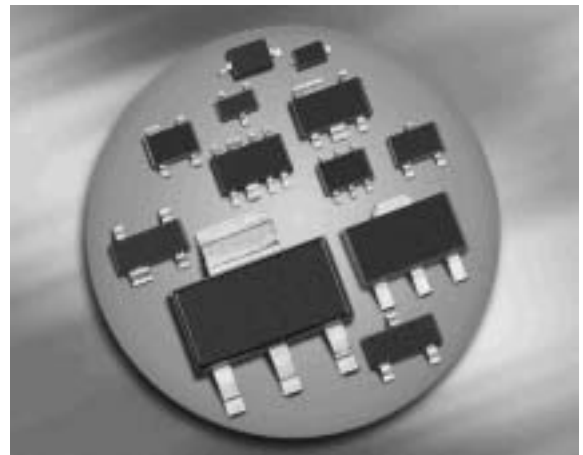
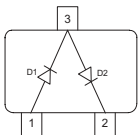


## Silicon Low Leakage Diode

- Low-leakage applications
- Medium speed switching times
- Series pair configuration
- Pb-free (RoHS compliant) package<sup>1)</sup>
- Qualified according AEC Q101



## BAV199



| Type   | Package | Configuration | Marking |
|--------|---------|---------------|---------|
| BAV199 | SOT23   | series        | JYs     |

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

| Parameter                                                      | Symbol    | Value       | Unit             |
|----------------------------------------------------------------|-----------|-------------|------------------|
| Diode reverse voltage                                          | $V_R$     | 80          | V                |
| Peak reverse voltage                                           | $V_{RM}$  | 85          |                  |
| Forward current                                                | $I_F$     | 200         | mA               |
| Non-repetitive peak surge forward current                      | $I_{FSM}$ |             | A                |
| $t = 1 \mu\text{s}$                                            |           | 4.5         |                  |
| $t = 1 \text{ s}$                                              |           | 0.5         |                  |
| Total power dissipation<br>BAV199, $T_S \leq 31^\circ\text{C}$ | $P_{tot}$ | 330         | mW               |
| Junction temperature                                           | $T_j$     | 150         | $^\circ\text{C}$ |
| Storage temperature                                            | $T_{stg}$ | -65 ... 150 |                  |

## Thermal Resistance

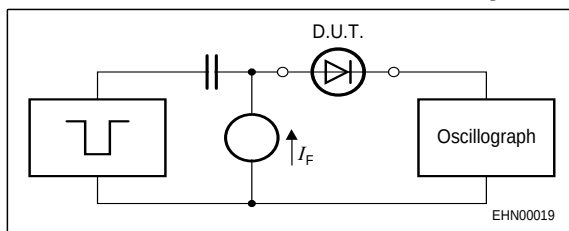
| Parameter                                          | Symbol     | Value      | Unit |
|----------------------------------------------------|------------|------------|------|
| Junction - soldering point <sup>2)</sup><br>BAV199 | $R_{thJS}$ | $\leq 360$ | K/W  |

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

<sup>2)</sup>For calculation of  $R_{thJA}$  please refer to Application Note Thermal Resistance

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

| Parameter                                                                                                 | Symbol     | Values           |                  |                             | Unit    |
|-----------------------------------------------------------------------------------------------------------|------------|------------------|------------------|-----------------------------|---------|
|                                                                                                           |            | min.             | typ.             | max.                        |         |
| DC Characteristics                                                                                        |            |                  |                  |                             |         |
| Breakdown voltage<br><br>$I_{(BR)} = 100 \mu A$                                                           | $V_{(BR)}$ | 85               | -                | -                           | V       |
| Reverse current<br><br>$V_R = 75 V$<br>$V_R = 75 V, T_A = 150\text{ }^{\circ}C$                           | $I_R$      | -<br>-<br>-      | -<br>-<br>-      | 5<br>80                     | nA      |
| Forward voltage<br><br>$I_F = 1 mA$<br>$I_F = 10 mA$<br>$I_F = 50 mA$<br>$I_F = 150 mA$                   | $V_F$      | -<br>-<br>-<br>- | -<br>-<br>-<br>- | 900<br>1000<br>1100<br>1250 | mV      |
| AC Characteristics                                                                                        |            |                  |                  |                             |         |
| Diode capacitance<br><br>$V_R = 0 V, f = 1 MHz$                                                           | $C_T$      | -                | 2                | -                           | pF      |
| Reverse recovery time<br><br>$I_F = 10 mA, I_R = 10 mA$ , measured at $I_R = 1mA$ ,<br>$R_L = 100 \Omega$ | $t_{rr}$   | -                | 0.6              | 1.5                         | $\mu s$ |

