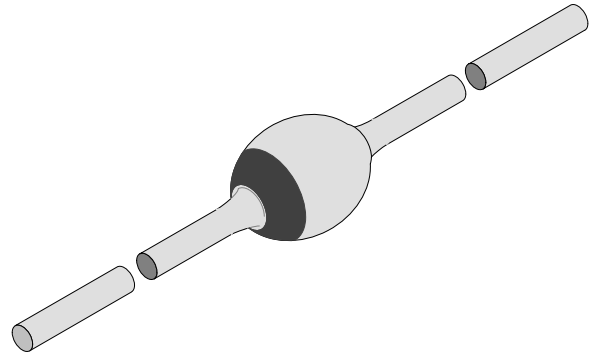


## Fast Soft Recovery Rectifier

### Features

- Controlled avalanche characteristics
- Miniature axial leaded
- Glass passivated
- Hermetically sealed glass envelope
- Low reverse current
- High reverse voltage



95 10526

### Applications

General purpose rectifier

### Absolute Maximum Ratings

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

| Parameter                               | Test Conditions                                   | Type   | Symbol    | Value      | Unit             |
|---|---|--------|-----------|------------|------------------|
| Repetitive peak reverse voltage         |   | BYT41A | $V_{RRM}$ | 50         | V                |
|   |   | BYT41B | $V_{RRM}$ | 100        | V                |
|   |   | BYT41D | $V_{RRM}$ | 200        | V                |
|   |   | BYT41G | $V_{RRM}$ | 400        | V                |
|   |   | BYT41J | $V_{RRM}$ | 600        | V                |
|   |   | BYT41K | $V_{RRM}$ | 800        | V                |
|   |   | BYT41M | $V_{RRM}$ | 1000       | V                |
| Reverse voltage                         |   | BYT41A | $V_R$     | 50         | V                |
|   |   | BYT41B | $V_R$     | 100        | V                |
|   |   | BYT41D | $V_R$     | 200        | V                |
|   |   | BYT41G | $V_R$     | 400        | V                |
|   |   | BYT41J | $V_R$     | 600        | V                |
|   |   | BYT41K | $V_R$     | 800        | V                |
|   |   | BYT41M | $V_R$     | 1000       | V                |
| Peak forward surge current              | $t_p=8.3$ ms, half sinewave                       |        | $I_{FSM}$ | 30         | A                |
| Average forward current                 | Lead length $l = 10$ mm, $T_L = 25^\circ\text{C}$ |        | $I_{FAV}$ | 1.25       | A                |
| Non repetitive reverse avalanche energy | $I_{(BR)R}=1$ A, inductive load                   |        | $E_R$     | 10         | mJ               |
| Junction temperature                    |   |        | $T_j$     | 175        | $^\circ\text{C}$ |
| Storage temperature range               |   |        | $T_{stg}$ | -55...+175 | $^\circ\text{C}$ |

## Maximum Thermal Resistance

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

| Parameter        | Test Conditions  | Symbol     | Value | Unit |
|------------------|--|------------|-------|------|
| Junction ambient | Lead length $l = 10\text{ mm}$ , $T_L = \text{constant}$ | $R_{thJA}$ | 60    | K/W  |
|                  | on PC board with spacing 25mm                            | $R_{thJA}$ | 110   | K/W  |

