Small Signal Schottky Barrier Diode

BAT54V

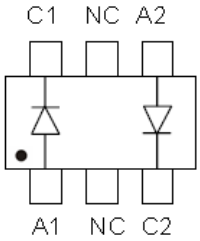
Features

HF

- Fast switching
- Low forward voltage drop
- PN junction guard ring for transient and ESD protection
- MSL Class 1 compatible

Mechanical Data

- Case: SOT-563
- Molding compound: UL flammability classification rating 94-0
- Terminals: Tin-plated; solderability per MIL-STD-202, Method 208



SOT-563

Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BAT54V	SOT-563	3000pcs / Tape & Reel	KAV

Maximum Ratings (@ T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Reverse Voltage	V_{RRM} V_{RWM} V_R	30	V
Maximum Average Forward Output Current	$I_{F(AV)}$	200	mA
Repetitive Peak Forward Current	I_{FRM}	300	mA
Forward Surge Current @ t_p <1s	I_{FSM}	600	mA

Thermal Characteristics

Parameter	Symbol	Value	Unit
Power Dissipation	P_D	150	mW
Thermal Resistance (Junction-to-Ambient)	$R_{\Theta JA}$	667	°C/W
Thermal Resistance (Junction-to-Case)	$R_{\Theta JC}$	480	°C/W
Operating junction Temperature	T_J	-55 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C

Electrical Characteristics (@ T_A = 25℃ unless otherwise specified)

Parameter	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)}$	I_R = 100μA	30	-	-	V
Forward Voltage *1	V_F	I_F = 0.1mA	-	-	0.24	V
		I_F = 1mA	-	-	0.32	V
		I_F = 10mA	-	-	0.40	V
		I_F = 30mA	-	-	0.50	V
		I_F = 100mA	-	-	1	V
Maximum Peak Reverse Current *2	I_R	V_R = 25V	-	-	2	μA
Capacitance Between Terminals	C_T	V_R = 1V, f = 1MHz	-	-	10	pF
Reverse Recovery Time	t_{rr}	I_F = I_R = 10mA I_{rr} = 0.1*I_R, R_L = 100Ω	-	-	5	ns

