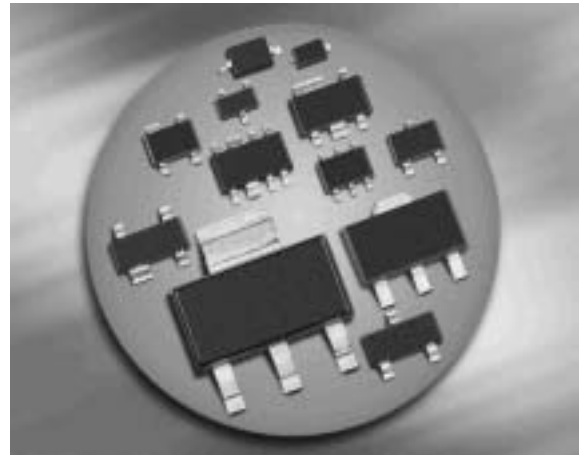
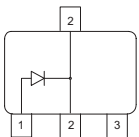


## Silicon Switching Diodes

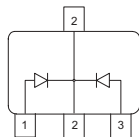
- Switching applications
- High breakdown voltage
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



### BAW78D



### BAW79D



| Type   | Package | Configuration  | Marking |
|--------|---------|----------------|---------|
| BAW78D | SOT89   | single         | GD      |
| BAW79D | SOT89   | common cathode | GH      |

**Maximum Ratings** at  $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter                                  | Symbol    | Value       | Unit             |
|--------------------------------------------|-----------|-------------|------------------|
| Diode reverse voltage                      | $V_R$     | 400         | V                |
| Peak reverse voltage                       | $V_{RM}$  | 400         |                  |
| Forward current                            | $I_F$     | 1           | A                |
| Peak forward current                       | $I_{FM}$  | 1           |                  |
| Peak forward current                       | $I_{FM}$  | 1           |                  |
| Surge forward current, $t = 1 \mu\text{s}$ | $I_{FS}$  | 10          |                  |
| Non-repetitive peak surge forward current  | $I_{FSM}$ | -           |                  |
| Total power dissipation                    | $P_{tot}$ |             | W                |
| BAW78D, $T_S \leq 125^\circ\text{C}$       |           | 1           |                  |
| BAW79D, $T_S \leq 115^\circ\text{C}$       |           | 1           |                  |
| Junction temperature                       | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                        | $T_{stg}$ | -65 ... 150 |                  |

<sup>1)</sup>Pb-containing package may be available upon special request

### Thermal Resistance

| Parameter                                | Symbol     | Value     | Unit |
|------------------------------------------|------------|-----------|------|
| Junction - soldering point <sup>1)</sup> | $R_{thJS}$ |           | K/W  |
| BAW78D                                   |            | $\leq 25$ |      |
| BAW79D                                   |            | $\leq 35$ |      |

### Electrical Characteristics at $T_A = 25^\circ\text{C}$ , unless otherwise specified

| Parameter | Symbol | Values |      |      | Unit |
|-----------|--------|--------|------|------|------|
|           |        | min.   | typ. | max. |      |

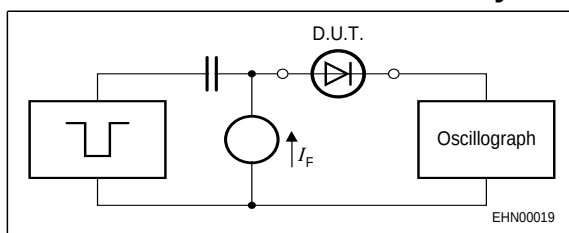
### DC Characteristics

|                                                                                            |            |     |   |          |               |
|--------------------------------------------------------------------------------------------|------------|-----|---|----------|---------------|
| Breakdown voltage<br>$I_{(BR)} = 100 \mu\text{A}$                                          | $V_{(BR)}$ | 400 | - | -        | V             |
| Reverse current<br>$V_R = 400 \text{ V}$<br>$V_R = 400 \text{ V}, T_A = 150^\circ\text{C}$ | $I_R$      | -   | - | 1<br>50  | $\mu\text{A}$ |
| Forward voltage<br>$I_F = 1 \text{ A}$<br>$I_F = 2 \text{ A}$                              | $V_F$      | -   | - | 1.6<br>2 | V             |