## Characteristics

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

| Parameter                 | Test Conditions  | Type   | Symbol      | Min  | Typ | Max | Unit          |
|---------------------------|--|--------|-------------|------|-----|-----|---------------|
| Forward voltage           | $I_F = 1\text{ A}$   | BYT41A | $V_F$       |      |     | 1.1 | V             |
|                           |  | BYT41B | $V_F$       |      |     | 1.1 | V             |
|                           |  | BYT41D | $V_F$       |      |     | 1.1 | V             |
|                           |  | BYT41G | $V_F$       |      |     | 1.1 | V             |
|                           |  | BYT41J | $V_F$       |      |     | 1.1 | V             |
|                           |  | BYT41K | $V_F$       |      |     | 1.1 | V             |
|                           |  | BYT41M | $V_F$       |      |     | 1.1 | 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 breakdown voltage | $I_R = 100\mu\text{A}$   | BYT41A | $V_{(BR)R}$ | 50   |     |     | V             |
|                           |  | BYT41B | $V_{(BR)R}$ | 100  |     |     | V             |
|                           |  | BYT41D | $V_{(BR)R}$ | 200  |     |     | V             |
|                           |  | BYT41G | $V_{(BR)R}$ | 400  |     |     | V             |
|                           |  | BYT41J | $V_{(BR)R}$ | 600  |     |     | V             |
|                           |  | BYT41K | $V_{(BR)R}$ | 800  |     |     | V             |
|                           |  | BYT41M | $V_{(BR)R}$ | 1000 |     |     | V             |
| Reverse recovery time     | $I_F = 0.5\text{ A}$ , $I_R = 1\text{ A}$ ,<br>$i_R = 0.25\text{ A}$ | BYT41A | $t_{rr}$    |      |     | 2   | $\mu\text{s}$ |
|                           |  | BYT41B | $t_{rr}$    |      |     | 2   | $\mu\text{s}$ |
|                           |  | BYT41D | $t_{rr}$    |      |     | 2   | $\mu\text{s}$ |
|                           |  | BYT41G | $t_{rr}$    |      |     | 2   | $\mu\text{s}$ |
|                           |  | BYT41J | $t_{rr}$    |      |     | 2   | $\mu\text{s}$ |
|                           |  | BYT41K | $t_{rr}$    |      |     | 2   | $\mu\text{s}$ |
|                           |  | BYT41M | $t_{rr}$    |      |     | 2   | $\mu\text{s}$ |

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

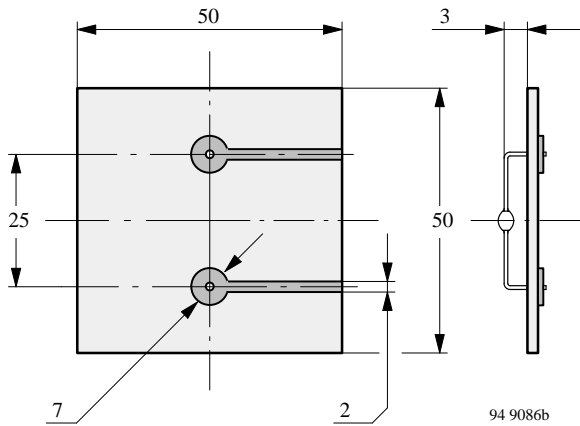


Figure 1. Epoxy glass hard tissue, board thickness 1.5 mm,  
 $R_{thJA} \cong 110 \text{ K/W}$

