



# BZX84J series

## Voltage regulator diodes

Rev. 3 — 27 February 2025

Product data sheet

## 1. General description

General-purpose Zener diodes in a SOD323F (SC-90) very small and flat lead Surface-Mounted Device (SMD) plastic package.

## 2. Features and benefits

- Non-repetitive peak reverse power dissipation:  $\leq 100$  W for types  $\leq 6.8$  V
- Non-repetitive peak reverse power dissipation:  $\leq 40$  W for types  $\geq 7.5$  V
- Total power dissipation:  $P_{\text{tot}} \leq 550$  mW
- Wide working voltage range: nominal 2.4 V to 75 V (E24 range)
- Two tolerance series:  $\pm 2\%$  and  $\pm 5\%$
- Small plastic package suitable for surface-mounted design
- Low differential resistance
- AEC-Q101 qualified

## 3. Applications

- General regulation functions

## 4. Quick reference data

Table 1. Quick reference data

| Symbol    | Parameter                                     | Conditions     |     | Min | Typ | Max | Unit |
|-----------|-----------------------------------------------|----------------|-----|-----|-----|-----|------|
| $V_F$     | forward voltage                               | $I_F = 100$ mA | [1] | -   | -   | 1.1 | V    |
| $P_{ZSM}$ | non-repetitive peak reverse power dissipation |                | [2] | -   | -   | 100 | W    |
|           |                                               |                | [3] | -   | -   | 40  | W    |

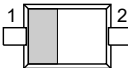
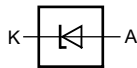
[1] pulsed;  $t_p \leq 300$   $\mu$ s;  $\delta \leq 0.02$

[2] pulsed;  $t_p = 100$   $\mu$ s; square wave;  $T_j = 25$  °C prior to surge;  $\leq 6.8$  V

[3] pulsed;  $t_p = 100$   $\mu$ s; square wave;  $T_j = 25$  °C prior to surge;  $\geq 7.5$  V

## 5. Pinning information

Table 2. Pinning

| Pin | Symbol | Description | Simplified outline                                                                   | Graphic symbol                                                                                     |
|-----|--------|-------------|--------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------|
| 1   | K      | cathode[1]  |  | <br>006aaa152 |
| 2   | A      | anode       |                                                                                      |                                                                                                    |

[1] The marking bar indicates the cathode.

6. Ordering information

Table 3. Ordering information

| Type number                              | Package |                                          |         |
|------------------------------------------|---------|------------------------------------------|---------|
|                                          | Name    | Description                              | Version |
| BZX84J-B2V4 to BZX84J-C75 <sup>[1]</sup> | SC-90   | plastic surface-mounted package; 2 leads | SOD323F |

[1] The series consists of 74 types with nominal working voltages from 2.4 V to 75 V.

7. Marking

Table 4. Marking Codes

| Type number | Mark. Code | Type number | Mark. Code | Type number | Mark. Code | Type number | Mark. Code |
|-------------|------------|-------------|------------|-------------|------------|-------------|------------|
| BZX84J-B2V4 | SL         | BZX84J-B15  | SC         | BZX84J-C2V4 | U3         | BZX84J-C15  | TV         |
| BZX84J-B2V7 | SM         | BZX84J-B16  | SD         | BZX84J-C2V7 | U4         | BZX84J-C16  | TW         |
| BZX84J-B3V0 | ST         | BZX84J-B18  | SE         | BZX84J-C3V0 | U9         | BZX84J-C18  | TX         |
| BZX84J-B3V3 | SU         | BZX84J-B20  | SF         | BZX84J-C3V3 | UA         | BZX84J-C20  | TY         |
| BZX84J-B3V6 | SV         | BZX84J-B22  | SG         | BZX84J-C3V6 | UB         | BZX84J-C22  | TZ         |
| BZX84J-B3V9 | SW         | BZX84J-B24  | SH         | BZX84J-C3V9 | UC         | BZX84J-C24  | U1         |
| BZX84J-B4V3 | SZ         | BZX84J-B27  | SK         | BZX84J-C4V3 | UF         | BZX84J-C27  | U2         |
| BZX84J-B4V7 | TA         | BZX84J-B30  | SN         | BZX84J-C4V7 | UG         | BZX84J-C30  | U5         |
| BZX84J-B5V1 | TD         | BZX84J-B33  | SP         | BZX84J-C5V1 | UL         | BZX84J-C33  | U6         |
| BZX84J-B5V6 | TE         | BZX84J-B36  | SR         | BZX84J-C5V6 | UM         | BZX84J-C36  | U7         |
| BZX84J-B6V2 | TH         | BZX84J-B39  | SS         | BZX84J-C6V2 | UR         | BZX84J-C39  | U8         |
| BZX84J-B6V8 | TK         | BZX84J-B43  | SX         | BZX84J-C6V8 | US         | BZX84J-C43  | UD         |
| BZX84J-B7V5 | TM         | BZX84J-B47  | SY         | BZX84J-C7V5 | UU         | BZX84J-C47  | UE         |
| BZX84J-B8V2 | TN         | BZX84J-B51  | TB         | BZX84J-C8V2 | UV         | BZX84J-C51  | UH         |
| BZX84J-B9V1 | TP         | BZX84J-B56  | TC         | BZX84J-C9V1 | UW         | BZX84J-C56  | UK         |
| BZX84J-B10  | S8         | BZX84J-B62  | TF         | BZX84J-C10  | TR         | BZX84J-C62  | UN         |
| BZX84J-B11  | S9         | BZX84J-B68  | TG         | BZX84J-C11  | TS         | BZX84J-C68  | UP         |
| BZX84J-B12  | SA         | BZX84J-B75  | TL         | BZX84J-C12  | TT         | BZX84J-C75  | UT         |
| BZX84J-B13  | SB         | -           | -          | BZX84J-C13  | TU         | -           | -          |

