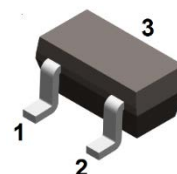
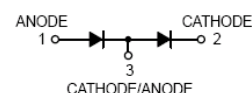


## Features

- Fast switching speed
- High conductance
- Connected in series

## Mechanical Data

- Case: SOT-523
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208


**SOT-523**

## Ordering Information

Part Number	Package	Shipping Quantity	Marking Code
BAV99T	SOT-523	3000 pcs / Tape & Reel	JE

## Maximum Ratings (@ T<sub>A</sub> = 25 °C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	85	V
Working Peak Reverse Voltage	V <sub>RWM</sub>	85	V
DC Blocking Voltage	V <sub>R</sub>	85	V
RMS Reverse Voltage	V <sub>R(RMS)</sub>	60	V
Forward Current	I <sub>FM</sub>	200	mA
Repetitive Peak Forward Current	I <sub>FRM</sub>	500	mA
Peak Forward Surge Current, 1μs Single Half-sine-wave	I <sub>FSM</sub>	4.5	A
Peak Forward Surge Current, 1ms Single Half-sine-wave	I <sub>FSM</sub>	1	A
Peak Forward Surge Current, 1s Single Half-sine-wave	I <sub>FSM</sub>	0.5	A

## Thermal Characteristics

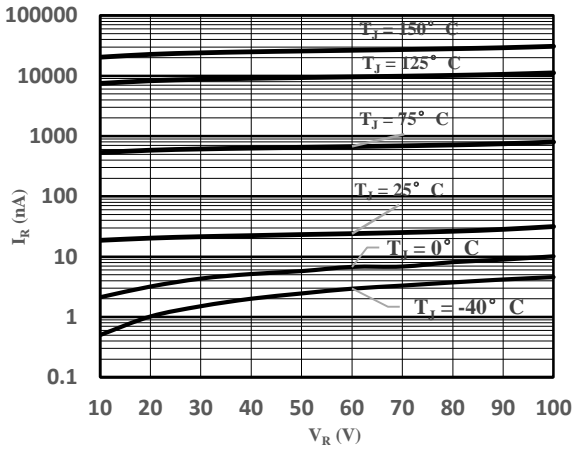
Parameter	Symbol	Value	Unit
Power Dissipation	P <sub>D</sub>	150	mW
Thermal Resistance Junction-to-Air <sup>*1</sup>	R <sub>θJA</sub>	148	°C /W
Thermal Resistance Junction-to-Case <sup>*1</sup>	R <sub>θJC</sub>	89	°C /W
Thermal Resistance Junction-to-Lead <sup>*1</sup>	R <sub>θJL</sub>	76	°C /W
Operating Junction Temperature Range	T <sub>J</sub>	-65 ~ +150	°C
Storage Temperature Range	T <sub>STG</sub>	-65 ~ +150	°C

Note 1: The data tested by surface mounted on a 37mm \* 31mm \* 1mm FR4-epoxy P.C.B with 25mm \*12 aluminum heatsink

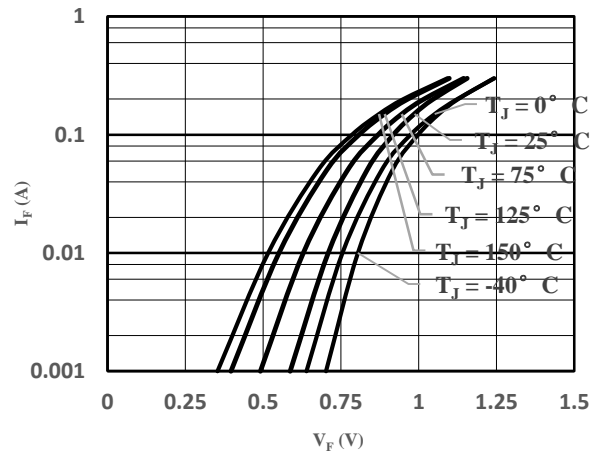
**Electrical Characteristics** (@  $T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified)