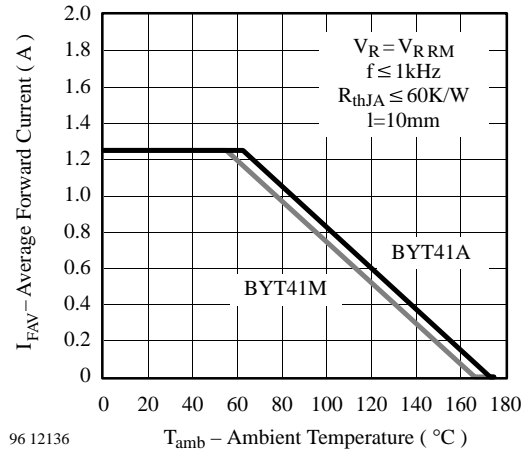


Figure 4. Average Forward Current vs. Ambient Temperature

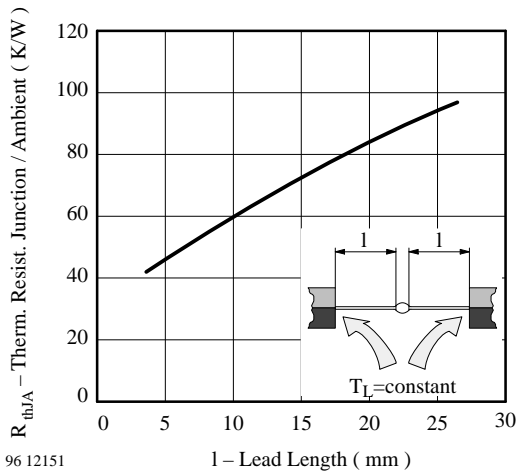


Figure 2. Thermal Resistance vs. Lead Length

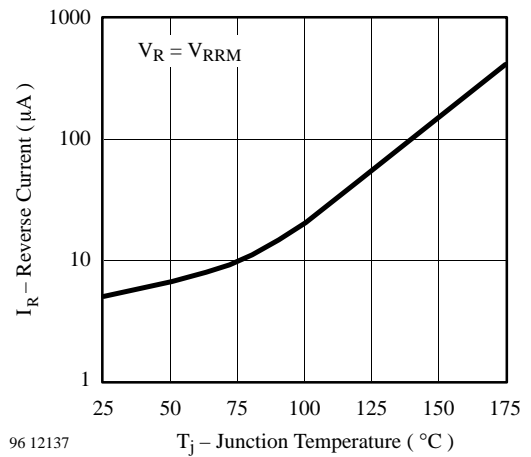


Figure 5. Reverse Current vs. Junction Temperature

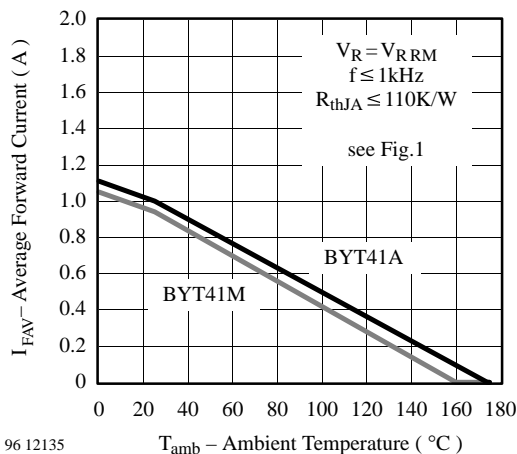


Figure 3. Average Forward Current vs. Ambient Temperature

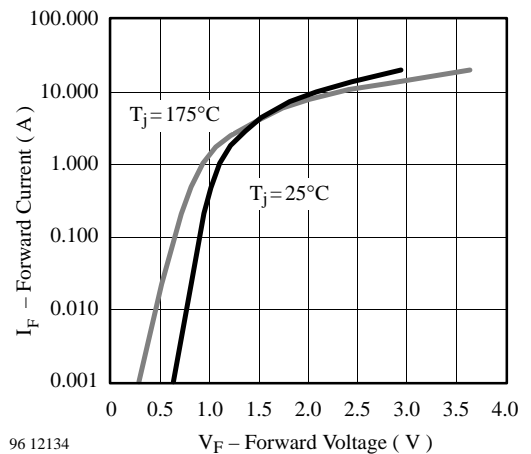
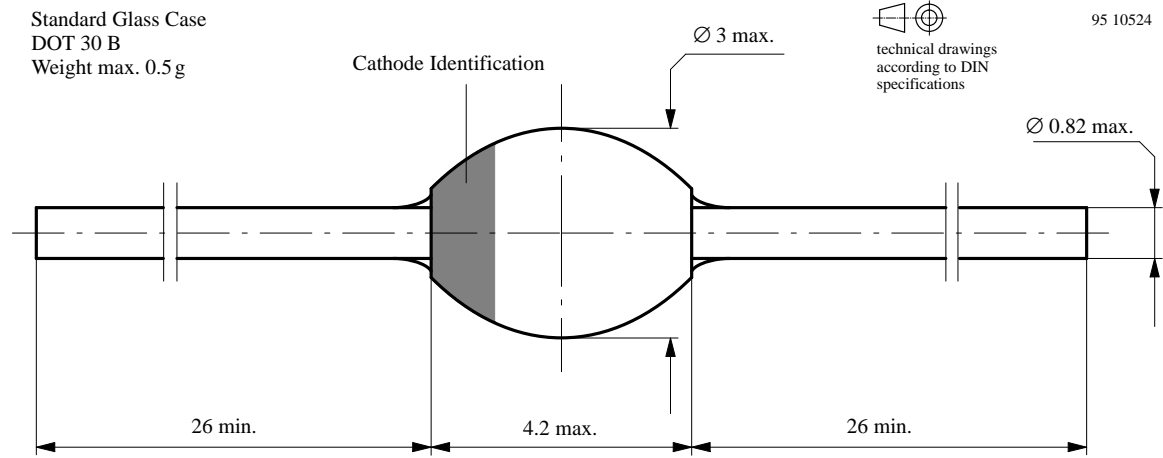


Figure 6. Forward Current vs. Forward Voltage

## Dimensions in mm



## 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.
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.

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

The Montreal Protocol (1987) and its London Amendments (1990) intend to 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 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
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 ozone depleting substances and do not contain such substances.

**We reserve the right to make changes to improve technical design and may do so without further notice.**

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use TEMIC products for any unintended or unauthorized application, the buyer shall indemnify TEMIC against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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