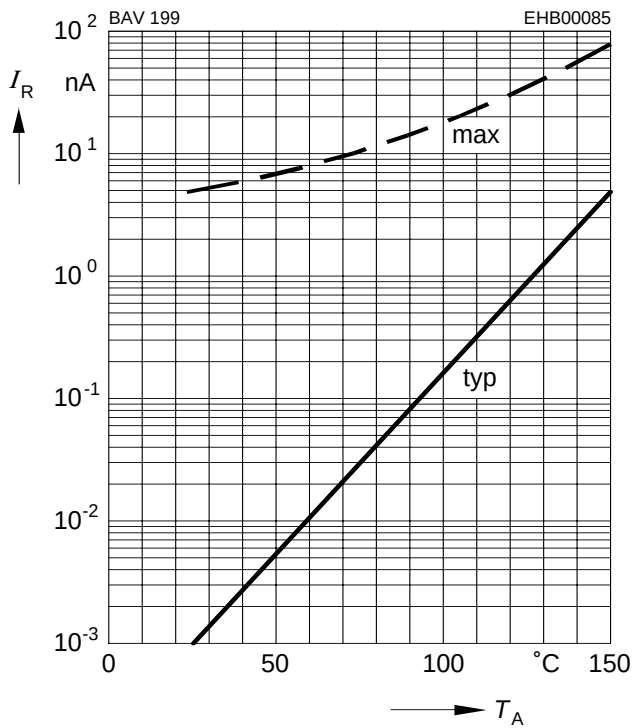
**Test circuit for reverse recovery time**