Parameter		Test Condition		Typ.	Max.	Unit
Reverse Breakdown Voltage	$V_{(BR)R}$	$I_R = 100\mu\text{A}$	85	-	-	V
Forward Voltage	$V_F$	$I_F = 1\text{mA}$	-	-	0.715	V
		$I_F = 10\text{mA}$	-	-	0.855	V
		$I_F = 50\text{mA}$	-	-	1.000	V
		$I_F = 150\text{mA}$	-	-	1.250	V
Maximum Peak Reverse Current	$I_R$	$V_R = 25\text{V}$	-	-	30	nA
		$V_R = 25\text{V}, T_J = 150^\circ\text{C}$	-	-	60	$\mu\text{A}$
		$V_R = 75\text{V}$	-	-	2	$\mu\text{A}$
		$V_R = 75\text{V}, T_J = 150^\circ\text{C}$	-	-	100	$\mu\text{A}$
Total Capacitance	$C_T$	$V_R = 0\text{V}, f = 1.0\text{MHz}$	-	-	1.5	pF
Reverse Recovery Time	$t_{rr}$	$I_F = I_R = 10\text{mA}$ $I_{rr} = 0.1 \times I_R, R_L = 100\Omega$	-	-	4	ns

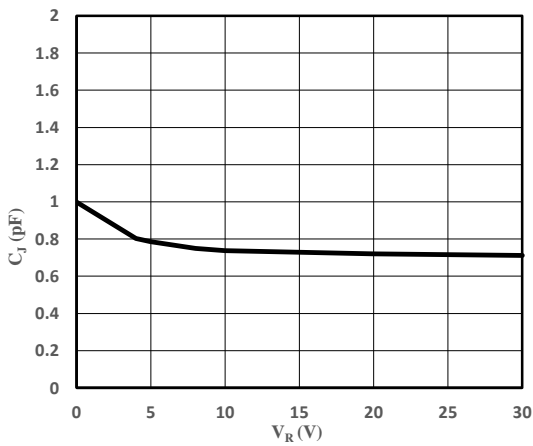
**Ratings and Characteristics Curves** (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)



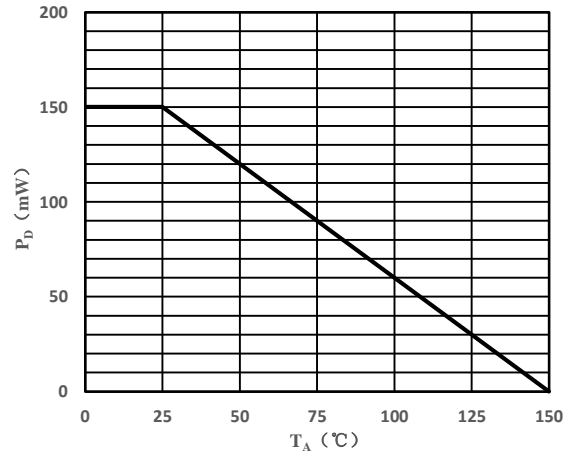
**Fig 1 Typical Reverse Characteristic**



**Fig 2 Typical Forward Characteristics**



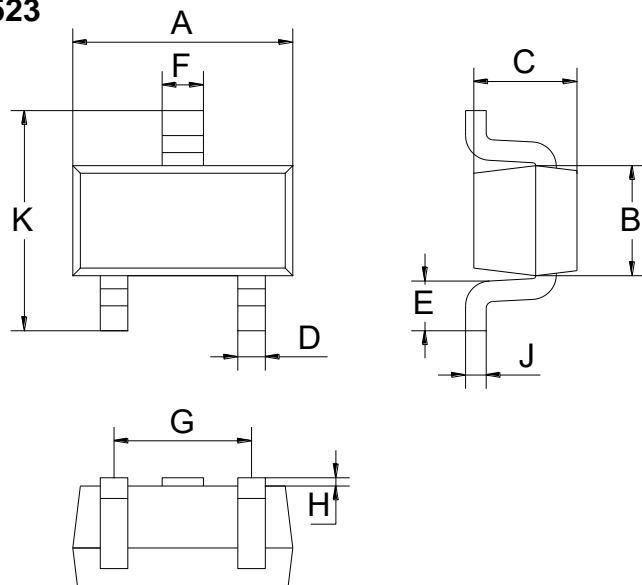
**Fig 3 Capacitance vs. Reverse Voltage**



**Fig 4 Power Derating Curve**

**Package Outline Dimensions** (unit: mm)

**SOT-523**



SOT-523		
Dim	Min	Max
A	1.50	1.70
B	0.75	0.85
C	0.60	0.80
D	0.15	0.30
E	0.30	0.40
F	0.25	0.40
G	0.90	1.10
H	0.02	0.10
J	0.08	0.18
K	1.45	1.75

**Mounting Pad Layout** (unit: mm)

**SOT-523**