8. Limiting values

Table 5. Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

| Symbol           | Parameter                                     | Conditions               |     | Min | Max                | Unit |
|------------------|-----------------------------------------------|--------------------------|-----|-----|--------------------|------|
| I <sub>F</sub>   | forward current                               |                          |     | -   | 250                | mA   |
| I <sub>ZSM</sub> | non-repetitive peak reverse current           |                          | [1] | -   | see Tables 8 and 9 |      |
| P <sub>ZSM</sub> | non-repetitive peak reverse power dissipation |                          | [2] | -   | 100                | W    |
|                  |                                               |                          | [3] | -   | 40                 | W    |
| P <sub>tot</sub> | total power dissipation                       | T <sub>amb</sub> ≤ 25 °C | [4] | -   | 550                | mW   |
| T <sub>j</sub>   | junction temperature                          |                          |     | -   | 150                | °C   |
| T <sub>amb</sub> | ambient temperature                           |                          |     | -55 | +150               | °C   |
| T <sub>stg</sub> | storage temperature                           |                          |     | -65 | +150               | °C   |

- [1] t<sub>p</sub> = 100 μs; square wave; T<sub>j</sub> = 25 °C prior to surge.
- [2] t<sub>p</sub> = 100 μs; square wave; T<sub>j</sub> = 25 °C prior to surge; ≤ 6.8 V.
- [3] t<sub>p</sub> = 100 μs; square wave; T<sub>j</sub> = 25 °C prior to surge; ≥ 7.5 V.
- [4] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode 1 cm<sup>2</sup>.

9. Thermal characteristics

Table 6. Thermal characteristics

| Symbol                | Parameter                                        | Conditions  |      | Min | Typ | Max | Unit |
|-----------------------|--------------------------------------------------|-------------|------|-----|-----|-----|------|
| R <sub>th(j-a)</sub>  | thermal resistance from junction to ambient      | in free air | [1]. | -   | -   | 230 | K/W  |
| R <sub>th(j-sp)</sub> | thermal resistance from junction to solder point |             | [2]  | -   | -   | 55  | K/W  |

- [1] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated, mounting pad for cathode 1 cm<sup>2</sup>
- [2] Soldering point of cathode tab.

10. Characteristics

Table 7. Electrical characteristics

T<sub>j</sub> = 25 °C unless otherwise specified.

| Symbol         | Parameter       | Conditions              |     | Max | Unit |
|----------------|-----------------|-------------------------|-----|-----|------|
| V <sub>F</sub> | forward voltage | I <sub>F</sub> = 10 mA  | [1] | 0.9 | V    |
|                |                 | I <sub>F</sub> = 100 mA |     | 1.1 | V    |

- [1] Pulse test: t<sub>p</sub> ≤ 300 μs; δ ≤ 0.02

Table 8. Electrical characteristics per type; BZX84J-B2V4 to BZX84J-C24

T<sub>j</sub> = 25 °C unless otherwise specified.

