

# BAS216WS

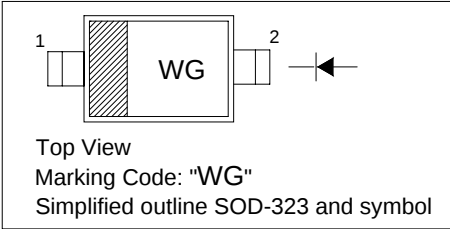
## High-speed switching diode

### Features

- Small ceramic SMD package
- High switching speed: max. 4ns
- Continuous reverse voltage: max. 75V
- Repetitive peak reverse voltage: max. 85V
- Repetitive peak forward current: max. 500mA

### PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |

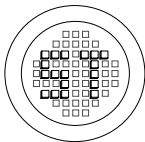


### Absolute Maximum Ratings ( $T_j = 25^{\circ}\text{C}$ )

| Parameter                           | Test             | Symbol    | Value        | Unit |
|-------------------------------------|------------------|-----------|--------------|------|
| Continuous Reverse Voltage          | -                | $V_R$     | 75           | V    |
| Repetitive Peak Reverse Voltage     | -                | $V_{RRM}$ | 85           | V    |
| Continuous Forward Current          | -                | $I_F$     | 250          | mA   |
| Repetitive Peak Forward Current     | -                | $I_{FRM}$ | 500          | mA   |
| Non-Repetitive Peak Forward Current | $t=1\mu\text{s}$ | $I_{FSM}$ | 4            | A    |
|                                     | $t=1\text{ms}$   |           | 1            | A    |
|                                     | $t=1\text{s}$    |           | 0.5          | A    |
| Power Dissipation                   | -                | $P_{tot}$ | 400          | mW   |
| Junction Temperature                | -                | $T_J$     | 150          | ?    |
| Storage Temperature Range           | -                | $T_s$     | -65 ... +150 | ?    |

### Maximum Thermal Resistance ( $T_j = 25^{\circ}\text{C}$ )

| Parameter                                     | Symbol         | Value | Unit |
|-----------------------------------------------|----------------|-------|------|
| Thermal Resistance from Junction to tie-point | $R_{th\ j-tp}$ | 200   | K/W  |
| Thermal Resistance from Junction to Ambient   | $R_{th\ j-a}$  | 315   | K/W  |



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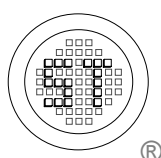
РАДИОТЕХ

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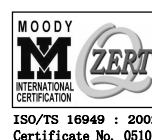
Characteristics at  $T_J = 25^\circ\text{C}$

| Parameter                | Test Conditions                                                                     | Symbol           | Min | Typ | Max  | Unit          |
|--------------------------|-------------------------------------------------------------------------------------|------------------|-----|-----|------|---------------|
| Forward Voltage          | $I_F = 1\text{mA}$                                                                  | $V_F$            | -   | -   | 715  | mV            |
|                          | $I_F = 10\text{mA}$                                                                 | $V_F$            | -   | -   | 855  | mV            |
|                          | $I_F = 50\text{mA}$                                                                 | $V_F$            | -   | -   | 1    | V             |
|                          | $I_F = 150\text{mA}$                                                                | $V_F$            | -   | -   | 1.25 | V             |
| Reverse Current          | $V_R = 25\text{V}$                                                                  | $I_R$            | -   | -   | 30   | nA            |
|                          | $V_R = 25\text{V}, T_J = 150^\circ\text{C}$                                         | $I_R$            | -   | -   | 30   | $\mu\text{A}$ |
|                          | $V_R = 75\text{V}$                                                                  | $I_R$            | -   | -   | 1    | $\mu\text{A}$ |
|                          | $V_R = 75\text{V}, T_J = 150^\circ\text{C}$                                         | $I_R$            | -   | -   | 50   | $\mu\text{A}$ |
| Diode Capacitance        | $V_R = 0\text{V}, f = 1\text{MHz}$                                                  | $C_{\text{tot}}$ | -   | -   | 1.5  | pF            |
| Forward Recovery Voltage | $I_F = 10\text{mA}, t_r = 20\text{ns}$                                              | $V_{fr}$         | -   | -   | 1.75 | V             |
| Reverse Recovery Time    | $I_F = 10\text{mA}$ to $I_R = 10\text{mA}$ ,<br>$I_R = 1\text{mA}, R_L = 100\Omega$ | $t_{rr}$         | -   | -   | 4    | ns            |

