

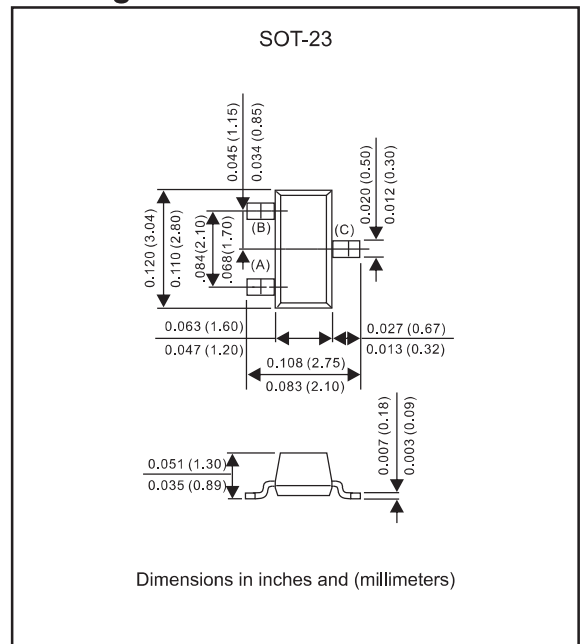
Features

- Low current rectification and high speed switching.
- Small surface mount type.
- Up to 200mA current capability.
- Low forward voltage drop.
- Silicon epitaxial planar chip, metal silicon junction.
- Lead-free parts for green partner, exceeds environmental standards of MIL-STD-19500 /228.
- High speed (trr < 5 ns).
- Compliant to Halogen-free
- Suffix "-Q1" for AEC-Q101

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

Package outline



Maximum ratings and Electrical Characteristics (AT T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Repetitive peak reverse voltage		V _{RRM}			30	V
Reverse voltage		V _R			30	V
Total Device dissipation	FR-5 board, (Note 1) T _A = 25°C Derate above 25°C	P _D			200 2.0	mW mW/°C
Repetitive peak forward current		I _{FRM}			300	mA
Forward surge current	tp<1s	I _{FSM}			600	mA
Forward current		I _F			200	mA
Thermal Resistance	Junction to ambient	R _{θJA}		500		°C/W
Operating Junction temperature range		T _J	-55		+125	°C
Storage temperature range		T _{STG}	-55		+125	°C
Forward voltage	I _F = 0.1 mA	V _F		0.220	0.240	V
	I _F = 1 mA	V _F		0.290	0.320	V
	I _F = 10 mA	V _F		0.350	0.400	V
	I _F = 30 mA	V _F		0.410	0.500	V
	I _F = 100 mA	V _F		0.520	1.000	V
Reverse current	V _R = 25 V	I _R		0.5	2.0	uA
Diode capacitance	V _R = 1 V, f = 1MHz	C _J		7.6	10.0	pF
Reverse recovery time	I _F = I _R = 10 mAdc, I _{R(REC)} = 1.0 mAdc	trr			5	ns

Note : 1.FR-5 = 1.0 x 0.75 x 0.062 in

Rating and characteristic curves for each diode (BAT54/A/C/S-Q1)

