

# BAS19, BAS20, BAS21

**PRV : 120 - 250 Volts**  
**I<sub>O</sub> : 200 mA**

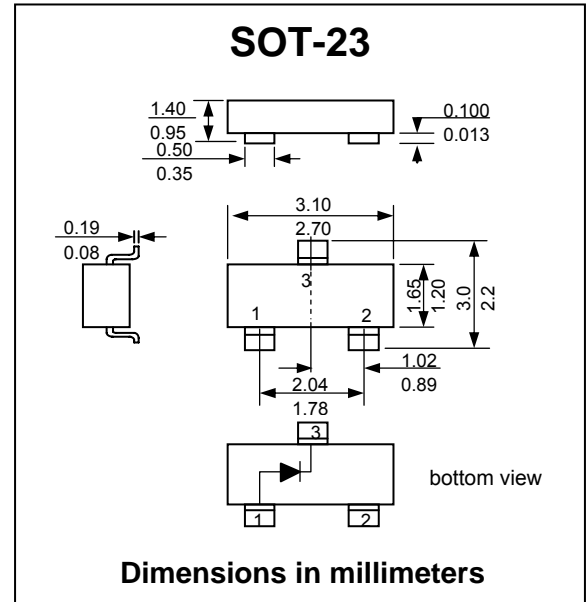
## FEATURES :

- \* Small plastic SMD package
- \* Switching speed: max. 50 ns
- \* General application
- \* Continuous reverse voltage: max. 100V, 150V, 200V
- \* Repetitive peak reverse voltage: max. 120V, 200V, 250V
- \* Pb / RoHS Free

## MECHANICAL DATA :

- \* Case : SOT-23 plastic Case
- \* BAS19 Marking Code: HA
- \* BAS20 Marking Code: HB
- \* BAS21 Marking Code: HC

## HIGH VOLTAGE SWITCHING DIODES



## MAXIMUM RATINGS AND THERMAL CHARACTERISTICS (Ta = 25 °C unless otherwise specified)

Parameter	Symbol	BAS19	BAS20	BAS21	Unit
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	120	200	250	V
Maximum Continuous Reverse Voltage	V <sub>R</sub>	100	150	200	V
Maximum Continuous Forward Current (Note 1)	I <sub>F</sub>	200			mA
Maximum Non-repetitive Peak Forward Current (square wave; T <sub>j</sub> = 25 °C prior to surge)	t = 1 μs	9			A
	t = 100 μs	3			
	t = 10 ms	1.7			
Total Power Dissipation (Note 1)	P <sub>tot</sub>	250			mW
Thermal Resistance Junction to Tie-point	R <sub>th j-tp</sub>	330			K/W
Thermal Resistance Junction to Ambient	R <sub>th j-a</sub>	500			K/W
Junction Temperature Range	T <sub>J</sub>	150			°C
Storage Temperature Range	T <sub>STG</sub>	-65 to +150			°C

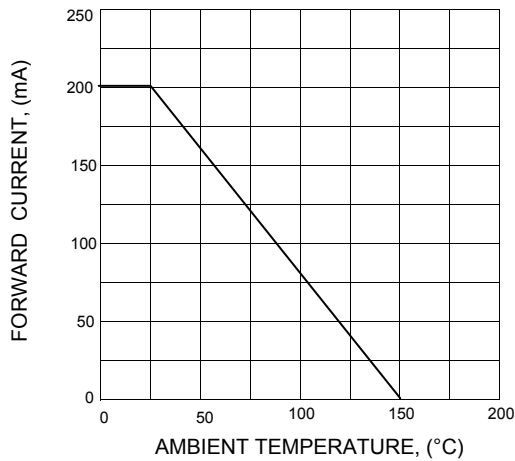
## ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C unless otherwise specified.)

Parameter	Test Condition	Symbol	BAS19	BAS20	BAS21	Unit
Forward Voltage	I <sub>F</sub> = 100 mA	V <sub>F</sub>	1.00			V
	I <sub>F</sub> = 200 mA		1.25			
Reverse Current	V <sub>R</sub> = V <sub>Rmax</sub>	I <sub>R</sub>	100			nA
	V <sub>R</sub> = V <sub>Rmax</sub> , T <sub>J</sub> = 150 °C		100			μA
Capacitance	V <sub>R</sub> = 0 V, f = 1 MHz	C <sub>D</sub>	5			pF
Reverse Recovery Time	I <sub>F</sub> = 30 mA to I <sub>R</sub> = 30mA, R <sub>L</sub> = 100 Ω, measure at I <sub>R</sub> = 3 mA	T <sub>rr</sub>	50			ns

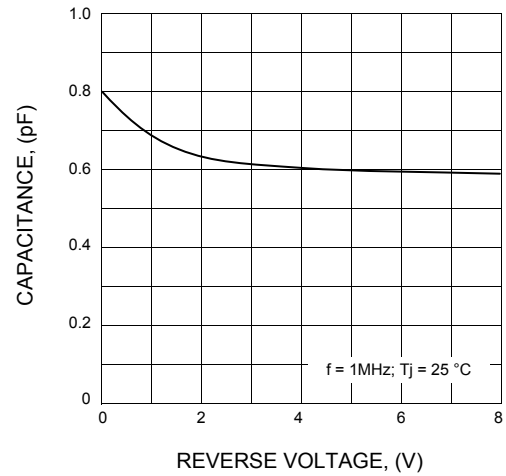
**Note :** (1) Device mounted on an FR4 printed circuit board.

**RATINGS AND CHARACTERISTIC CURVES ( BAS19, BAS20, BAS21 )**

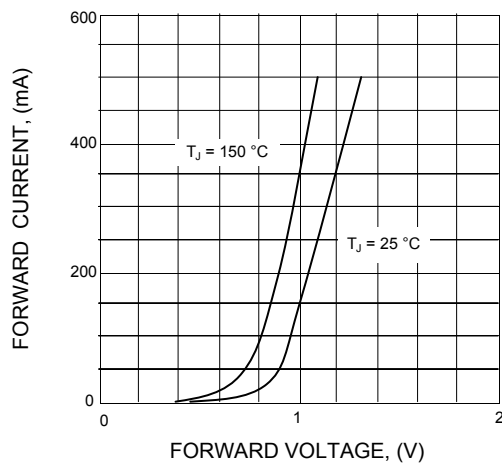
**FIG.1 - MAXIMUM CONTINUOUS FORWARD CURRENT VS. AMBIENT TEMPERATURE**



**FIG.2 - DIODE CAPACITANCE VS. REVERSE VOLTAGE; TYPICAL VALUES**



**FIG.3 - FORWARD CURRENT VS. FORWARD VOLTAGE ; TYPICAL VALUES**



**FIG.4 - REVERSE CURRENT VS. JUNCTION TEMPERATURE; TYPICAL VALUES**