### AC Characteristics

|                                                                                                                          |          |   |        |   |               |
|--------------------------------------------------------------------------------------------------------------------------|----------|---|--------|---|---------------|
| Diode capacitance<br>$V_R = 0 \text{ V}, f = 1 \text{ MHz}$                                                              | $C_T$    | - | 10     | - | pF            |
| Reverse recovery time<br>$I_F = 200\text{mA}, I_R = 200\text{mA}$ , measured at $I_R = 20\text{mA}$<br>$R_L = 100\Omega$ | $t_{rr}$ | - | 1<br>, | - | $\mu\text{s}$ |

### Test circuit for reverse recovery time



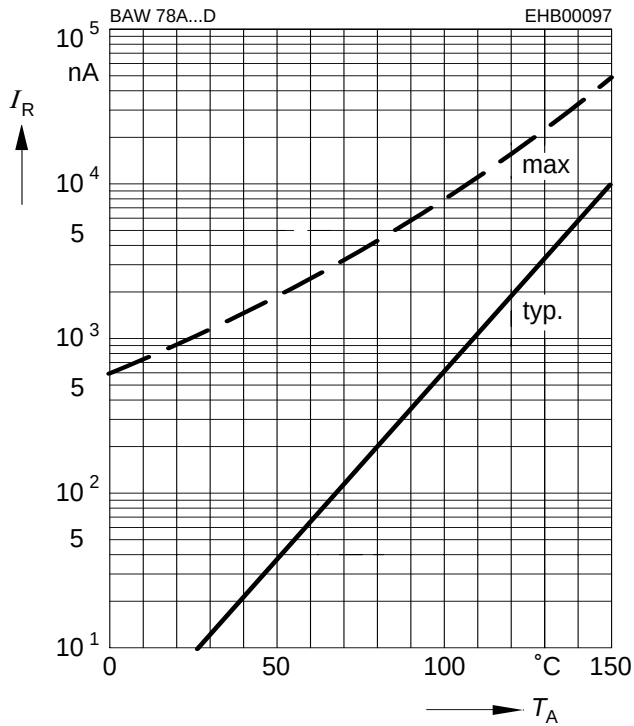
Puls generator:  $t_p = 10\mu\text{s}$ ,  $D = 0.05$ ,  
 $t_r = 0.6\text{ns}$ ,  $R_i = 50\Omega$

