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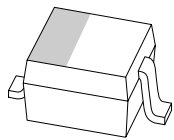
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Kind regards,

Team Nexperia



# PZUxBA series

## Single Zener diodes

Rev. 01 — 19 September 2008

Product data sheet

## 1. Product profile

### 1.1 General description

General-purpose Zener diodes in a SOD323 (SC-76) very small Surface-Mounted Device (SMD) plastic package.

### 1.2 Features

- Non-repetitive peak reverse power dissipation:  $P_{ZSM} \leq 40 \text{ W}$
- Total power dissipation:  $P_{tot} \leq 320 \text{ mW}$
- Tolerance series:  
B: approximately  $\pm 5 \%$ ;  
B1, B2, B3: approximately  $\pm 2 \%$
- Wide working voltage range:  
nominal 2.4 V to 36 V (E24 range)
- Low reverse current  $I_R$  range
- Small plastic package suitable for surface-mounted design
- AEC-Q101 qualified

### 1.3 Applications

- General regulation functions

### 1.4 Quick reference data

Table 1. Quick reference data

| Symbol    | Parameter                                     | Conditions                               | Min   | Typ | Max | Unit |
|-----------|-----------------------------------------------|------------------------------------------|-------|-----|-----|------|
| $V_F$     | forward voltage                               | $I_F = 100 \text{ mA}$                   | [1] - | -   | 1.1 | V    |
| $P_{ZSM}$ | non-repetitive peak reverse power dissipation |                                          | [2] - | -   | 40  | W    |
| $P_{tot}$ | total power dissipation                       | $T_{amb} \leq 25 \text{ }^\circ\text{C}$ | [3] - | -   | 320 | mW   |

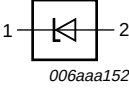
[1] Pulse test:  $t_p \leq 300 \text{ } \mu\text{s}$ ;  $\delta \leq 0.02$ .

[2]  $t_p = 100 \text{ } \mu\text{s}$ ; square wave;  $T_j = 25 \text{ }^\circ\text{C}$  prior to surge

[3] Device mounted on an FR4 Printed-Circuit Board (PCB), single-sided copper, tin-plated and standard footprint.

2. Pinning information

Table 2. Pinning

| Pin | Description | Simplified outline                                                                  | Graphic symbol                                                                      |
|-----|-------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1   | cathode     |  |  |
| 2   | anode       |                                                                                     |                                                                                     |

[1] The marking bar indicates the cathode.

3. Ordering information

Table 3. Ordering information

| Type number                     | Package |                                          |         |
|---------------------------------|---------|------------------------------------------|---------|
|                                 | Name    | Description                              | Version |
| PZU2.4BA to PZU36BA[1]          | SC-76   | plastic surface-mounted package; 2 leads | SOD323  |
| PZU2.4BA/DG to PZU36BA/DG[1][2] |         |                                          |         |

[1] The series consists of 97 types with nominal working voltages from 2.4 V to 36 V.

