

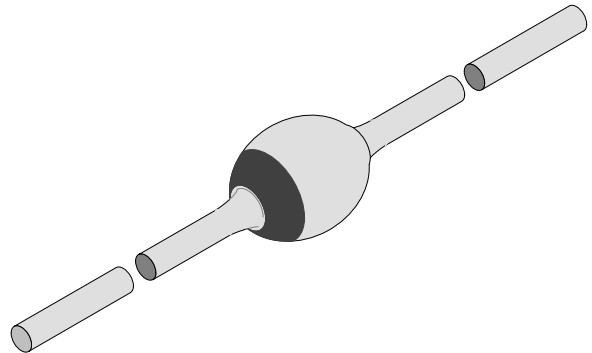
## Fast Silicon Mesa Rectifiers

### Features

- Glass passivated junction
- Hermetically sealed package
- Low reverse current
- Soft recovery characteristics

### Applications

Fast rectifiers and switches



94 9539

### Absolute Maximum Ratings

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

| Parameter                             | Test Conditions                       | Type   | Symbol         | Value      | Unit             |
|---------------------------------------|---------------------------------------|--------|----------------|------------|------------------|
| Reverse voltage, peak reverse voltage |                                       | BYT52A | $V_R, V_{RRM}$ | 50         | V                |
|                                       |                                       | BYT52B | $V_R, V_{RRM}$ | 100        | V                |
|                                       |                                       | BYT52D | $V_R, V_{RRM}$ | 200        | V                |
|                                       |                                       | BYT52G | $V_R, V_{RRM}$ | 400        | V                |
|                                       |                                       | BYT52J | $V_R, V_{RRM}$ | 600        | V                |
|                                       |                                       | BYT52K | $V_R, V_{RRM}$ | 800        | V                |
|                                       |                                       | BYT52M | $V_R, V_{RRM}$ | 1000       | V                |
| Peak forward surge current            | $t_p=10\text{ms}$                     |        | $I_{FSM}$      | 50         | A                |
| Average forward current               | Fig. 1                                |        | $I_{FAV}$      | 0.85       | A                |
|                                       | $l=10\text{mm}, T_L=25^\circ\text{C}$ |        | $I_{FAV}$      | 1.4        | A                |
| Junction temperature                  |                                       |        | $T_j$          | 175        | $^\circ\text{C}$ |
| Storage temperature range             |                                       |        | $T_{stg}$      | -65...+175 | $^\circ\text{C}$ |

### Maximum Thermal Resistance

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

| Parameter        | Test Conditions                      | Symbol     | Value | Unit |
|------------------|--------------------------------------|------------|-------|------|
| Junction ambient | $l=10\text{mm}, T_L=\text{constant}$ | $R_{thJA}$ | 45    | K/W  |
|                  | on PC board with spacing 25 mm       | $R_{thJA}$ | 100   | K/W  |

## Characteristics

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

| Parameter             | Test Conditions                                    | Type | Symbol   | Min | Typ | Max | Unit          |
|-----------------------|--|------|----------|-----|-----|-----|---------------|
| Forward voltage       | $I_F=1\text{A}$                                    |      | $V_F$    |     |     | 1.3 | V             |
| Reverse current       | $V_R=V_{RRM}$                                      |      | $I_R$    |     |     | 5   | $\mu\text{A}$ |
|                       | $V_R=V_{RRM}, T_j=150^\circ\text{C}$               |      | $I_R$    |     |     | 150 | $\mu\text{A}$ |
| Reverse recovery time | $I_F=0.5\text{A}, I_R=1\text{A}, i_R=0.25\text{A}$ |      | $t_{rr}$ |     |     | 200 | ns            |

## Typical Characteristics ( $T_j = 25^\circ\text{C}$ unless otherwise specified)

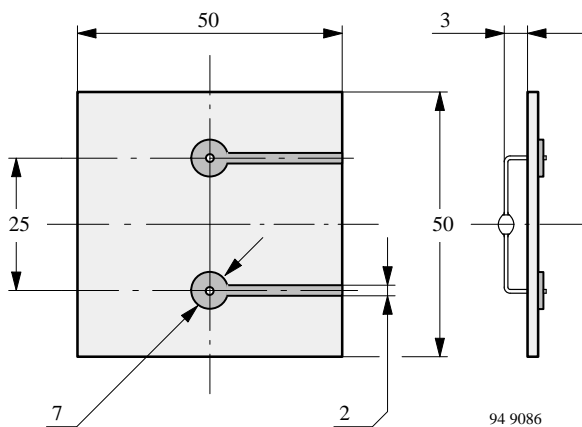


Figure 1 : Epoxy glass hard tissue, board thickness 1.5 mm,  
 $R_{thJA} \leq 100 \text{ K/W}$

