

# Surface Mount Schottky Diode

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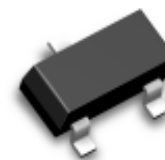
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## BAT54 Series Voltage: 30 Volts Current: 200mA

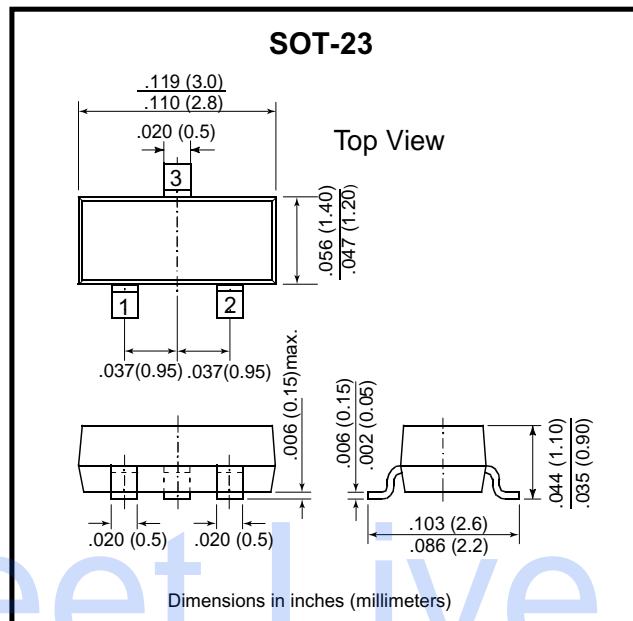
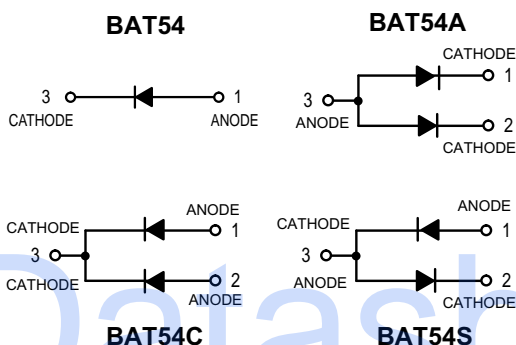
### Features

- Low Turn-on Voltage
- Fast Switching
- PN Junction Guard Ring for Transient and ESD Protection



### Mechanical data

- Case: SOT-23, Molded Plastic
- Terminals: Solderable per MIL-STD-202, Method 208
- Polarity: See Diagrams Below
- Weight: 0.008 grams (approx.)
- Mounting Position: Any



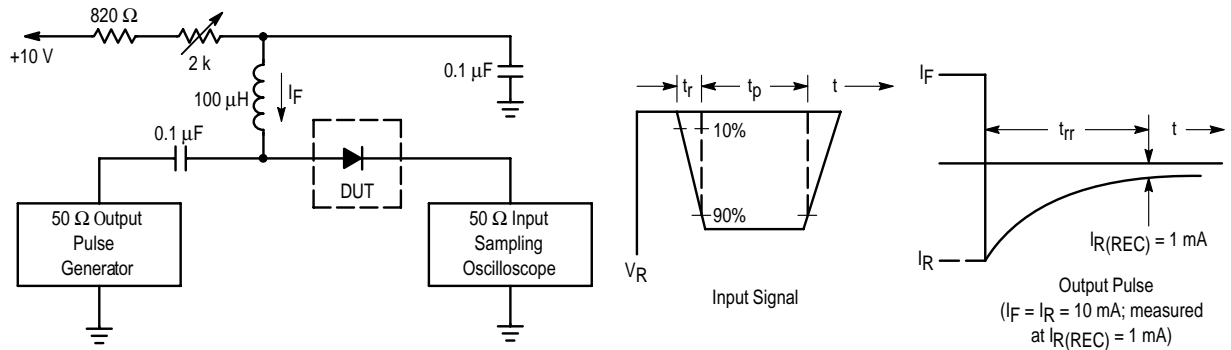
### Maximum Ratings ( $T_A = 125^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Units
Reverse Voltage	$V_R$	30	Volts
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_F$	225 1.8	mW mW/ $^\circ\text{C}$
Forward Current (DC)	$I_F$	200 Max	mA
Junction Temperature	$T_J$	125 Max	$^\circ\text{C}$
Storage Temperature Range	$T_{\text{stg}}$	-55 to +150	$^\circ\text{C}$