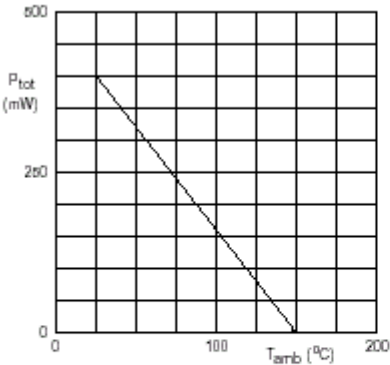


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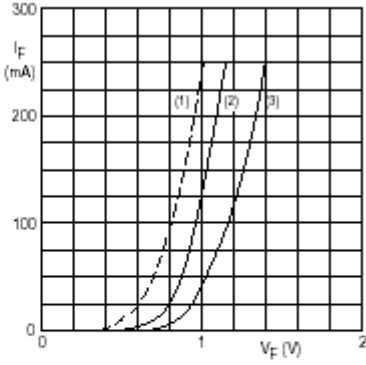


Dated : 01/10/2004



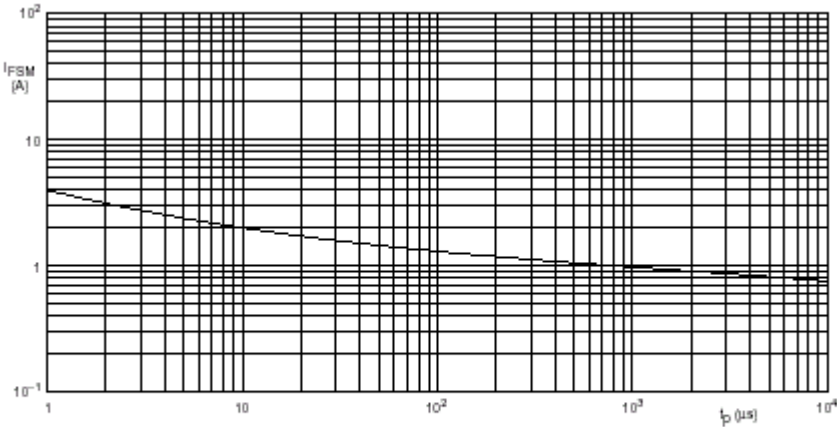
Device mounted on an FR4 printed-circuit board.

Fig.2 Maximum permissible total power dissipation as a function of ambient temperature.



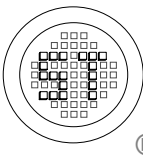
- (1) T<sub>j</sub> = 150 °C; typical values.
- (2) T<sub>j</sub> = 25 °C; typical values.
- (3) T<sub>j</sub> = 25 °C; maximum values.

Fig.3 Forward current as a function of forward voltage.



Based on square wave currents.  
T<sub>j</sub> = 25 °C prior to surge.

Fig.4 Maximum permissible non-repetitive peak forward current as a function of pulse duration.



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Certificate No. 05103

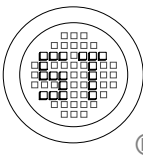
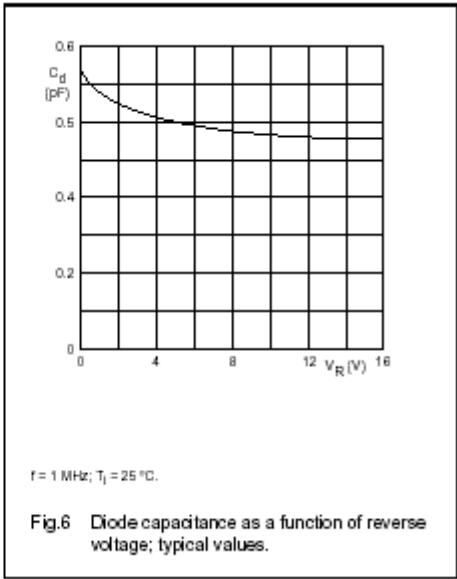
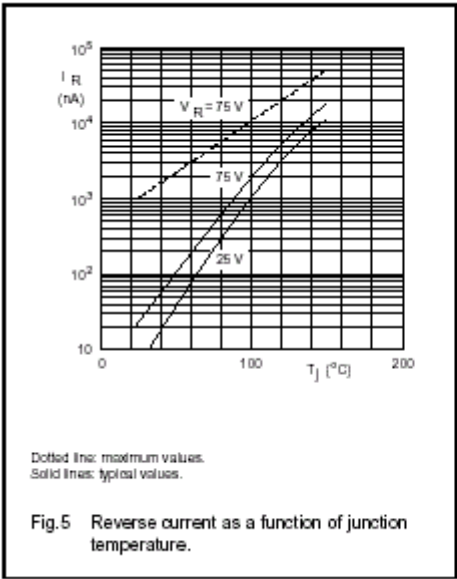


