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TAIWAN SEMICONDUCTOR

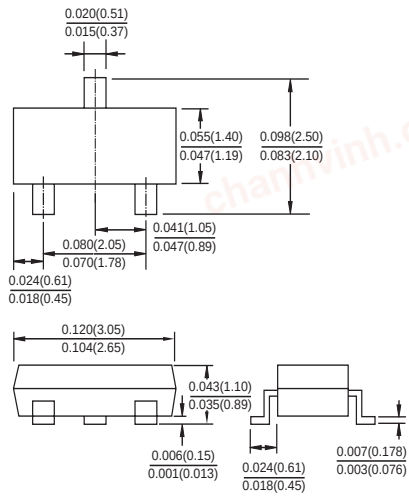
RoHS COMPLIANCE

BAT54 / A / C / S

200m Watts Surface Mount Schottky Barrier Diode

SOT-23





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 MIIL-STD-202, Method 208
- ✧ Marking & Polarity: See diagram
- ✧ Weight: 0.008 gram (approx.)

Dimensions in inches and (millimeters)



Maximum Ratings T_A=25 °C unless otherwise specified

Type Number	Symbol	Value	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	30	V
Forward Continuous Current	I_F	200	mA
Repetitive Peak Forward Current	I_{FM}	300	mA
Forward Surge Current @ t=1.0s	I_{FSM}	600	mA
Power Dissipation (Note 1)	Pd	200	mW
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	500	°C/W
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to + 125	°C

Electrical Characteristics

Type Number	Symbol	Min	Typ	Max	Units
Reverse Breakdown Voltage (Note 1)	$V_{(BR)R}$	30	-	-	V
Reverse Leakage Current (Note 1) VR=25V	I_R	-	--	2.0	uA
Forward Voltage (Note1) IF=0.1mA IF=1.0mA IF= 10mA IF = 30mA IF=100mA	V_F	-	--	240 320 400 500 1000	mV
Junction Capacitance VR=0, f=1.0MHz	Cj	-		10	pF
Reverse Recovery Time (Note 2)	trr	-		5.0	nS

Notes: 1. Short Duration Pulse Test used to Minimize Self-Heating Effect.
2. Reverse Recovery Test Conditions: IF=10mA through IR=10mA to IR=1.0mA, RL=100Ω.

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RATINGS AND CHARACTERISTIC CURVES (BAT54 / A / C / S)

FIG.1- POWER DERATING CURVE

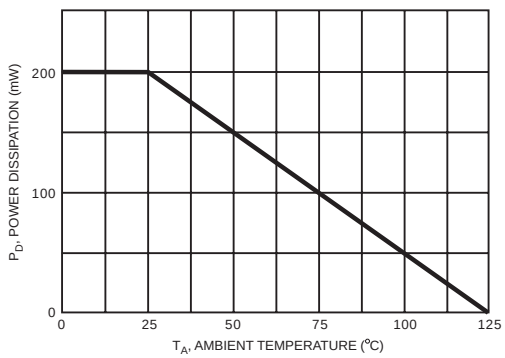

FIG.2- MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT PER LEG

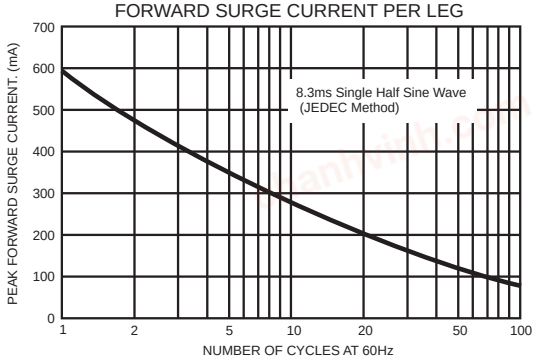

FIG.3- TYPICAL FORWARD CHARACTERISTICS

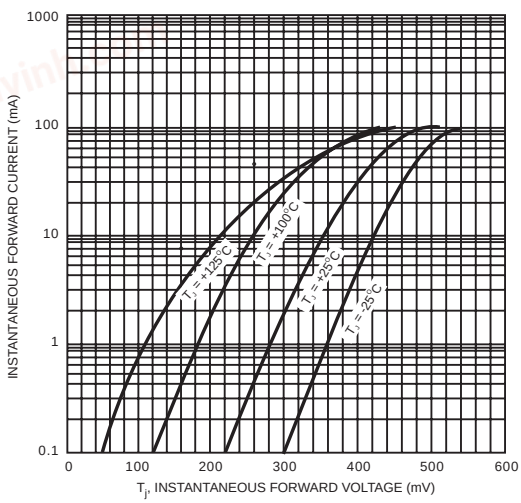

FIG.4- TYPICAL REVERSE CHARACTERISTICS

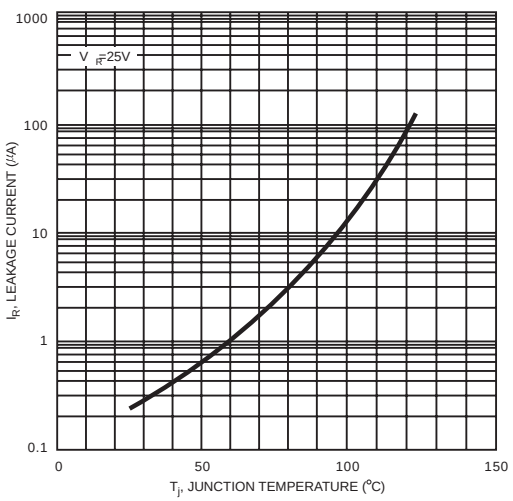

FIG.5- TYPICAL TOTAL CAPACITANCE VS REVERSE VOLTAGE

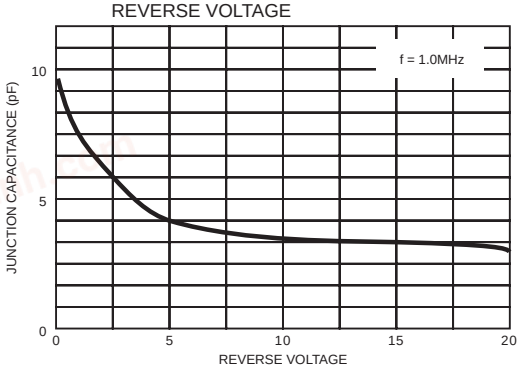

FIG.6- TYPICAL TRANSIENT THERMAL CHARACTERISTICS