FIG.1-TYPICAL FORWARD CHARACTERISTICS

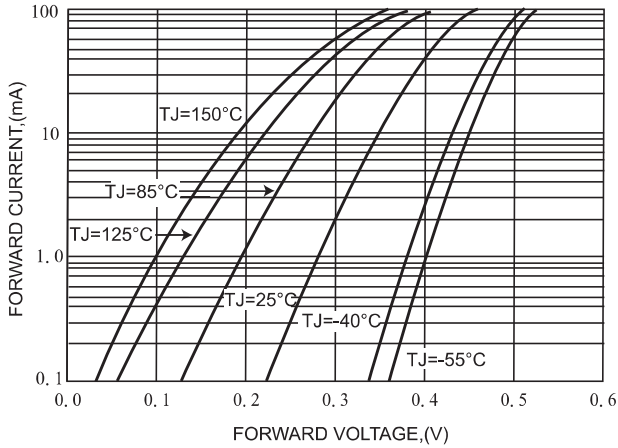


FIG.2 - TYPICAL LEAKAGE CURRENT CHARACTERISTICS

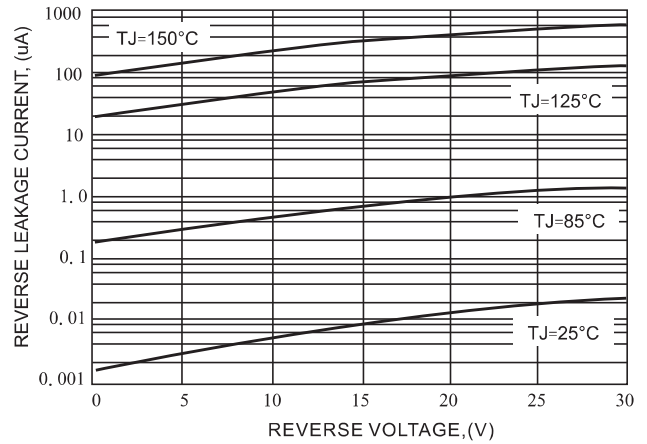
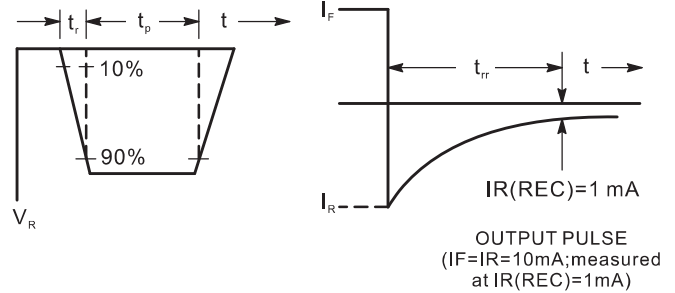
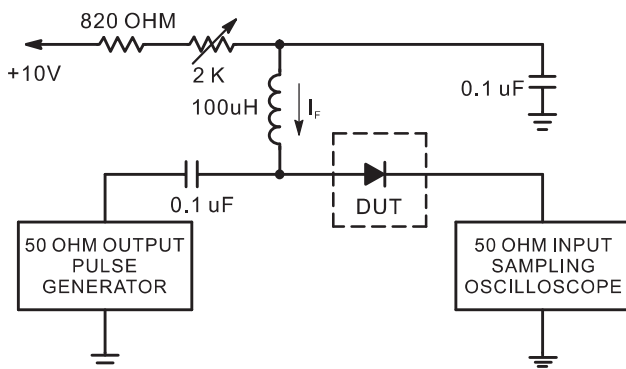
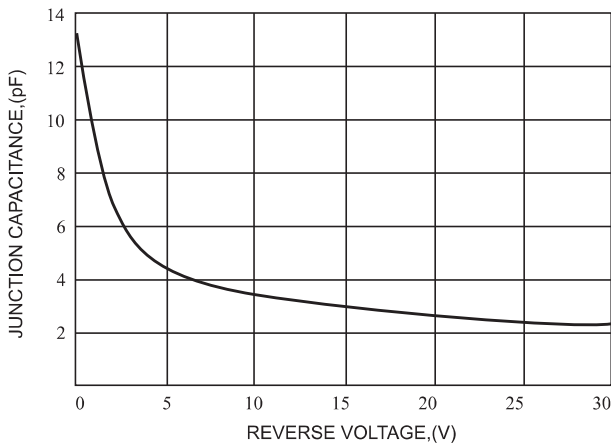


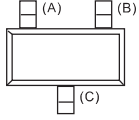
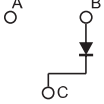
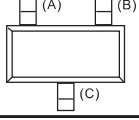
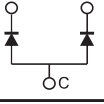
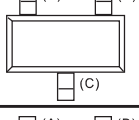
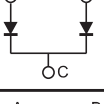
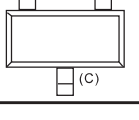
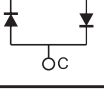
FIG.3-TYPICAL JUNCTION CAPACITANCE



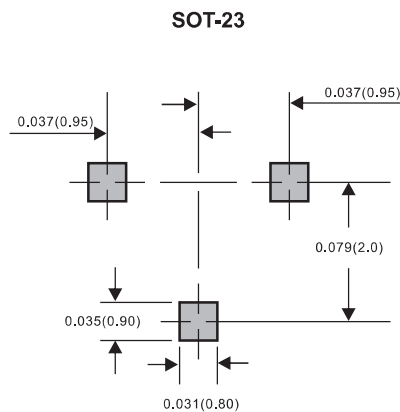
- Notes : 1. A2.0 Kohm variable resistor adjusted for a forward Current (I_F) of 10mA.
2. Input pulse is adjusted so $I_R(\text{peak})$ is equal to 10 mA.
3. $t_p \gg t_{rr}$.

Recovery Time Equivalent Test Circuit

Pinning information

Type number	Marking code	Simplified outline	Symbol
BAT54-Q1	JV3, LV3, L4, KL1		
BAT54A-Q1	B6, L42, KL2		
BAT54C-Q1	5C, KL3, L43		
BAT54S-Q1	LD3, L44, KL4		

Suggested solder pad layout



Dimensions in inches and (millimeters)