

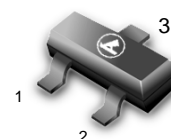
# Schottky Barrier Diodes

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.

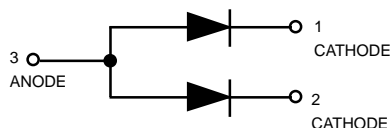
- Extremely Fast Switching Speed
- Low Forward Voltage — 0.35 Volts (Typ) @  $I_F = 10 \text{ mAdc}$

## BAT54RALT1

30 VOLTS  
SCHOTTKY BARRIER  
DETECTOR AND  
SWITCHING  
DIODES



CASE 318-08, STYLE 12  
SOT-23 (TO-236AB)



### DEVICE MARKING

BAT54RALT1 = B6

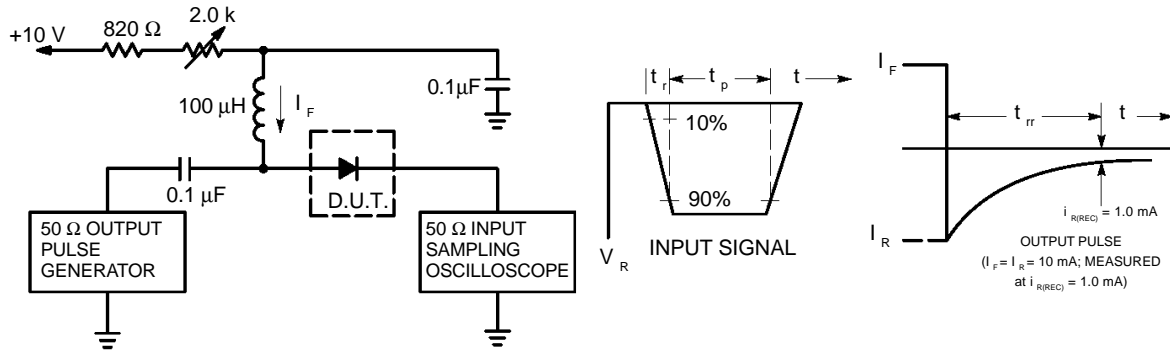
### MAXIMUM RATINGS (T<sub>J</sub> = 125°C unless otherwise noted)

Rating	Symbol	Max	Unit
Reverse Voltage	$V_R$	30	Volts
Forward Power Dissipation @ T <sub>A</sub> = 25°C	$P_F$	225	mW
Derate above 25°C		1.8	mW/°C
Operating Junction Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted) (EACH DIODE)

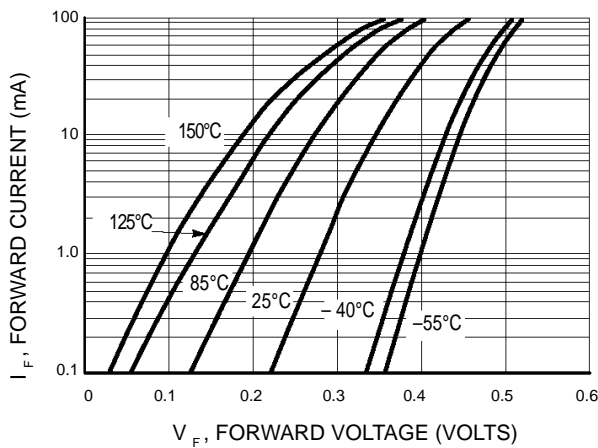
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I <sub>R</sub> = 10 μA)	$V_{(BR)R}$	30	—	—	Volts
Total Capacitance (V <sub>R</sub> = 1.0 V, f = 1.0 MHz)	C <sub>T</sub>	—	7.6	10	pF
Reverse Leakage (V <sub>R</sub> = 25 V)	I <sub>R</sub>	—	0.5	2.0	μAdc
Forward Voltage (I <sub>F</sub> = 0.1 mAdc)	V <sub>F</sub>	—	0.22	0.24	Vdc
Forward Voltage (I <sub>F</sub> = 30 mAdc)	V <sub>F</sub>	—	0.41	0.5	Vdc
Forward Voltage (I <sub>F</sub> = 100 mAdc)	V <sub>F</sub>	—	0.52	1.0	Vdc
Reverse Recovery Time (I <sub>F</sub> = I <sub>R</sub> = 10 mAdc, I <sub>R(REC)</sub> = 1.0 mAdc) Figure 1	t <sub>rr</sub>	—	—	5.0	ns
Forward Voltage (I <sub>F</sub> = 1.0 mAdc)	V <sub>F</sub>	—	0.29	0.32	Vdc
Forward Voltage (I <sub>F</sub> = 10 mAdc)	V <sub>F</sub>	—	0.35	0.40	Vdc

**BAT54RALT1**

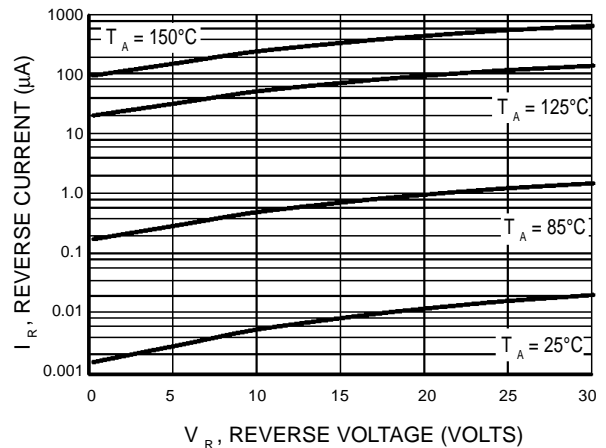


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10mA.  
 3.  $t_p \gg t_{rr}$

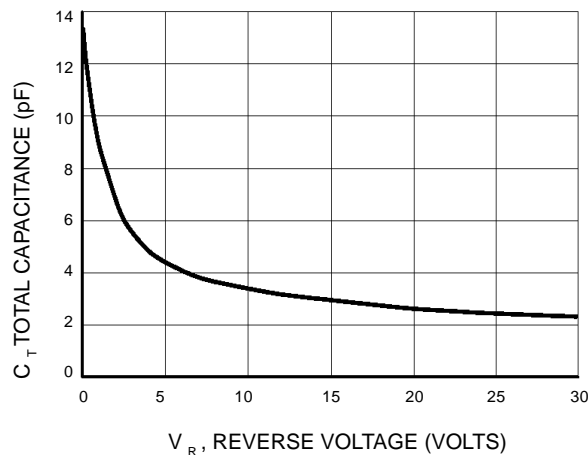
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Total Capacitance**