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

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

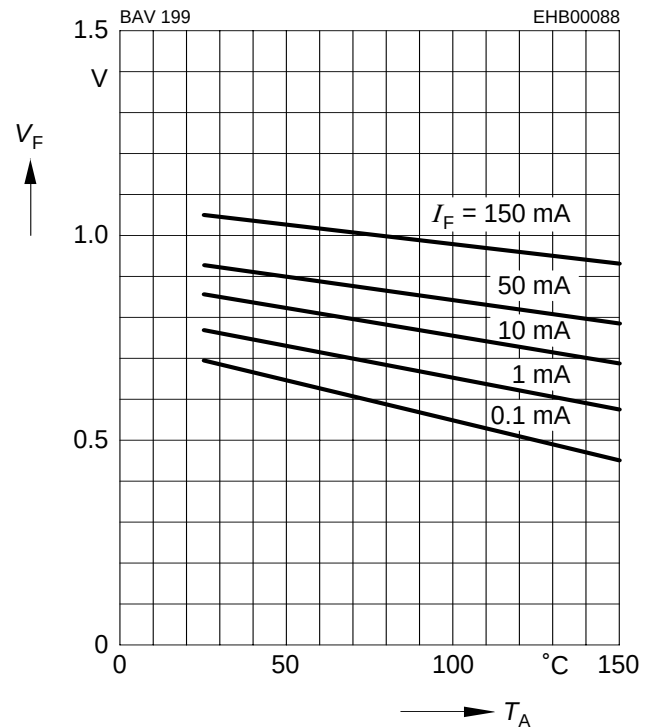
Reverse current  $I_R = f(T_A)$

$V_R = 70V$



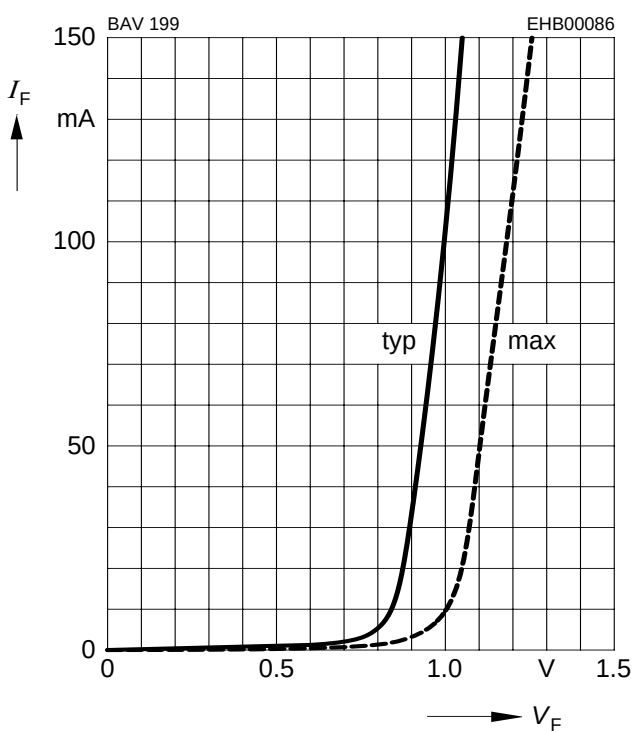
Forward Voltage  $V_F = f(T_A)$

$I_F = \text{Parameter}$



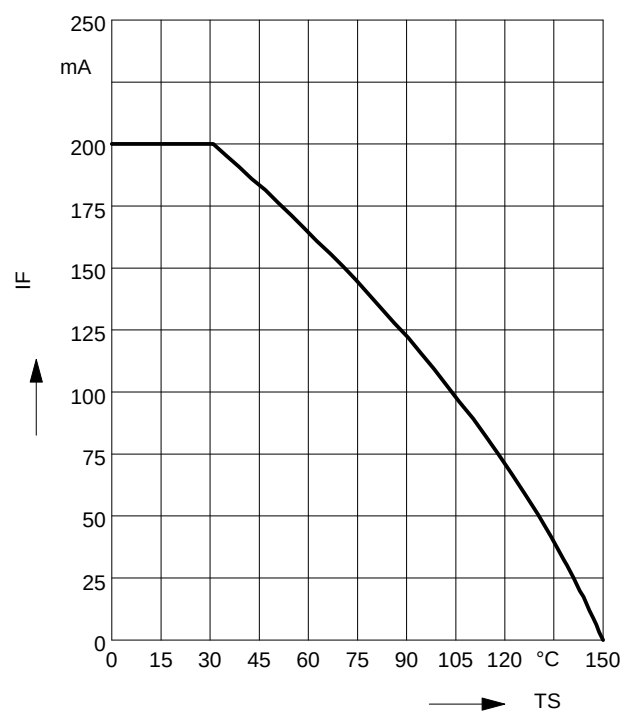
Forward current  $I_F = f(V_F)$

$T_A = 25^\circ\text{C}$

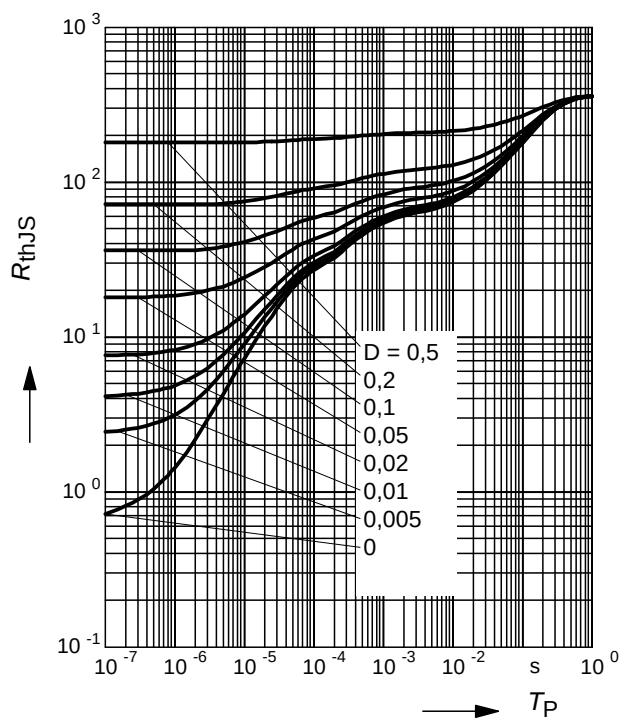


Forward current  $I_F = f(T_S)$

BAV199

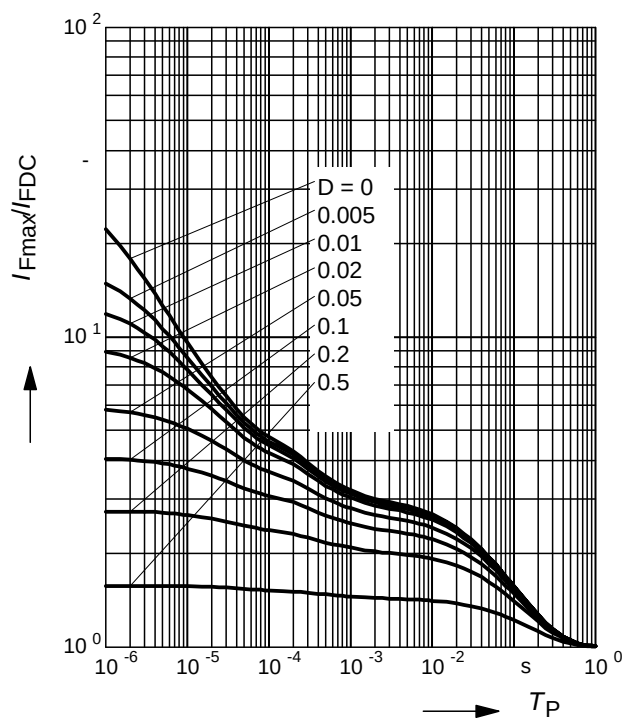