Oscilloscop:  $R = 50\Omega$ ,  $t_r = 0.35\text{ns}$   
 $C \leq 1\text{pF}$

<sup>1)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

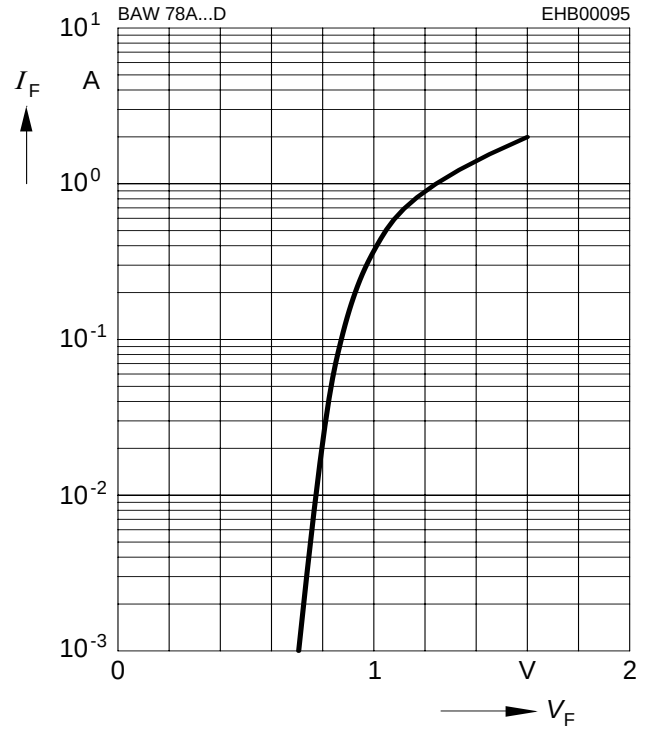
Reverse current  $I_R = f(T_A)$

$V_R = 400V$

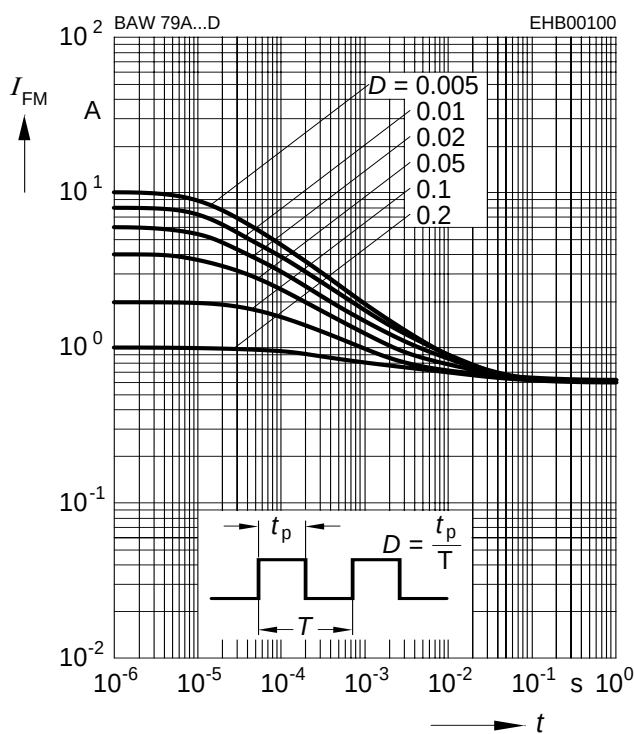


Forward current  $I_F = f(V_F)$

$T_A = 25^\circ C$

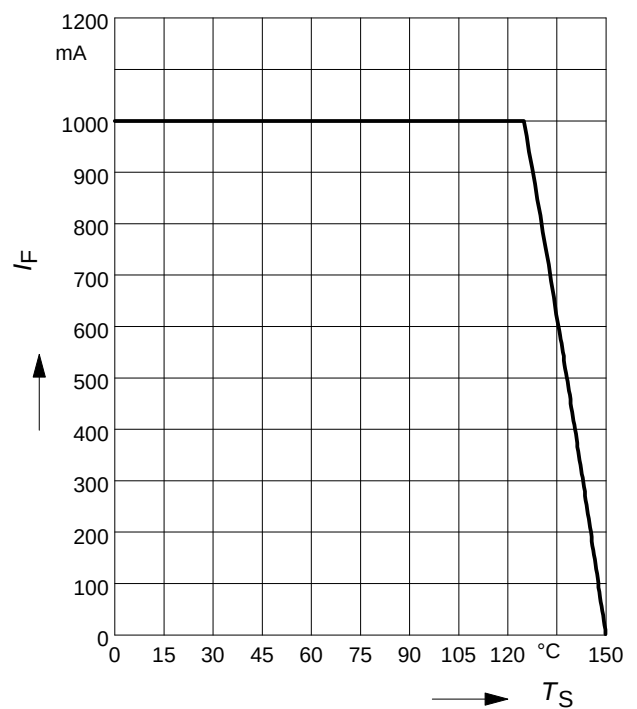


Peak forward current  $I_{FM} = f(t_p)$



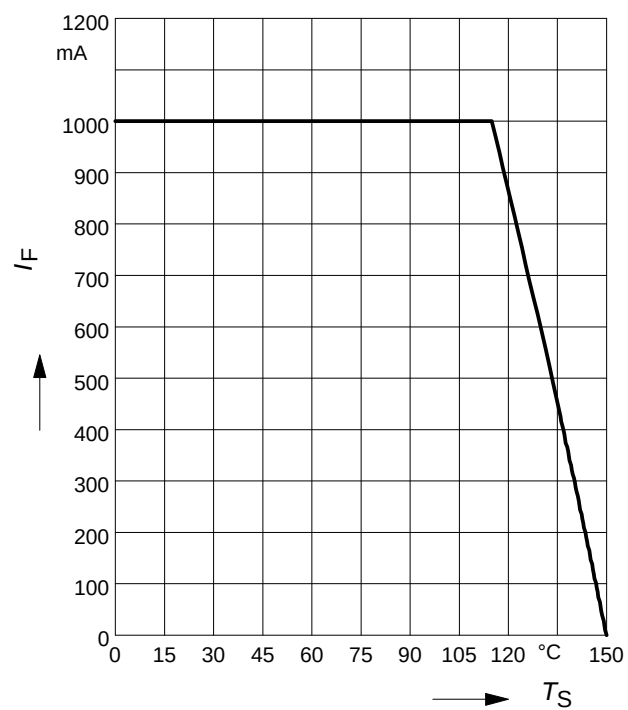
Forward current  $I_F = f(T_S)$

BAW78D

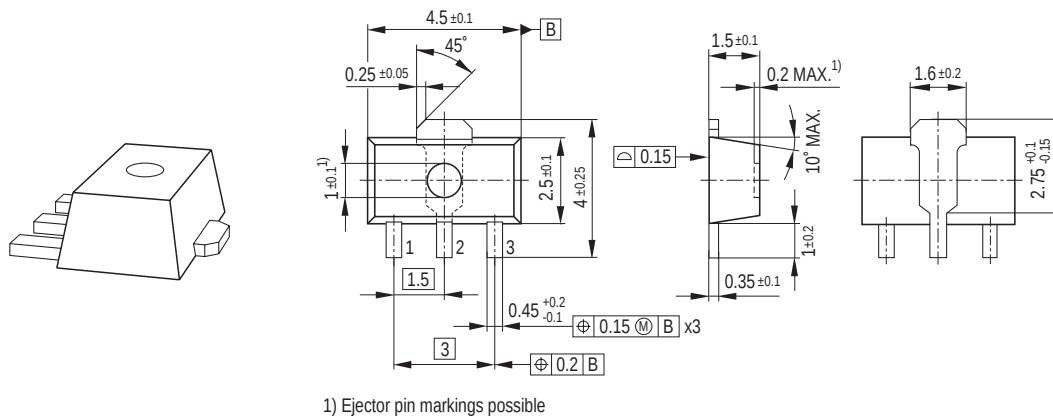


Forward current  $I_F = f(T_S)$

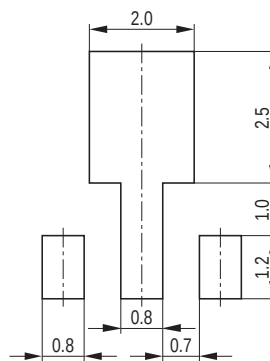
BAW79D



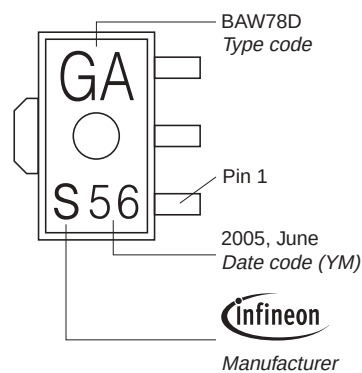
## Package Outline



## Foot Print

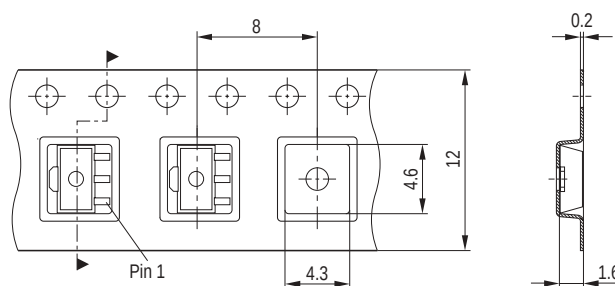


## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 1.000 Pieces/Reel  
Reel ø330 mm = 4.000 Pieces/Reel



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

© Infineon Technologies AG 2007.

All Rights Reserved.

### **Attention please!**

The information given in this dokument shall in no event be regarded as a guarantee of conditions or characteristics ("Beschaffenheitsgarantie"). With respect to any examples or hints given herein, any typical values stated herein and/or any information regarding the application of the device, Infineon Technologies hereby disclaims any and all warranties and liabilities of any kind, including without limitation warranties of non-infringement of intellectual property rights of any third party.

### **Information**

For further information on technology, delivery terms and conditions and prices please contact your nearest Infineon Technologies Office ([www.infineon.com](http://www.infineon.com)).

### **Warnings**

Due to technical requirements components may contain dangerous substances. For information on the types in question please contact your nearest Infineon Technologies Office.

Infineon Technologies Components may only be used in life-support devices or systems with the express written approval of Infineon Technologies, if a failure of such components can reasonably be expected to cause the failure of that life-support device or system, or to affect the safety or effectiveness of that device or system.

Life support devices or systems are intended to be implanted in the human body, or to support and/or maintain and sustain and/or protect human life. If they fail, it is reasonable to assume that the health of the user or other persons may be endangered.