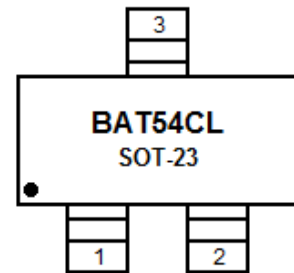
FEATURES

- Extremely Fast Switching Speed
- Low Forward Voltage — 0.35 V (Typ.)
@ $I_F=10\text{mA}$
- RoHS Compliant
- Available in SOT-23 Package

ORDERING INFORMATION

Package Type	Part Number
SOT-23	BAT54CL
Note	3,000pcs/Reel
AiT provides all RoHS Compliant Products	

PIN DESCRIPTION





ABSOLUTE MAXIMUM RATINGS

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

V_R , Reverse Voltage	30 V
P_F , 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	$-55^\circ\text{C} \sim +150^\circ\text{C}$

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.



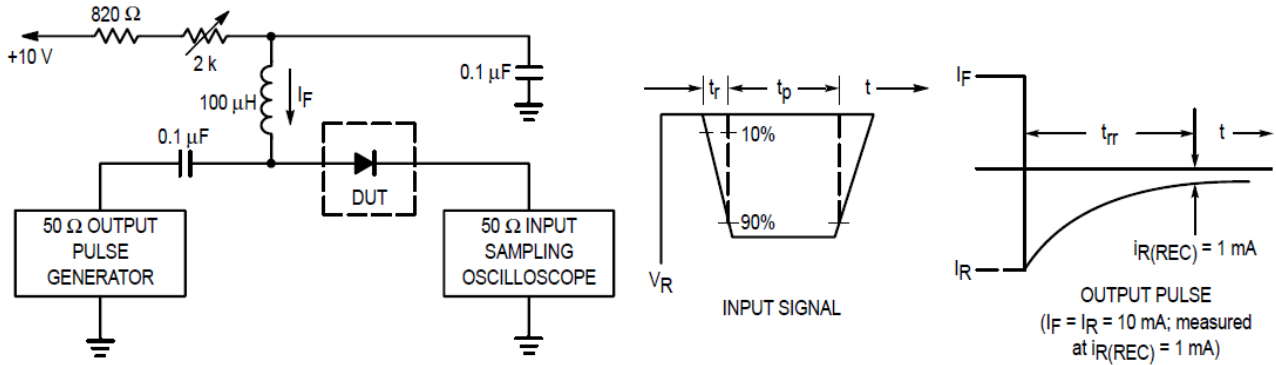
ELECTRICAL CHARACTERISTICS

T_A = 25°C unless otherwise noted

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

TYPICAL CHARACTERISTICS

