



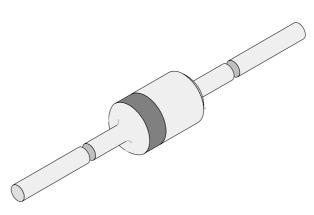
# Silicon Epitaxial Planar Z–Diodes

#### Features

- Sharp edge in reverse characteristics
- Low reverse current
- Low noise
- Very high stability
- Available with tighter tolerances

#### Applications

Voltage stabilization



94 9369

## **Absolute Maximum Ratings**

 $T_j = 25^{\circ}C$ 

| Parameter                 | Test Conditions             | Туре | Symbol           | Value   | Unit |
|---------------------------|-----------------------------|------|------------------|---------|------|
| Power dissipation         | l=4mm, T <sub>L</sub> =25°C |      | $P_V$            | 1.3     | W    |
| Junction temperature      |                             |      | Тj               | 175     | °C   |
| Storage temperature range |                             |      | T <sub>stg</sub> | -65+175 | °C   |

#### **Maximum Thermal Resistance**

 $T_i = 25^{\circ}C$ 

| Parameter        | Test Conditions                 | Symbol            | Value | Unit |
|------------------|---------------------------------|-------------------|-------|------|
| Junction ambient | l=4mm, T <sub>L</sub> =constant | R <sub>thJA</sub> | 110   | K/W  |

#### Characteristics

 $T_j = 25^{\circ}C$ 

| Parameter       | Test Conditions       | Туре | Symbol         | Min | Тур | Max | Unit |
|-----------------|-----------------------|------|----------------|-----|-----|-----|------|
| Forward voltage | I <sub>F</sub> =200mA |      | V <sub>F</sub> |     |     | 1   | V    |

# BZX85C...

TEMIC Semiconductors

| Туре   | VZnom | I <sub>ZT</sub> | for $V_{ZT}^{(1)}$ are | nd r <sub>zjT</sub> | r <sub>zjk</sub> at I <sub>ZK</sub> |      | I <sub>R</sub> at V <sub>R</sub> |     | TK <sub>VZ</sub> |
|--------|-------|-----------------|------------------------|---------------------|-------------------------------------|------|----------------------------------|-----|------------------|
| BZX85C | V     | mA              | V                      | Ω                   | Ω                                   | mA   | μΑ                               | V   | %/K              |
| 2V7    | 2.7   | 80              | 2.5 to 2.9             | < 20                | < 400                               | 1    | < 150                            | 1   | -0.08 to -0.05   |
| 3V0    | 3.0   | 80              | 2.8 to 3.2             | < 20                | < 400                               | 1    | < 100                            | 1   | -0.08 to -0.05   |
| 3V3    | 3.3   | 80              | 3.1 to 3.5             | < 20                | < 400                               | 1    | < 40                             | 1   | -0.08 to -0.05   |
| 3V6    | 3.6   | 60              | 3.4 to 3.8             | < 20                | < 500                               | 1    | < 20                             | 1   | -0.08 to -0.05   |
| 3V9    | 3.9   | 60              | 3.7 to 4.1             | < 15                | < 500                               | 1    | < 10                             | 1   | -0.07 to -0.02   |
| 4V3    | 4.3   | 50              | 4.0 to 4.6             | < 13                | < 500                               | 1    | < 3                              | 1   | -0.07 to -0.01   |
| 4V7    | 4.7   | 45              | 4.4 to 5.0             | < 13                | < 600                               | 1    | < 3                              | 1   | -0.03 to +0.04   |
| 5V1    | 5.1   | 45              | 4.8 to 5.4             | < 10                | < 500                               | 1    | < 1                              | 1.5 | -0.01 to +0.04   |
| 5V6    | 5.6   | 45              | 5.2 to 6.0             | < 7                 | < 400                               | 1    | < 1                              | 2   | 0 to +0.045      |
| 6V2    | 6.2   | 35              | 5.8 to 6.6             | < 4                 | < 300                               | 1    | < 1                              | 3   | +0.01 to +0.055  |
| 6V8    | 6.8   | 35              | 6.4 to 7.2             | < 3.5               | < 300                               | 1    | < 1                              | 4   | +0.015 to +0.06  |
| 7V5    | 7.5   | 35              | 7.0 to 7.9             | < 3                 | < 200                               | 0.5  | < 1                              | 4.5 | +0.02 to +0.065  |
| 8V2    | 8.2   | 25              | 7.7 to 8.7             | < 5                 | < 200                               | 0.5  | < 1                              | 6.2 | 0.03 to 0.07     |
| 9V1    | 9.1   | 25              | 8.5 to 9.6             | < 5                 | < 200                               | 0.5  | < 1                              | 6.8 | 0.035 to 0.075   |
| 10     | 10    | 25              | 9.4 to 10.6            | < 7                 | < 200                               | 0.5  | < 0.5                            | 7   | 0.04 to 0.08     |
| 11     | 11    | 20              | 10.4 to 11.6           | < 8                 | < 300                               | 0.5  | < 0.5                            | 8.2 | 0.045 to 0.08    |
| 12     | 12    | 20              | 11.4 to 12.7           | < 9                 | < 350                               | 0.5  | < 0.5                            | 9.1 | 0.045 to 0.085   |
| 13     | 13    | 20              | 12.4 to 14.1           | < 10                | < 400                               | 0.5  | < 0.5                            | 10  | 0.05 to 0.085    |
| 15     | 15    | 15              | 13.8 to 15.6           | < 15                | < 500                               | 0.5  | < 0.5                            | 11  | 0.055 to 0.09    |
| 16     | 16    | 15              | 15.3 to 17.1           | < 15                | < 500                               | 0.5  | < 0.5                            | 12  | 0.055 to 0.09    |
| 18     | 18    | 15              | 16.8 to 19.1           | < 20                | < 500                               | 0.5  | < 0.5                            | 13  | 0.06 to 0.09     |
| 20     | 20    | 10              | 18.8 to 21.2           | < 24                | < 600                               | 0.5  | < 0.5                            | 15  | 0.06 to 0.09     |
| 22     | 22    | 10              | 20.8 to 23.3           | < 25                | < 600                               | 0.5  | < 0.5                            | 16  | 0.06 to 0.095    |
| 24     | 24    | 10              | 22.8 to 25.6           | < 25                | < 600                               | 0.5  | < 0.5                            | 18  | 0.06 to 0.095    |
| 27     | 27    | 8               | 25.1 to 28.9           | < 30                | < 750                               | 0.25 | < 0.5                            | 20  | 0.06 to 0.095    |
| 30     | 30    | 8               | 28 to 32               | < 30                | < 1000                              | 0.25 | < 0.5                            | 22  | 0.06 to 0.095    |
| 33     | 33    | 8               | 31 to 35               | < 35                | < 1000                              | 0.25 | < 0.5                            | 24  | 0.06 to 0.095    |
| 36     | 36    | 8               | 34 to 38               | < 40                | < 1000                              | 0.25 | < 0.5                            | 27  | 0.06 to 0.095    |
| 39     | 39    | 6               | 37 to 41               | < 50                | < 1000                              | 0.25 | < 0.5                            | 30  | 0.06 to 0.095    |
| 43     | 43    | 6               | 40 to 46               | < 50                | < 1000                              | 0.25 | < 0.5                            | 33  | 0.06 to 0.095    |
| 47     | 47    | 4               | 44 to 50               | < 90                | < 1500                              | 0.25 | < 0.5                            | 36  | 0.06 to 0.095    |
| 51     | 51    | 4               | 48 to 54               | < 115               | < 1500                              | 0.25 | < 0.5                            | 39  | 0.06 to 0.095    |
| 56     | 56    | 4               | 52 to 60               | < 120               | < 2000                              | 0.25 | < 0.5                            | 43  | 0.06 to 0.095    |
| 62     | 62    | 4               | 58 to 66               | < 125               | < 2000                              | 0.25 | < 0.5                            | 47  | 0.06 to 0.095    |
| 68     | 68    | 4               | 64 to 72               | < 130               | < 2000                              | 0.25 | < 0.5                            | 51  | 0.06 to 0.095    |
| 75     | 75    | 4               | 70 to 79               | < 135               | < 2000                              | 0.25 | < 0.5                            | 56  | 0.06 to 0.095    |