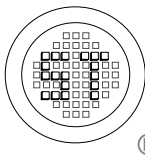
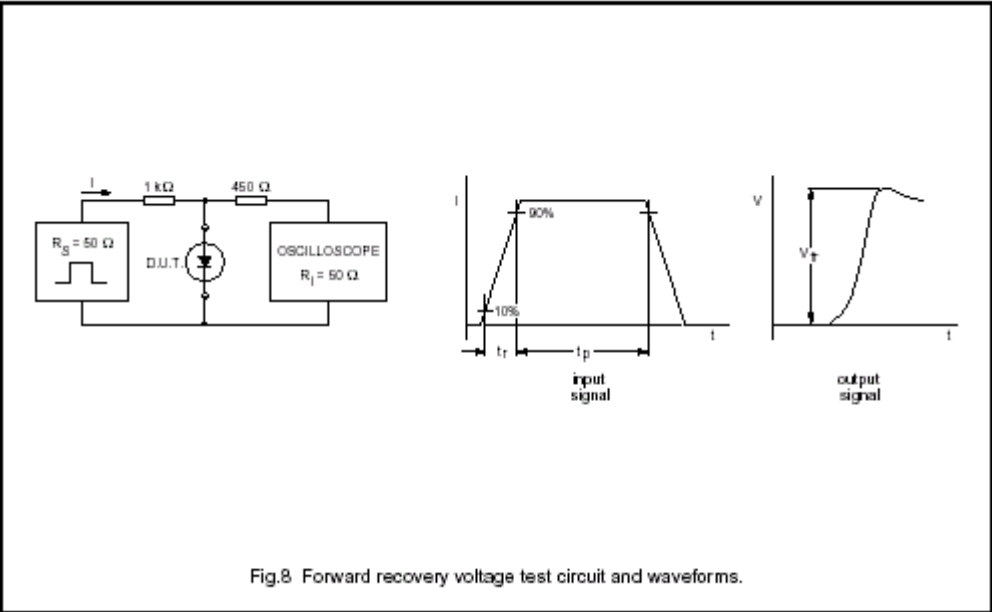
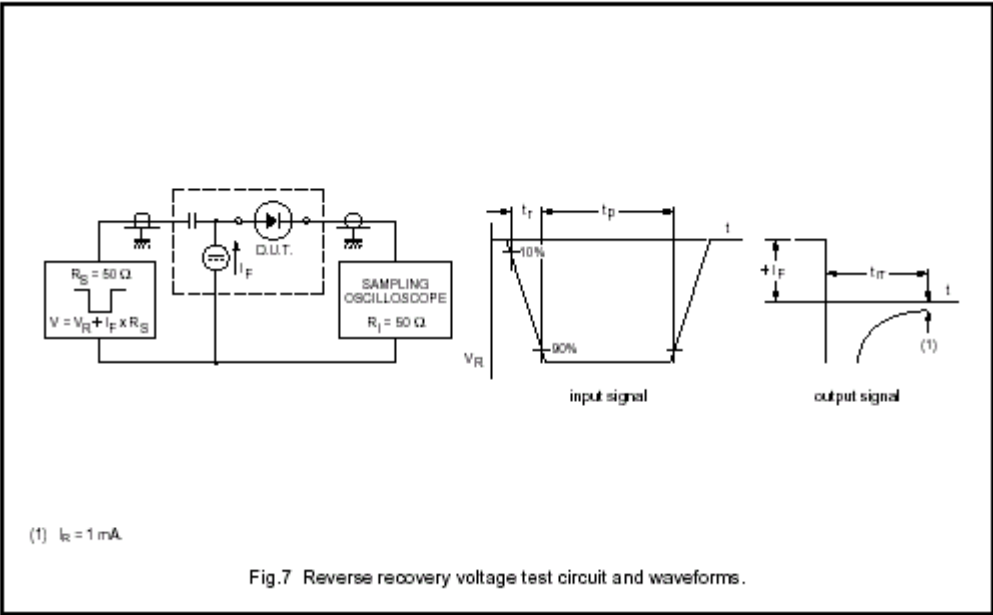
ISO 14001  
Certificate No. 7116