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted) (EACH DIODE)

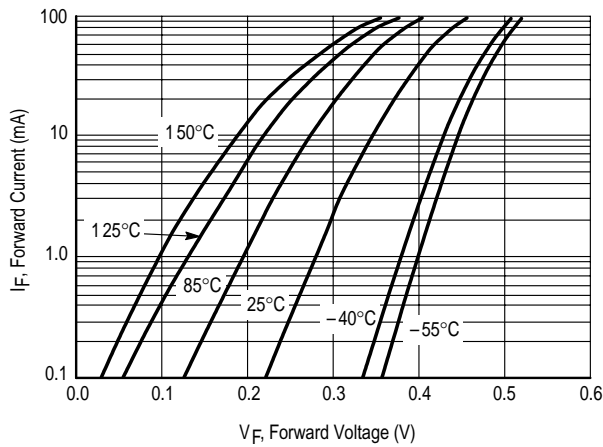
Parameter	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \text{ mA}$ )	$V_{(BR)R}$	30	—	—	Volts
Total Capacitance ( $V_R = 1.0 \text{ V}$ , $f = 1.0 \text{ MHz}$ )	$C_T$	—	7.60	10.0	pF
Reverse Leakage ( $V_R = 25 \text{ V}$ )	$I_R$	—	0.50	2.0	mAdc
Forward Voltage ( $I_F = 0.1 \text{ mAdc}$ ) ( $I_F = 30 \text{ mAdc}$ ) ( $I_F = 100 \text{ mAdc}$ )	$V_F$	—	0.22 0.41 0.52	0.24 0.5 1.0	Vdc
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mAdc}$ , $I_R(\text{REC}) = 1.0 \text{ mAdc}$ ) Figure 1	$t_{rr}$	—	—	5.0	ns
Forward Voltage ( $I_F = 1.0 \text{ mAdc}$ ) ( $I_F = 10 \text{ mAdc}$ )	$V_F$	—	0.29 0.35	0.32 0.40	Vdc
Forward Current (DC)	$I_F$	—	—	200	mAdc
Repetitive Peak Forward Current	$I_{FRM}$	—	—	300	mAdc
Non-Repetitive Peak Forward Current ( $t < 1.0 \text{ s}$ )	$I_{FSM}$	—	—	600	mAdc

## RATING AND CHARACTERISTIC CURVES (BAT54 Series)

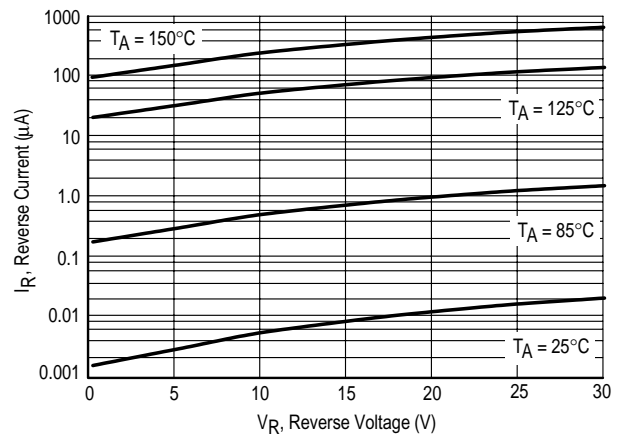


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

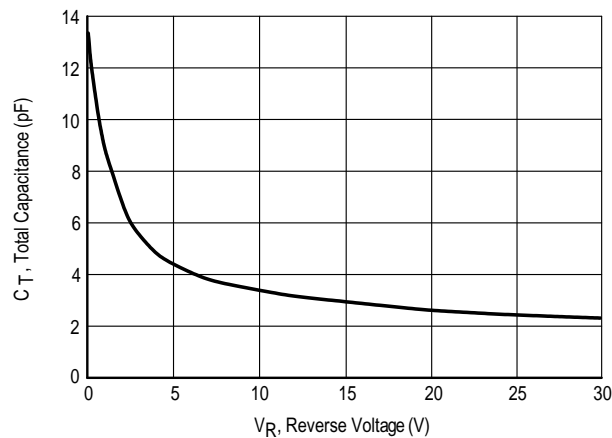
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Total Capacitance**