 $^{1)}$  Tighter tolerances available on request: BZX85B...  $\pm 2\%$  of  $V_{Znom}$ 



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

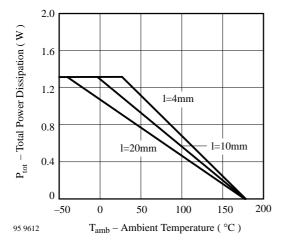


Figure 1. Total Power Dissipation vs. Ambient Temperature

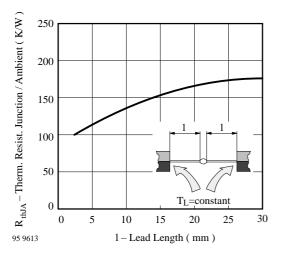


Figure 2. Thermal Resistance vs. Lead Length

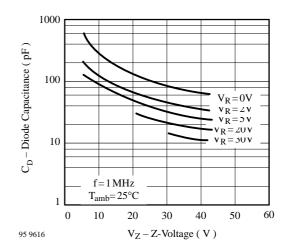


Figure 3. Diode Capacitance vs. Z-Voltage

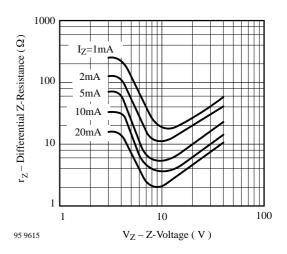
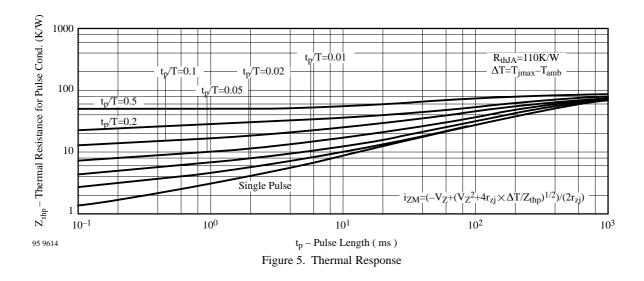


Figure 4. Differential Z-Resistance vs. Z-Voltage

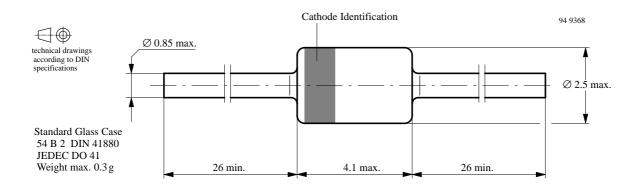


**TELEFUNKEN Semiconductors** Rev. A2, 24-Jun-96





# **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.

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