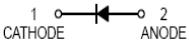
BAT54WS

Small Signal Schottky Barrier Diode

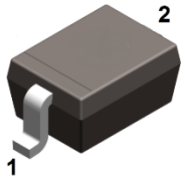
Features

- Low turn-on voltage
- Fast switching
- Ultra-small surface mount package
- PN junction guard for transient and ESD protection



Application

- Schottky barrier detector and switching diodes



SOD-323

Mechanical Data

- Case: SOD-323
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BAT54WS	SOD-323	3000 pcs / Tape & Reel	L9

Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage	V_{RRM}	30	V
Working Peak Reverse Voltage	V_{RWM}	30	V
DC Reverse Voltage	V_R	30	V
RMS Reverse Voltage	$V_{R(RMS)}$	21	V
Forward Continuous Current	I_F	200	mA
Peak Forward Surge Current (1s single half sine-wave)	I_{FSM}	600	mA
Repetitive Peak Forward Current	I_{FRM}	300	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation *1	P_D	200	mW
Thermal Resistance (Junction-to-Ambient) *2	$R_{\Theta JA}$	297	°C/W
Thermal Resistance (Junction-to-Case) *2	$R_{\Theta JC}$	203	°C/W
Thermal Resistance (Junction-to-Lead) *2	$R_{\Theta JL}$	231	°C/W
Operating junction Temperature	T_J	-55 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25°C unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	I_R = 100μA	30	-	-	V
Forward Voltage *3	V_{F1}	I_F = 0.1mA	-	-	240	mV
	V_{F2}	I_F = 1.0mA	-	-	320	mV
	V_{F3}	I_F = 10mA	-	-	400	mV
	V_{F4}	I_F = 30mA	-	-	500	mV
	V_{F5}	I_F = 100mA	-	-	1000	mV
Maximum Peak Reverse Current *4	I_R	V_R = 25V	-	-	2	μA
Reverse Recovery Time	t_{rr}	I_F = 10mA, I_R = 10mA to 1mA R_L = 100Ω	-	-	5.0	ns
Typical Junction Capacitance	C_J	V_R = 1V, f = 1MHZ	-	-	10	pF

Notes:

1. Part mounted on FR-4 board with recommended pad layout
2. The data tested by surface mounted on a 25.4mm * 25.4mm * 1mm FR4-epoxy P.C.B
3. Pulse test, tp ≤ 300μs
4. Pulse test, tp ≤ 5ms

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Ratings and Characteristic Curves (@ T_A = 25°C unless otherwise specified)

FIG 1.TYPICAL REVERSE CHARACTERISTIC

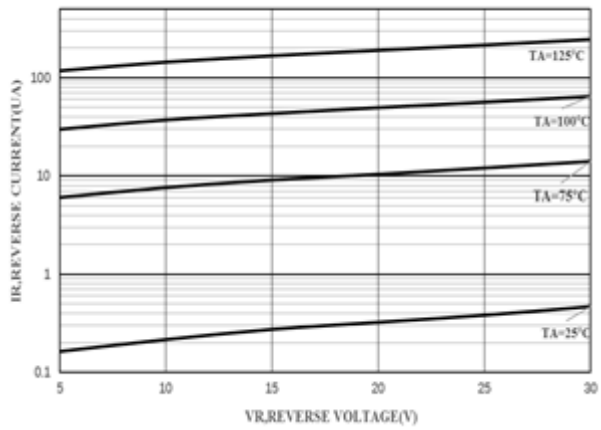


FIG 2.TYPICAL FORWARD CHARACTERISTIC

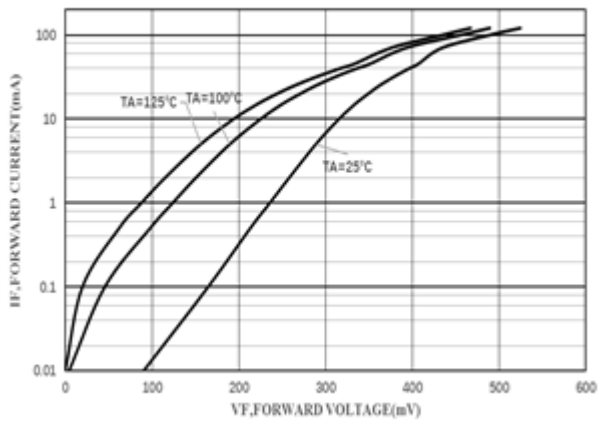


FIG 3.CAPACITANCE VS REVERSE VOLTAGE

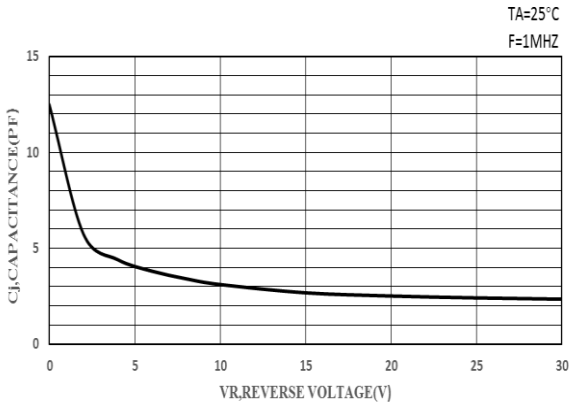
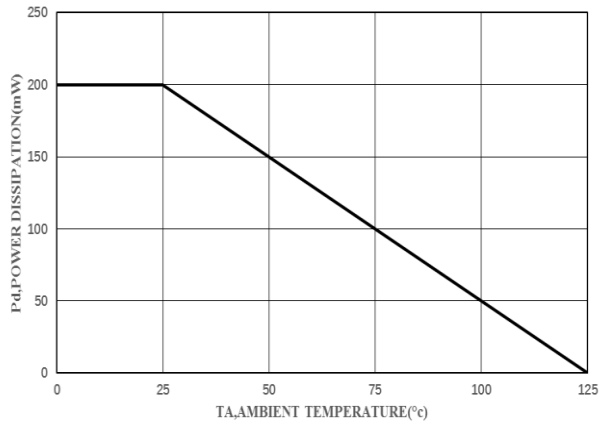


FIG 4.DERATING CURVE(Pd-TA)



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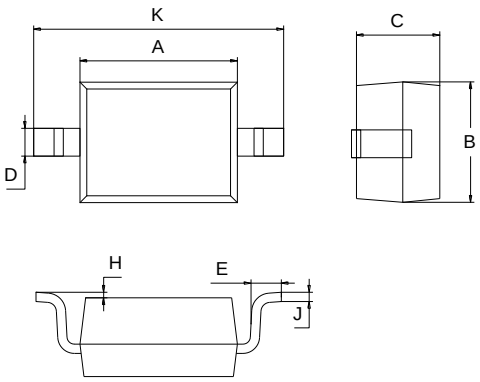
Package Outline Dimensions (Unit: mm)



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Dimension	**Min.**	**Max.**
A	1.60	1.80
B	1.20	1.40
C	0.80	0.90
D	0.25	0.35
E	0.22	0.42
H	0.02	0.10
J	0.05	0.15
K	2.55	2.75

Mounting Pad Layout (Unit: mm)

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