[2] /DG: halogen-free

## 4. Marking

Table 4. Marking codes

| Type number <sup>[1]</sup> | Marking code |    |    |    | Type number <sup>[1]</sup> | Marking code |    |    |    |
|----------------------------|--------------|----|----|----|----------------------------|--------------|----|----|----|
|                            | B            | B1 | B2 | B3 |                            | B            | B1 | B2 | B3 |
| PZU2.4*A                   | X8           | -  | -  | -  | PZU2.4*A/DG                | Y8           | -  | -  | -  |
| PZU2.7*A                   | X9           | XA | XB | -  | PZU2.7*A/DG                | Y9           | YA | YB | -  |
| PZU3.0*A                   | XT           | XU | XV | -  | PZU3.0*A/DG                | YT           | YU | YV | -  |
| PZU3.3*A                   | XW           | XX | XY | -  | PZU3.3*A/DG                | YW           | YX | YY | -  |
| PZU3.6*A                   | XZ           | MC | MD | -  | PZU3.6*A/DG                | YZ           | NC | ND | -  |
| PZU3.9*A                   | ME           | MF | MG | -  | PZU3.9*A/DG                | NE           | NF | NG | -  |
| PZU4.3*A                   | MM           | MN | MP | MR | PZU4.3*A/DG                | NM           | NN | NP | NR |
| PZU4.7*A                   | MS           | MT | MU | MV | PZU4.7*A/DG                | NS           | NT | NU | NV |
| PZU5.1*A                   | MW           | MX | MY | MZ | PZU5.1*A/DG                | NW           | NX | NY | NZ |
| PZU5.6*A                   | LF           | LG | LH | LK | PZU5.6*A/DG                | RF           | RG | RH | RK |
| PZU6.2*A                   | LL           | LM | LN | LP | PZU6.2*A/DG                | RL           | RM | RN | RP |
| PZU6.8*A                   | LR           | LS | LT | LU | PZU6.8*A/DG                | RR           | RS | RT | RU |
| PZU7.5*A                   | LV           | LW | LX | LY | PZU7.5*A/DG                | RV           | RW | RX | RY |
| PZU8.2*A                   | LZ           | CR | CS | CT | PZU8.2*A/DG                | RZ           | ER | ES | ET |
| PZU9.1*A                   | CU           | CV | CW | CX | PZU9.1*A/DG                | EU           | EV | EW | EX |
| PZU10*A                    | VA           | VB | VC | VD | PZU10*A/DG                 | WA           | WB | WC | WD |
| PZU11*A                    | VE           | VF | VG | VH | PZU11*A/DG                 | WE           | WF | WG | WH |
| PZU12*A                    | VK           | VL | VM | VN | PZU12*A/DG                 | WK           | WL | WM | WN |
| PZU13*A                    | VP           | VR | VS | VT | PZU13*A/DG                 | WP           | WR | WS | WT |
| PZU14*A                    | -            | -  | VU | -  | PZU14*A/DG                 | -            | -  | WU | -  |
| PZU15*A                    | VV           | VW | VX | VY | PZU15*A/DG                 | WV           | WW | WX | WY |
| PZU16*A                    | VZ           | X1 | X2 | X3 | PZU16*A/DG                 | WZ           | Y1 | Y2 | Y3 |
| PZU18*A                    | X4           | X5 | X6 | X7 | PZU18*A/DG                 | Y4           | Y5 | Y6 | Y7 |
| PZU20*A                    | XC           | XD | XE | XF | PZU20*A/DG                 | YC           | YD | YE | YF |
| PZU22*A                    | XG           | XH | XK | XL | PZU22*A/DG                 | YG           | YH | YK | YL |
| PZU24*A                    | XM           | XN | XP | XR | PZU24*A/DG                 | YM           | YN | YP | YR |
| PZU27*A                    | XS           | -  | -  | -  | PZU27*A/DG                 | YS           | -  | -  | -  |
| PZU30*A                    | MH           | -  | -  | -  | PZU30*A/DG                 | NH           | -  | -  | -  |
| PZU33*A                    | MK           | -  | -  | -  | PZU33*A/DG                 | NK           | -  | -  | -  |
| PZU36*A                    | ML           | -  | -  | -  | PZU36*A/DG                 | NL           | -  | -  | -  |

[1] \* = B: tolerance series B, approximately  $\pm 5\%$

\* = B1, B2, B3: tolerance series B1, B2, B3: approximately  $\pm 2\%$

## 5. Limiting values

**Table 5. Limiting values**

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

| Symbol    | Parameter                                     | Conditions                  | Min   | Max                                               | Unit |
|-----------|-----------------------------------------------|-----------------------------|-------|---------------------------------------------------|------|
| $I_F$     | forward current                               |                             | -     | 200                                               | mA   |
| $I_{ZSM}$ | non-repetitive peak reverse current           |                             | [1] - | see <a href="#">Table 8</a> and <a href="#">9</a> |      |
| $P_{ZSM}$ | non-repetitive peak reverse power dissipation |                             | [1] - | 40                                                | W    |
| $P_{tot}$ | total power dissipation                       | $T_{amb} \leq 25\text{ °C}$ | [2] - | 320                                               | mW   |
|           |                                               |                             | [3] - | 490                                               | mW   |
| $T_j$     | junction temperature                          |                             | -     | 150                                               | °C   |
| $T_{amb}$ | ambient temperature                           |                             | -55   | +150                                              | °C   |
| $T_{stg}$ | storage temperature                           |                             | -65   | +150                                              | °C   |

[1]  $t_p = 100\text{ }\mu\text{s}$ ; square wave;  $T_j = 25\text{ °C}$  prior to surge

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

[3] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode  $1\text{ cm}^2$ .

## 6. Thermal characteristics

**Table 6. Thermal characteristics**

| Symbol         | Parameter                                        | Conditions  | Min   | Typ | Max | Unit |
|----------------|--------------------------------------------------|-------------|-------|-----|-----|------|
| $R_{th(j-a)}$  | thermal resistance from junction to ambient      | in free air | [1] - | -   | 390 | K/W  |
|                |                                                  |             | [2] - | -   | 255 | K/W  |
| $R_{th(j-sp)}$ | thermal resistance from junction to solder point |             | [3] - | -   | 55  | K/W  |

[1] Device mounted on an FR4 PCB, single-sided copper, tin-plated and standard footprint.