*1: pulse test, tp≤300μs

*2: pulse test, tp≤5ms

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

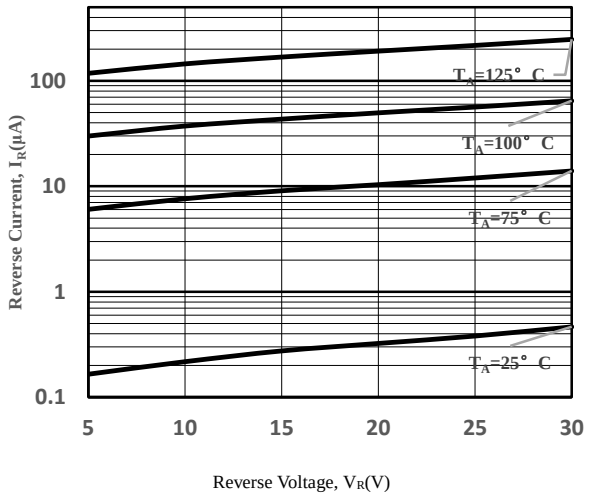


Fig 1 Typical Reverse Characteristic

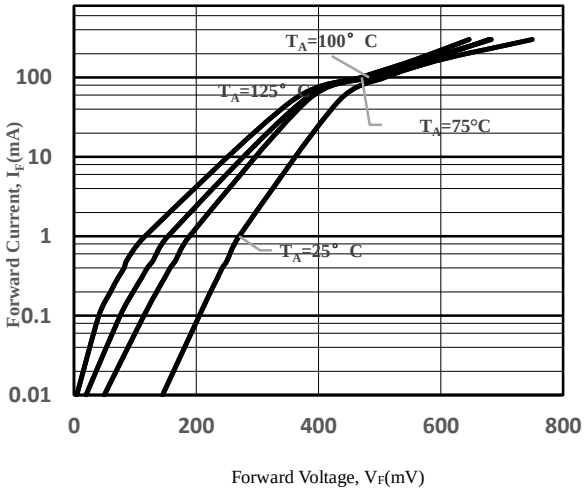


Fig 2 Typical Forward Characteristics

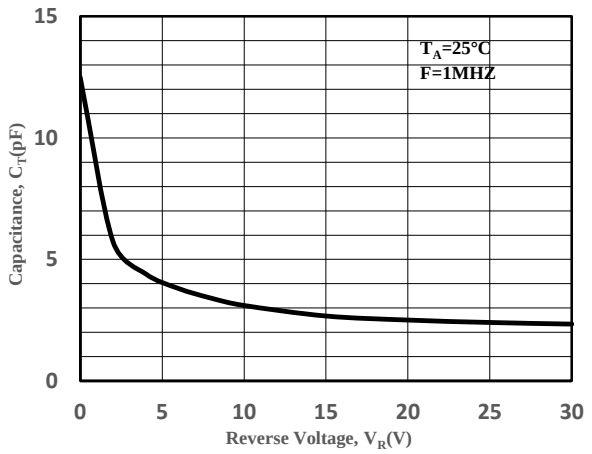


Fig 3 Capacitance Characteristics

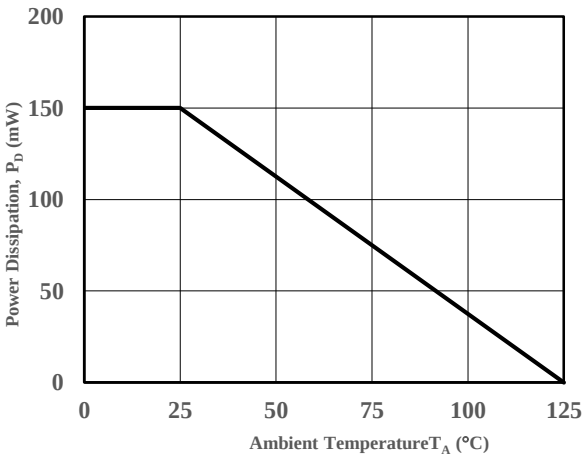
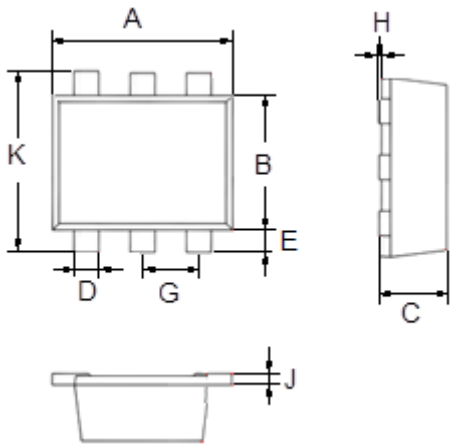


Fig 4 Derating Curve

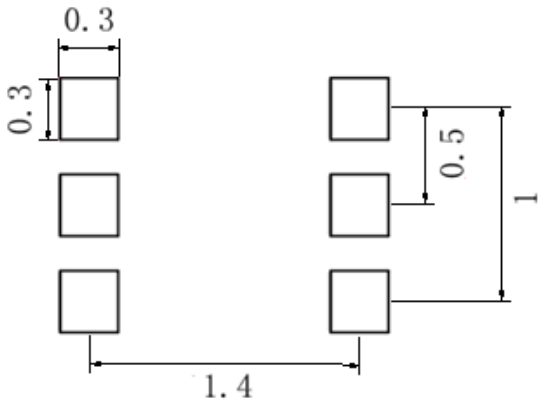
Package Outline Dimensions (Unit: mm)



SOT-563		
Dimension	**Min.**	**Max.**
A	1.500	1.700
B	1.100	1.300
C	0.525	0.600
D	0.170	0.270
E	0.100	0.300
G	0.450	0.550
H	0.000	0.050
J	0.090	0.160
K	1.500	1.700

Mounting Pad Layout (Unit: mm)

SOT-563



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