ISO 9001 : 2000  
Certificate No. 020-1000-0000-0000

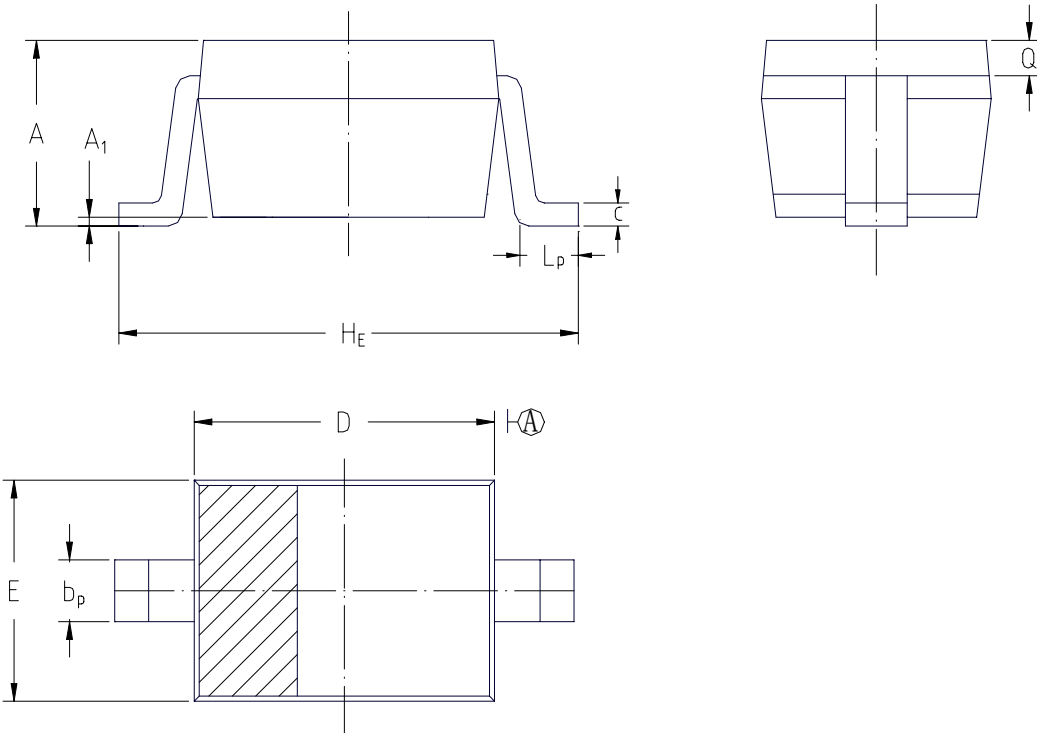
Dated : 01/10/2004



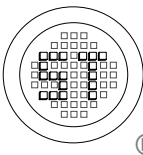


PACKAGE OUTLINE

SOD-323



| UNIT | A            | A <sub>1</sub> | b <sub>p</sub> | c            | D            | E            | H <sub>E</sub> | L <sub>p</sub> | Q            |
|------|--------------|----------------|----------------|--------------|--------------|--------------|----------------|----------------|--------------|
| mm   | 1.10<br>0.80 | 0.1<br>0       | 0.40<br>0.25   | 0.15<br>0.00 | 1.80<br>1.60 | 1.35<br>1.15 | 2.80<br>2.30   | 0.50<br>0.10   | 0.15<br>REF. |



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