| BZX84J-x<br>xx | Sel | Working voltage<br>V <sub>Z</sub> (V); |       | Differential<br>resistance<br>r <sub>diff</sub> (Ω); |                          | Reverse current<br>I <sub>R</sub> (μA); |                    | Temperature<br>coefficient<br>S <sub>Z</sub> (mV/K); |     | Diode<br>capacit.<br>C <sub>d</sub> (pF) <sup>[1]</sup> | Non-repetitive<br>peak<br>reverse<br>current<br>I <sub>ZSM</sub> (A) <sup>[2]</sup> |
|----------------|-----|----------------------------------------|-------|------------------------------------------------------|--------------------------|-----------------------------------------|--------------------|------------------------------------------------------|-----|---------------------------------------------------------|-------------------------------------------------------------------------------------|
|                |     | I <sub>Z</sub> = 5 mA                  |       | I <sub>Z</sub> = 1<br>mA                             | I <sub>Z</sub> = 5<br>mA |                                         |                    | I <sub>Ztest</sub> = 5 mA                            |     |                                                         |                                                                                     |
|                |     | Min                                    | Max   | Min                                                  | Max                      | Max                                     | V <sub>R</sub> (V) | Min                                                  | Max | Max                                                     | Max                                                                                 |
| 2V4            | B   | 2.35                                   | 2.45  | 400                                                  | 100                      | 50                                      | 1                  | -3.5                                                 | 0   | 450                                                     | 12                                                                                  |
|                | C   | 2.2                                    | 2.6   |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 2V7            | B   | 2.65                                   | 2.75  | 450                                                  | 100                      | 20                                      | 1                  | -3.5                                                 | 0   | 440                                                     | 12                                                                                  |
|                | C   | 2.5                                    | 2.9   |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 3V0            | B   | 2.94                                   | 3.06  | 500                                                  | 95                       | 10                                      | 1                  | -3.5                                                 | 0   | 425                                                     | 12                                                                                  |
|                | C   | 2.8                                    | 3.2   |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 3V3            | B   | 3.23                                   | 3.37  | 500                                                  | 95                       | 5                                       | 1                  | -3.5                                                 | 0   | 410                                                     | 12                                                                                  |
|                | C   | 3.1                                    | 3.5   |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 3V6            | B   | 3.53                                   | 3.67  | 500                                                  | 90                       | 5                                       | 1                  | -3.5                                                 | 0   | 390                                                     | 12                                                                                  |
|                | C   | 3.4                                    | 3.8   |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 3V9            | B   | 3.82                                   | 3.98  | 500                                                  | 90                       | 3                                       | 1                  | -3.5                                                 | 0   | 370                                                     | 12                                                                                  |
|                | C   | 3.7                                    | 4.1   |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 4V3            | B   | 4.21                                   | 4.39  | 600                                                  | 90                       | 3                                       | 1                  | -3.5                                                 | 0   | 350                                                     | 12                                                                                  |
|                | C   | 4.00                                   | 4.60  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 4V7            | B   | 4.61                                   | 4.79  | 500                                                  | 80                       | 3                                       | 2                  | -3.5                                                 | 0.2 | 325                                                     | 12                                                                                  |
|                | C   | 4.40                                   | 5.00  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 5V1            | B   | 5.00                                   | 5.20  | 480                                                  | 60                       | 2                                       | 2                  | -2.7                                                 | 1.2 | 300                                                     | 12                                                                                  |
|                | C   | 4.80                                   | 5.40  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 5V6            | B   | 5.49                                   | 5.71  | 400                                                  | 40                       | 1                                       | 2                  | -2.0                                                 | 2.5 | 275                                                     | 12                                                                                  |
|                | C   | 5.20                                   | 6.00  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 6V2            | B   | 6.08                                   | 6.32  | 150                                                  | 10                       | 3                                       | 4                  | 0.4                                                  | 3.7 | 250                                                     | 12                                                                                  |
|                | C   | 5.80                                   | 6.60  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 6V8            | B   | 6.66                                   | 6.94  | 80                                                   | 15                       | 2                                       | 4                  | 1.2                                                  | 4.5 | 215                                                     | 12                                                                                  |
|                | C   | 6.40                                   | 7.20  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 7V5            | B   | 7.35                                   | 7.65  | 80                                                   | 10                       | 1                                       | 5                  | 2.5                                                  | 5.3 | 170                                                     | 4                                                                                   |
|                | C   | 7.00                                   | 7.90  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 8V2            | B   | 8.04                                   | 8.36  | 80                                                   | 10                       | 0.7                                     | 5                  | 3.2                                                  | 6.2 | 150                                                     | 4                                                                                   |
|                | C   | 7.70                                   | 8.70  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 9V1            | B   | 8.92                                   | 9.28  | 100                                                  | 10                       | 0.5                                     | 6                  | 3.8                                                  | 7.0 | 120                                                     | 3                                                                                   |
|                | C   | 8.50                                   | 9.60  |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 10             | B   | 9.80                                   | 10.20 | 150                                                  | 10                       | 0.2                                     | 7                  | 4.5                                                  | 8.0 | 110                                                     | 3                                                                                   |
|                | C   | 9.40                                   | 10.60 |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 11             | B   | 10.78                                  | 11.22 | 150                                                  | 10                       | 0.1                                     | 8                  | 5.4                                                  | 9   | 108                                                     | 2.5                                                                                 |
|                | C   | 10.40                                  | 11.60 |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |
| 12             | B   | 11.80                                  | 12.20 | 150                                                  | 10                       | 0.1                                     | 8                  | 6.0                                                  | 10  | 105                                                     | 2.5                                                                                 |
|                | C   | 11.40                                  | 12.70 |                                                      |                          |                                         |                    |                                                      |     |                                                         |                                                                                     |