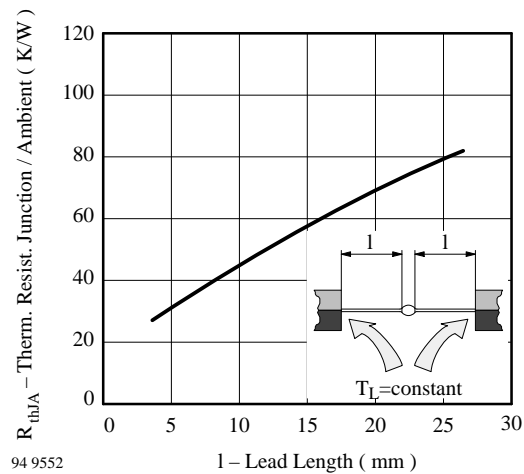


Figure 2 : Thermal Resistance vs. Lead Length

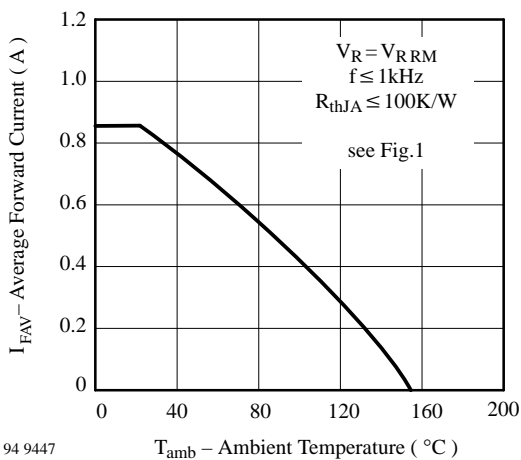


Figure 3 : Average Forward Current vs. Ambient Temperature

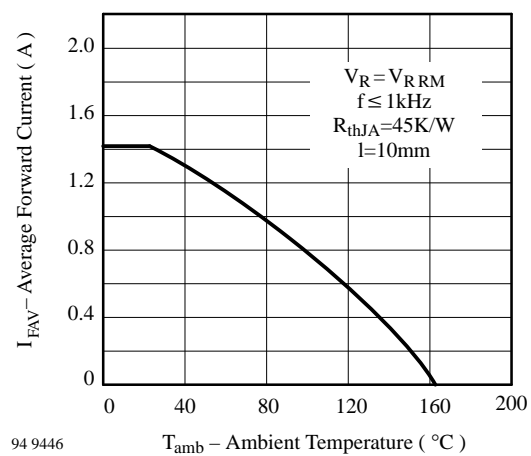


Figure 4 : Average Forward Current vs. Ambient Temperature

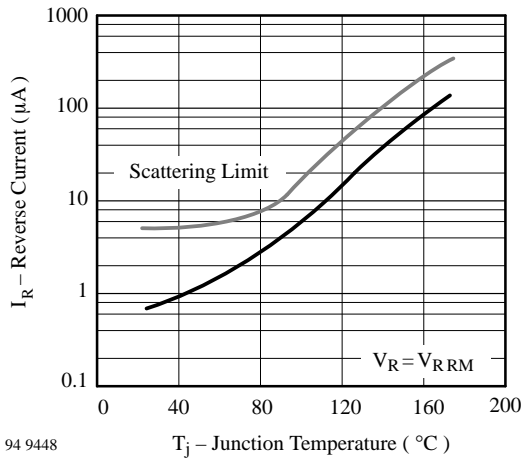


Figure 5 : Reverse Current vs. Junction Temperature

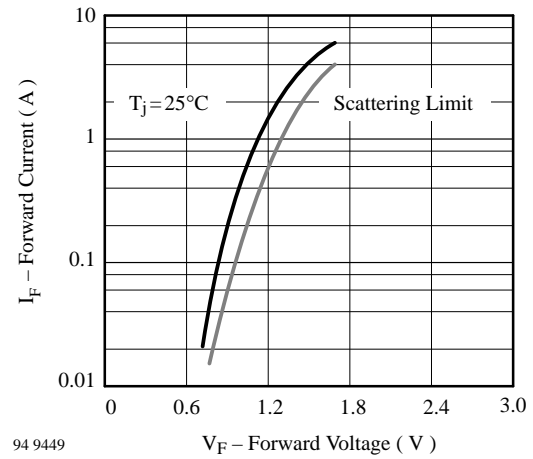


Figure 6 : Forward Current vs. Forward Voltage

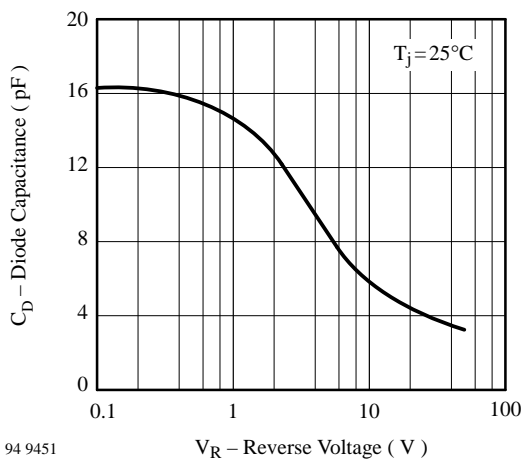
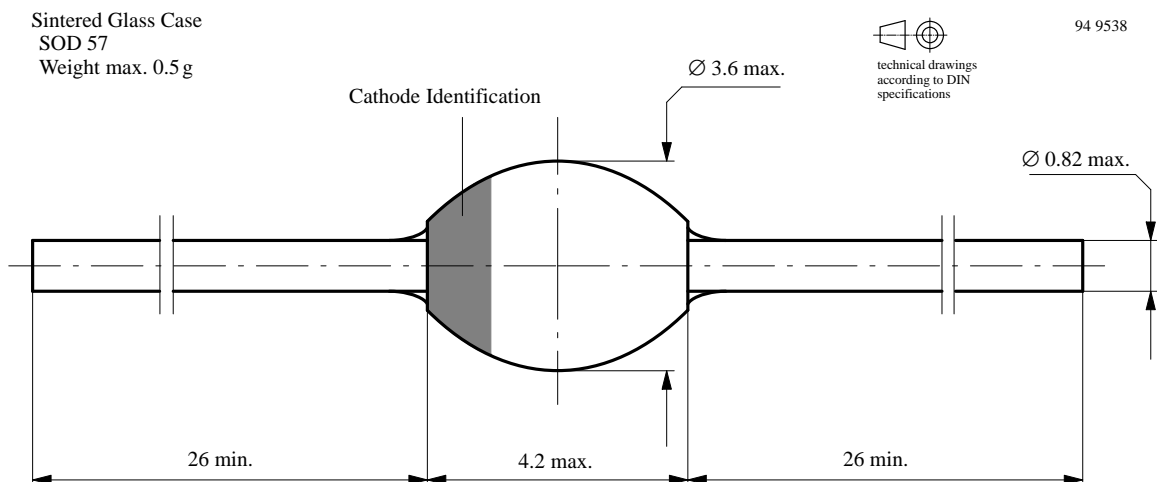


Figure 7 : Diode Capacitance vs. Reverse Voltage

## Dimensions in mm

Sintered Glass Case  
SOD 57  
Weight max. 0.5 g



**OZONE DEPLETING SUBSTANCES POLICY STATEMENT**

It is the policy of **TEMIC TELEFUNKEN microelectronic GmbH** to

1. Meet all present and future national and international statutory requirements and
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

Of particular concern is the control or elimination of releases into the atmosphere of those substances which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) will soon severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

**TEMIC TELEFUNKEN microelectronic GmbH** semiconductor division has been able to use its policy of continuous improvements to eliminate the use of any ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA and
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

**TEMIC** can certify that our semiconductors are not manufactured with and do not contain ozone depleting substances.

**We reserve the right to make changes to improve technical design without further notice.**

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