Figure 1. Recovery Time Equivalent Test Circuit



Note1: A 2.0KΩ 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

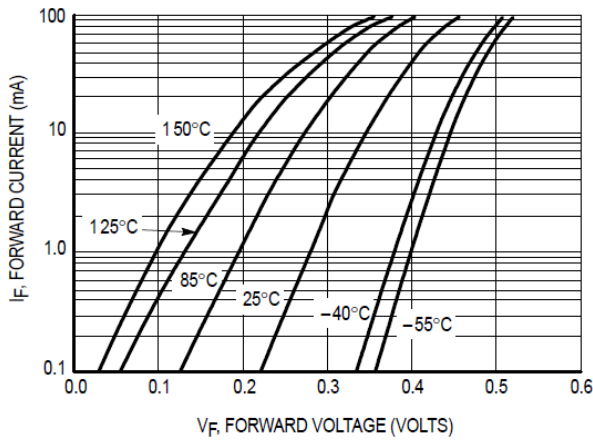


Figure 3. Leakage Current

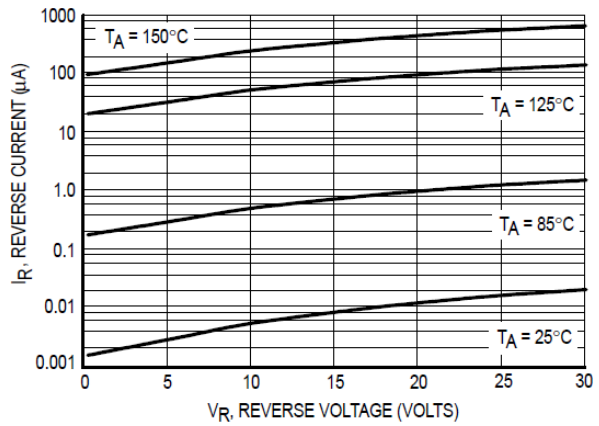
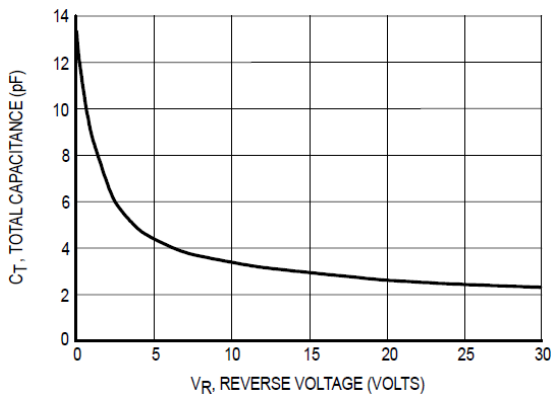


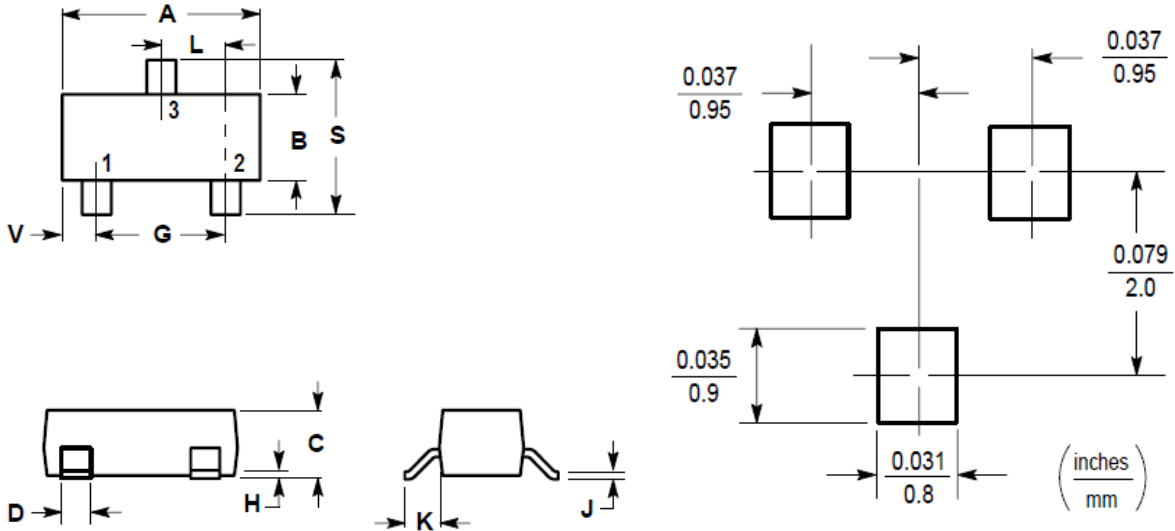
Figure 4. Total Capacitance





PACKAGE INFORMATION

Dimension in SOT-23 Package (Unit: mm)



DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.04	0.1102	0.1197
B	1.20	1.40	0.0472	0.0551
C	0.89	1.11	0.0350	0.0440
D	0.37	0.50	0.0150	0.0200
G	1.78	2.04	0.0701	0.0807
H	0.013	0.100	0.0005	0.0040
J	0.085	0.177	0.0034	0.0070
K	0.35	0.69	0.0140	0.0285
L	0.89	1.02	0.0350	0.0401
S	2.10	2.64	0.0830	0.1039
V	0.45	0.60	0.0177	0.0236



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