| BZX84J-x<br>xx | Sel | Working voltage<br>V <sub>Z</sub> (V); |       | Differential<br>resistance<br>r <sub>diff</sub> (Ω); |                          | Reverse current<br>I <sub>R</sub> (μA); |                    | Temperature<br>coefficient<br>S <sub>Z</sub> (mV/K); |     | Diode<br>capacit.<br>C <sub>d</sub> (pF)[1] | Non-<br>repetitive<br>peak<br>reverse<br>current<br>I <sub>ZSM</sub> (A)[2] |
|----------------|-----|----------------------------------------|-------|------------------------------------------------------|--------------------------|-----------------------------------------|--------------------|------------------------------------------------------|-----|---------------------------------------------|-----------------------------------------------------------------------------|
|                |     | I <sub>Z</sub> = 5 mA                  |       | I <sub>Z</sub> = 1<br>mA                             | I <sub>Z</sub> = 5<br>mA |                                         |                    | I <sub>Ztest</sub> = 5 mA                            |     |                                             |                                                                             |
|                |     | Min                                    | Max   | Min                                                  | Max                      | Max                                     | V <sub>R</sub> (V) | Min                                                  | Max | Max                                         | Max                                                                         |
| 13             | B   | 12.70                                  | 13.30 | 170                                                  | 10                       | 0.1                                     | 8                  | 7.0                                                  | 11  | 103                                         | 2.5                                                                         |
|                | C   | 12.40                                  | 14.10 |                                                      |                          |                                         |                    |                                                      |     |                                             |                                                                             |
| 15             | B   | 14.70                                  | 15.30 | 200                                                  | 15                       | 0.05                                    | 10.5               | 9.2                                                  | 13  | 99                                          | 2.0                                                                         |
|                | C   | 13.80                                  | 15.60 |                                                      |                          |                                         |                    |                                                      |     |                                             |                                                                             |
| 16             | B   | 15.70                                  | 16.30 | 200                                                  | 20                       | 0.05                                    | 11.2               | 10.4                                                 | 14  | 97                                          | 1.5                                                                         |
|                | C   | 15.30                                  | 17.1  |                                                      |                          |                                         |                    |                                                      |     |                                             |                                                                             |
| 18             | B   | 17.60                                  | 18.40 | 225                                                  | 20                       | 0.05                                    | 12.6               | 12.4                                                 | 16  | 93                                          | 1.5                                                                         |
|                | C   | 16.80                                  | 19.10 |                                                      |                          |                                         |                    |                                                      |     |                                             |                                                                             |
| 20             | B   | 19.60                                  | 20.40 | 225                                                  | 20                       | 0.05                                    | 14.0               | 14.4                                                 | 18  | 88                                          | 1.5                                                                         |
|                | C   | 18.80                                  | 21.20 |                                                      |                          |                                         |                    |                                                      |     |                                             |                                                                             |
| 22             | B   | 21.60                                  | 22.40 | 250                                                  | 25                       | 0.05                                    | 15.4               | 16.4                                                 | 20  | 84                                          | 1.25                                                                        |
|                | C   | 20.80                                  | 23.30 |                                                      |                          |                                         |                    |                                                      |     |                                             |                                                                             |
| 24             | B   | 23.50                                  | 24.50 | 250                                                  | 30                       | 0.05                                    | 16.8               | 18.4                                                 | 22  | 80                                          | 1.25                                                                        |
|                | C   | 22.80                                  | 25.6  |                                                      |                          |                                         |                    |                                                      |     |                                             |                                                                             |

[1] f = 1 MHz; V<sub>R</sub> = 0 V  
[2] t<sub>p</sub> = 100 μs; square wave; T<sub>J</sub> = 25 °C prior to surge.

Product data sheet

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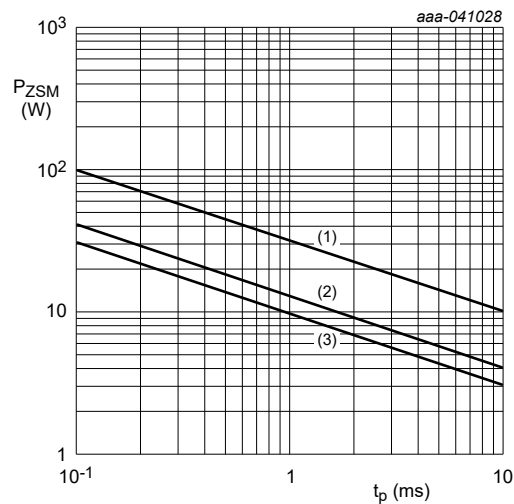
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Table 9. Electrical characteristics per type; BZX84J-B27 to BZX84J-C75

T<sub>j</sub> = 25 °C unless otherwise specified.