# Permissible Puls Load $R_{thJS} = f(t_p)$

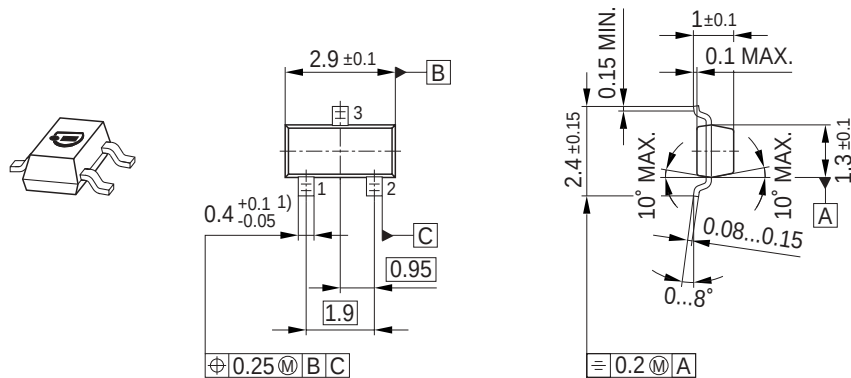


# Permissible Pulse Load

$$I_{Fmax}/I_{FDC} = f(t_p)$$

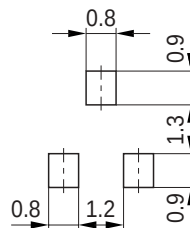


## Package Outline

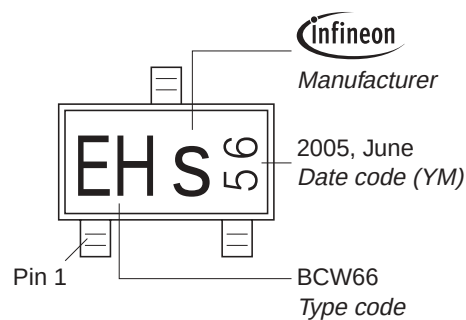


1) Lead width can be 0.6 max. in dambar area

## Foot Print

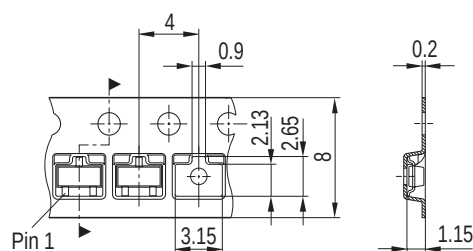


## Marking Layout (Example)



## Standard Packing

Reel ø180 mm = 3.000 Pieces/Reel  
Reel ø330 mm = 10.000 Pieces/Reel



Edition 2006-02-01

Published by

Infineon Technologies AG

81726 München, Germany

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