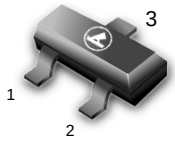
Schottky Barrier Diodes

BAT54RLT1

30 VOLTS
SILICON HOT- CARRIER DETECTOR AND SWITCHING 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 mAdc



CASE 318–08, STYLE 8
SOT–23 (TO–236AB)

DEVICE MARKING

BAT54RLT1 = LV3

MAXIMUM RATINGS (T_J = 125°C unless otherwise noted)

Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	Volts
Forward Power Dissipation	P_F		
@ T_A = 25°C		200	mW
Derate above 25°C		2.0	mW/°C
Operating Junction	T_J		
Temperature Range		–55 to +125	°C
Storage Temperature Range	T_{stg}	–55 to +150	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μA)	$V_{(BR)R}$	30	—	—	Volts
Total Capacitance (V_R = 1.0 V, f = 1.0 MHz)	C_T	—	7.6	10	pF
Reverse Leakage (V_R = 25 V)	I_R	—	0.5	2.0	μAdc
Forward Voltage (I_F = 0.1 mAdc)	V_F	—	0.22	0.24	Vdc
Forward Voltage (I_F = 30 mAdc)	V_F	—	0.41	0.5	Vdc
Forward Voltage (I_F = 100 mAdc)	V_F	—	0.52	1.0	Vdc
Reverse Recovery Time					
(I_F = I_R = 10 mAdc, $I_{R(REC)}$ = 1.0 mAdc) Figure 1	t_{rr}	—	—	5.0	ns
Forward Voltage (I_F = 1.0 mAdc)	V_F	—	0.29	0.32	Vdc
Forward Voltage (I_F = 10 mAdc)	V_F	—	0.35	0.40	Vdc

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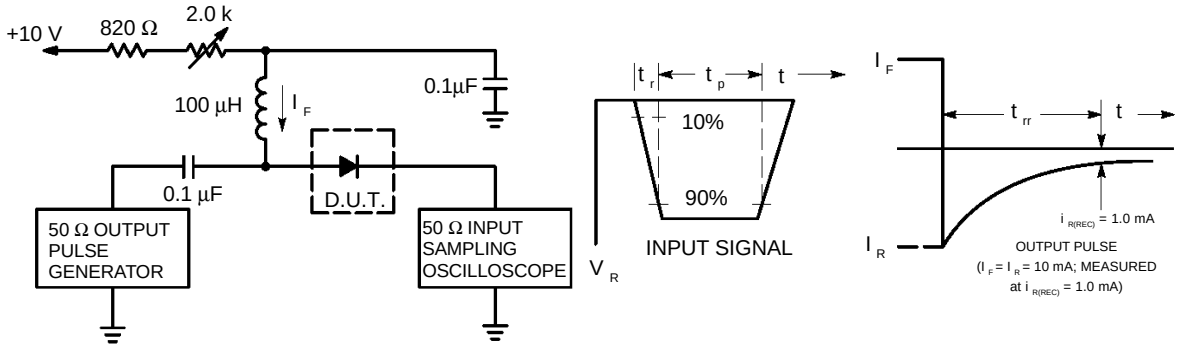

Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10mA.
3. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

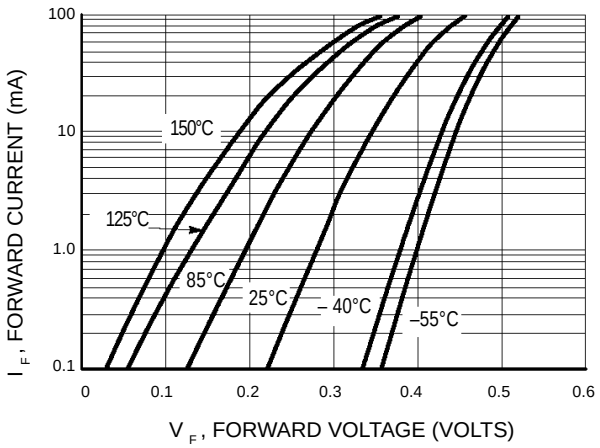

Figure 2. Forward Voltage

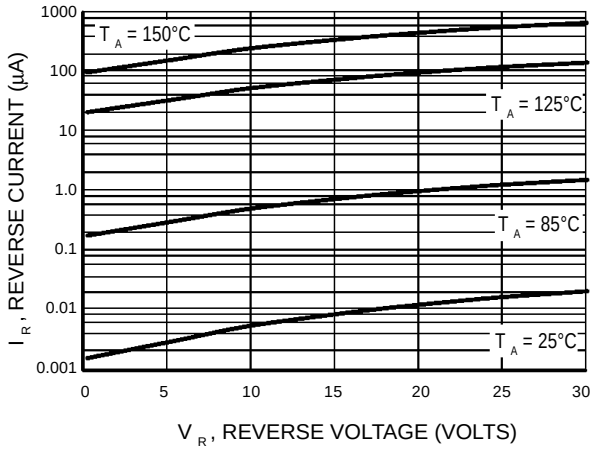

Figure 3. Leakage Current

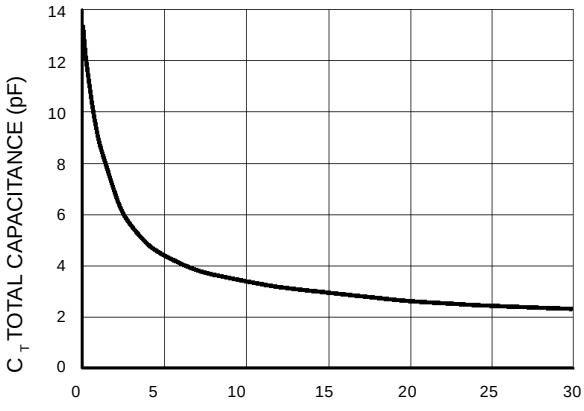

Figure 4. Total Capacitance