| BZX84J-x<br>xx | Sel | Working voltage<br>V <sub>Z</sub> (V); |      | Differential<br>resistance<br>r <sub>diff</sub> (Ω); |                         | Reverse current<br>I <sub>R</sub> (μA); |                    | Temperature<br>coefficient<br>S <sub>Z</sub> (mV/K); |      | Diode<br>capacit.<br>C <sub>d</sub> (pF) <sup>[1]</sup> | Non-<br>repetitive<br>peak<br>reverse<br>current<br>I <sub>ZSM</sub> (A)<br>at t <sub>p</sub> = 100<br>μs; T <sub>amb</sub> =<br>25°C |
|----------------|-----|----------------------------------------|------|------------------------------------------------------|-------------------------|-----------------------------------------|--------------------|------------------------------------------------------|------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|
|                |     | I <sub>Z</sub> =2 mA                   |      | I <sub>Z</sub> = 0.5<br>mA                           | I <sub>Z</sub> =2<br>mA |                                         |                    | I <sub>Ztest</sub> =2 mA                             |      |                                                         |                                                                                                                                       |
|                |     | Min                                    | Max  | Min                                                  | Max                     | Max                                     | V <sub>R</sub> (V) | Min                                                  | Max  | Max                                                     | Max                                                                                                                                   |
| 27             | B   | 26.5                                   | 27.5 | 250                                                  | 40                      | 0.05                                    | 18.9               | 21.4                                                 | 25.3 | 73                                                      | 1                                                                                                                                     |
|                | C   | 25.1                                   | 28.9 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 30             | B   | 29.4                                   | 30.6 | 250                                                  | 40                      | 0.05                                    | 21.0               | 24.4                                                 | 29.4 | 66                                                      | 1                                                                                                                                     |
|                | C   | 28.0                                   | 32.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 33             | B   | 32.3                                   | 33.7 | 275                                                  | 40                      | 0.05                                    | 23.1               | 27.4                                                 | 33.4 | 60                                                      | 0.9                                                                                                                                   |
|                | C   | 31.0                                   | 35.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 36             | B   | 35.3                                   | 36.7 | 300                                                  | 60                      | 0.05                                    | 25.2               | 30.4                                                 | 37.4 | 59                                                      | 0.8                                                                                                                                   |
|                | C   | 34.0                                   | 38.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 39             | B   | 38.2                                   | 39.8 | 300                                                  | 75                      | 0.05                                    | 27.3               | 33.4                                                 | 41.2 | 58                                                      | 0.7                                                                                                                                   |
|                | C   | 37.0                                   | 41.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 43             | B   | 42.1                                   | 43.9 | 325                                                  | 80                      | 0.05                                    | 30.1               | 37.6                                                 | 46.6 | 56                                                      | 0.6                                                                                                                                   |
|                | C   | 40.0                                   | 46.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 47             | B   | 46.1                                   | 47.9 | 325                                                  | 90                      | 0.05                                    | 32.9               | 42.0                                                 | 51.8 | 55                                                      | 0.5                                                                                                                                   |
|                | C   | 44.0                                   | 50.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 51             | B   | 50.0                                   | 52.0 | 350                                                  | 110                     | 0.05                                    | 35.7               | 46.6                                                 | 57.2 | 52                                                      | 0.4                                                                                                                                   |
|                | C   | 48.0                                   | 54.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 56             | B   | 54.9                                   | 57.1 | 375                                                  | 120                     | 0.05                                    | 39.2               | 52.2                                                 | 63.8 | 49                                                      | 0.3                                                                                                                                   |
|                | C   | 52.0                                   | 60.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 62             | B   | 60.8                                   | 63.2 | 400                                                  | 140                     | 0.05                                    | 43.4               | 58.8                                                 | 71.6 | 44                                                      | 0.3                                                                                                                                   |
|                | C   | 58.0                                   | 66.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 68             | B   | 66.6                                   | 69.4 | 400                                                  | 160                     | 0.05                                    | 47.6               | 65.6                                                 | 79.8 | 40                                                      | 0.25                                                                                                                                  |
|                | C   | 64.0                                   | 72.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |
| 75             | B   | 73.5                                   | 76.5 | 400                                                  | 175                     | 0.05                                    | 52.5               | 73.4                                                 | 88.6 | 35                                                      | 0.2                                                                                                                                   |
|                | C   | 70.0                                   | 79.0 |                                                      |                         |                                         |                    |                                                      |      |                                                         |                                                                                                                                       |

[1] f = 1 MHz; V<sub>R</sub> = 0 V



- (1) 2.4 V to 6.8 V ( $T_j = 25^\circ\text{C}$ )
- (2) 7.5 V to 75 V ( $T_j = 25^\circ\text{C}$ )
- (3) 2.4 V to 75 V ( $T_j = 150^\circ\text{C}$ )

Fig. 1. Non-repetitive peak reverse power dissipation as a function of pulse duration; maximum values

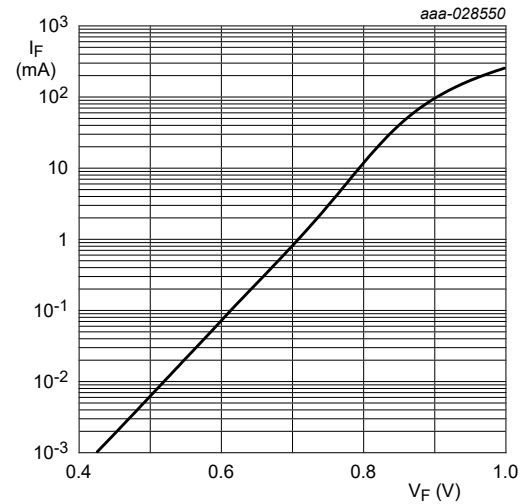


Fig. 2. Forward current as a function of forward voltage; typical values (BZX84J-B/C2V4-Q)

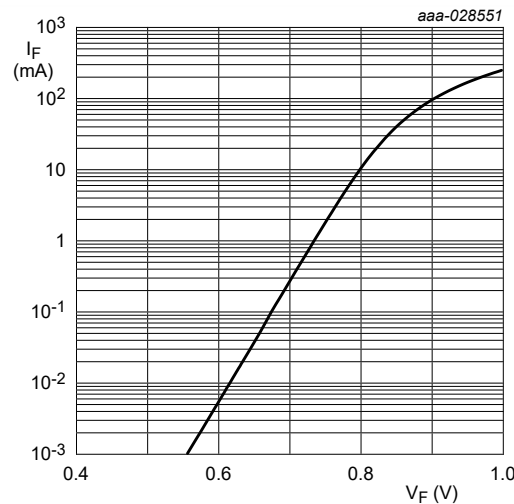


Fig. 3. Forward current as a function of forward voltage; typical values (BZX84J-B/C6V8)

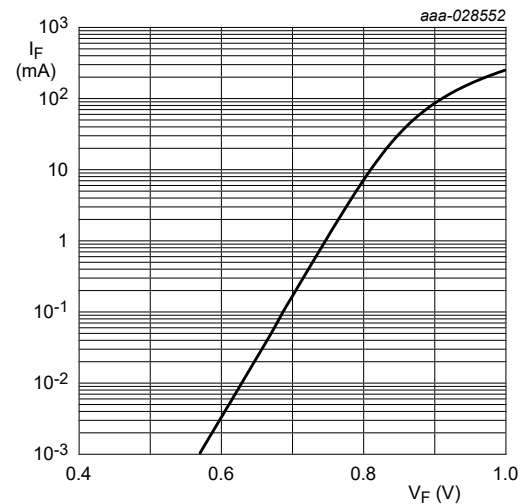


Fig. 4. Forward current as a function of forward voltage; typical values (BZX84J-B/C7V5)

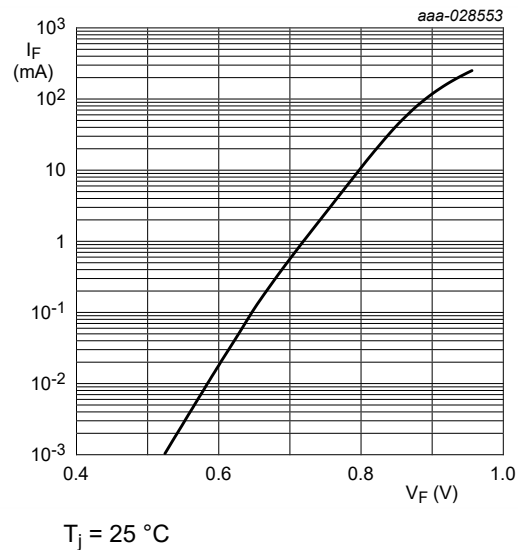


Fig. 5. Forward current as a function of forward voltage; typical values (BZX84J-B/C75)

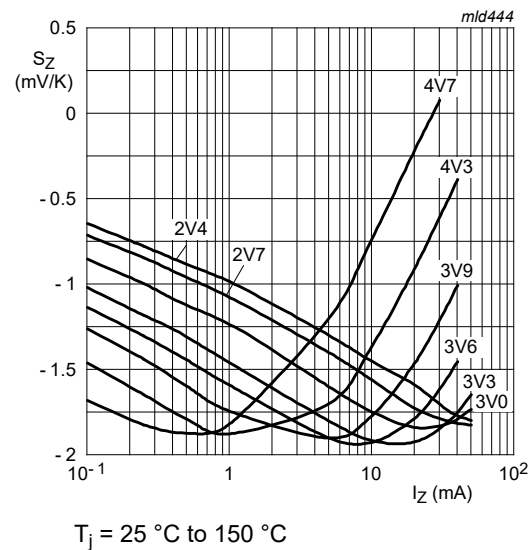


Fig. 6. Temperature coefficient as a function of working current; typical values (BZX84J-B/C2V4 to B/C4V7)

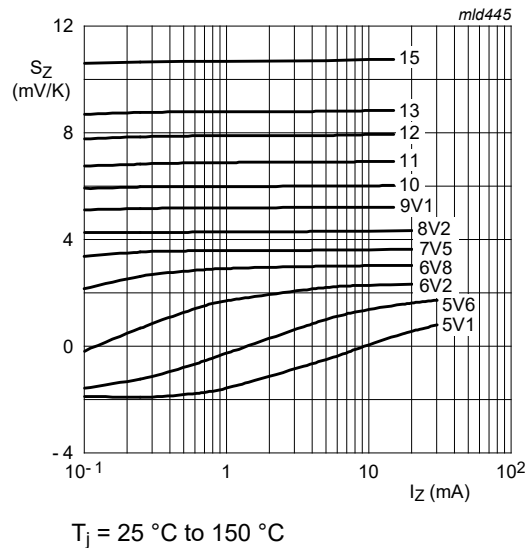


Fig. 7. Temperature coefficient as a function of working current; typical values (BZX84J-B/C5V1 to B/C15)

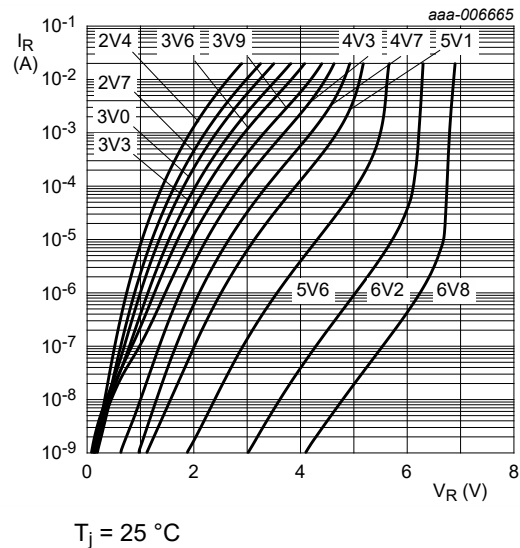


Fig. 8. Reverse current as a function of reverse voltage; typical values (BZX84J-B/C2V4 to B/C6V8)

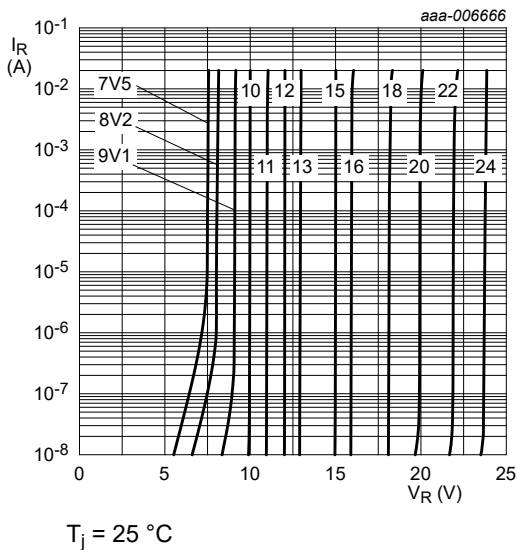


Fig. 9. Reverse current as a function of reverse voltage; typical values (BZX84J-B/C7V5 to B/C24)

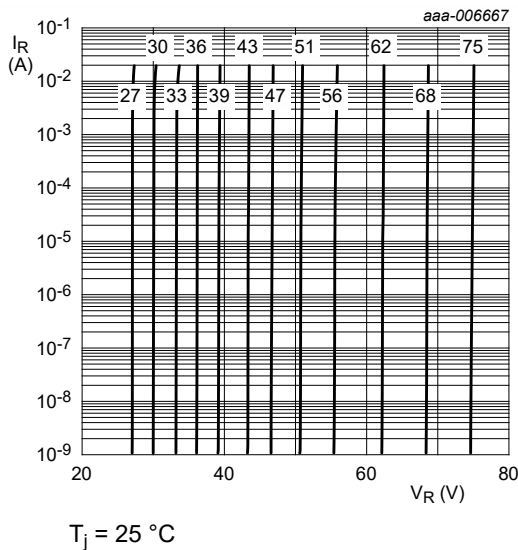


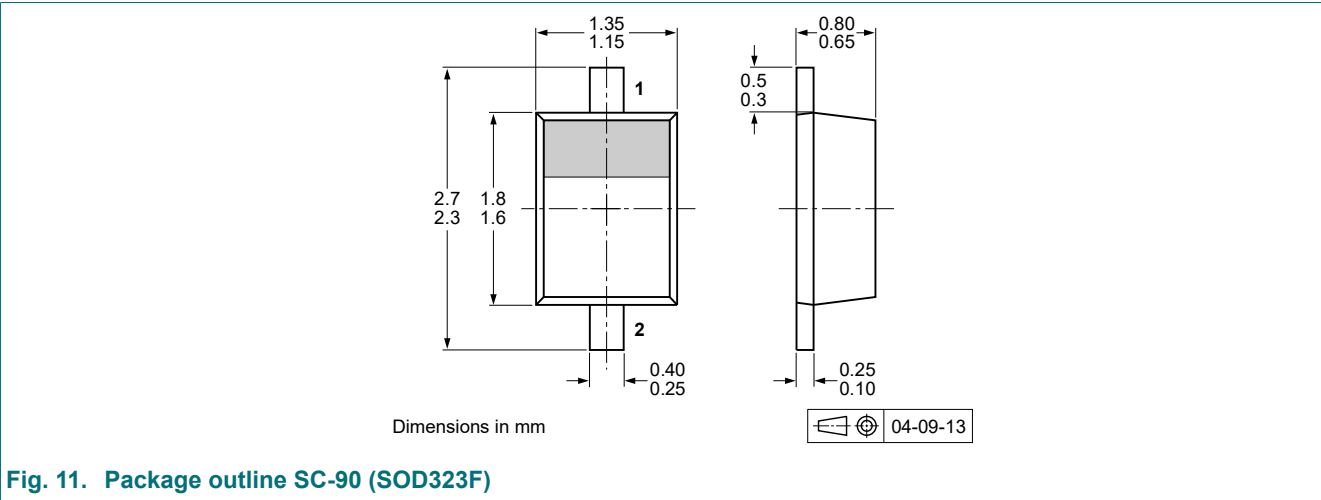
Fig. 10. Reverse current as a function of reverse voltage; typical values (BZX84J-B/C27 to B/C75)

## 11. Test information

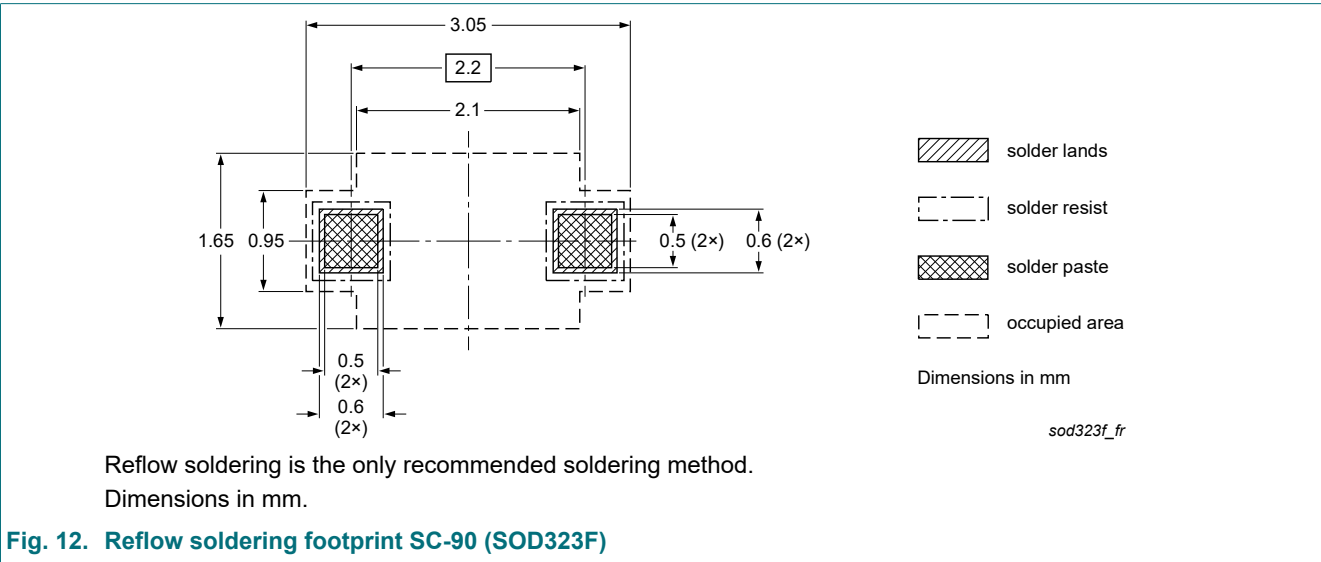
### 11.1. Quality information

This product has been qualified in accordance with the Automotive Electronics Council (AEC) standard Q101 - *Stress test qualification for discrete semiconductors*, and is suitable for use in automotive applications.

12. Package outline



13. Soldering



## 14. Revision history

Table 10. Revision history

| Document ID    | Release date                                                                                                                                                                                                         | Data sheet status  | Change notice | Supersedes     |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------------|----------------|
| BZX84J_SER v.3 | 20250227                                                                                                                                                                                                             | Product data sheet | -             | BZX84J_SER v.2 |
| Modifications: | <ul style="list-style-type: none"><li>Quick reference data and Limiting values: Values at <math>P_{ZSM}</math> improved</li><li>Characteristics: Figures adapted to newest improved versions if applicable</li></ul> |                    |               |                |
| BZX84J_SER v.2 | 20110801                                                                                                                                                                                                             | Product data sheet | -             | BZX84J_SER v.1 |
| BZX84J_SER v.1 | 20070301                                                                                                                                                                                                             | Product data sheet | -             | -              |

## 15. Legal information

### Data sheet status

| Document status [1][2]         | Product status [3] | Definition                                                                            |
|--------------------------------|--------------------|---------------------------------------------------------------------------------------|
| Objective [short] data sheet   | Development        | This document contains data from the objective specification for product development. |
| Preliminary [short] data sheet | Qualification      | This document contains data from the preliminary specification.                       |
| Product [short] data sheet     | Production         | This document contains the product specification.                                     |

- [1] Please consult the most recently issued document before initiating or completing a design.
- [2] The term 'short data sheet' is explained in section "Definitions".
- [3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the internet at <https://www.nexperia.com>.

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For more information, please visit: <http://www.nexperia.com>

For sales office addresses, please send an email to: [salesaddresses@nexperia.com](mailto:salesaddresses@nexperia.com)

Date of release: 27 February 2025