[2] Device mounted on an FR4 PCB, single-sided copper, tin-plated, mounting pad for cathode  $1\text{ cm}^2$ .

[3] Soldering point of cathode tab.

## 7. Characteristics

**Table 7. Characteristics**

$T_j = 25\text{ °C}$  unless otherwise specified.

| Symbol | Parameter       | Conditions            | Min | Typ | Max | Unit |
|--------|-----------------|-----------------------|-----|-----|-----|------|
| $V_F$  | forward voltage |                       | [1] |     |     |      |
|        |                 | $I_F = 10\text{ mA}$  | -   | -   | 0.9 | V    |
|        |                 | $I_F = 100\text{ mA}$ | -   | -   | 1.1 | V    |

[1] Pulse test:  $t_p \leq 300\text{ }\mu\text{s}$ ;  $\delta \leq 0.02$ .

**Table 8. Characteristics per type; PZU2.4BA to PZU5.6B3A and PZU2.4BA/DG to PZU5.6B3A/DG***T<sub>J</sub> = 25 °C unless otherwise specified.*

| PZUxBA | Sel | Working voltage<br>V <sub>Z</sub> (V) |      | Differential resistance<br>r <sub>dif</sub> (Ω) |                       | Reverse current<br>I <sub>R</sub> (μA) |                    | Temperature coefficient<br>S <sub>Z</sub> (mV/K) | Diode capacitance<br>C <sub>d</sub> (pF) <sup>[1]</sup> | Non-repetitive peak reverse current<br>I <sub>ZSM</sub> (A) <sup>[2]</sup> |
|--------|-----|---------------------------------------|------|-------------------------------------------------|-----------------------|----------------------------------------|--------------------|--------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------|
|        |     | I <sub>Z</sub> = 5 mA                 |      | I <sub>Z</sub> = 0.5 mA                         | I <sub>Z</sub> = 5 mA |                                        |                    | I <sub>Z</sub> = 5 mA                            |                                                         |                                                                            |
|        |     | Min                                   | Max  | Max                                             | Max                   | Max                                    | V <sub>R</sub> (V) | Typ                                              |                                                         |                                                                            |
| 2.4    | B   | 2.3                                   | 2.6  | 1000                                            | 100                   | 50                                     | 1                  | -1.6                                             | 450                                                     | 8                                                                          |
| 2.7    | B   | 2.5                                   | 2.9  | 1000                                            | 100                   | 20                                     | 1                  | -2.0                                             | 440                                                     | 8                                                                          |
|        | B1  | 2.5                                   | 2.75 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 2.65                                  | 2.9  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 3.0    | B   | 2.8                                   | 3.2  | 1000                                            | 95                    | 10                                     | 1                  | -2.1                                             | 425                                                     | 8                                                                          |
|        | B1  | 2.8                                   | 3.05 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 2.95                                  | 3.2  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 3.3    | B   | 3.1                                   | 3.5  | 1000                                            | 95                    | 5                                      | 1                  | -2.4                                             | 410                                                     | 8                                                                          |
|        | B1  | 3.1                                   | 3.35 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 3.25                                  | 3.5  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 3.6    | B   | 3.4                                   | 3.8  | 1000                                            | 90                    | 5                                      | 1                  | -2.4                                             | 390                                                     | 8                                                                          |
|        | B1  | 3.4                                   | 3.65 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 3.55                                  | 3.8  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 3.9    | B   | 3.7                                   | 4.1  | 1000                                            | 90                    | 3                                      | 1                  | -2.5                                             | 370                                                     | 8                                                                          |
|        | B1  | 3.7                                   | 3.97 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 3.87                                  | 4.10 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 4.3    | B   | 4.01                                  | 4.48 | 1000                                            | 90                    | 3                                      | 1                  | -2.5                                             | 350                                                     | 8                                                                          |
|        | B1  | 4.01                                  | 4.21 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 4.15                                  | 4.34 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 4.28                                  | 4.48 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 4.7    | B   | 4.42                                  | 4.9  | 800                                             | 80                    | 2                                      | 1                  | -1.4                                             | 325                                                     | 8                                                                          |
|        | B1  | 4.42                                  | 4.61 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 4.55                                  | 4.75 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 4.69                                  | 4.9  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 5.1    | B   | 4.84                                  | 5.37 | 250                                             | 60                    | 2                                      | 1.5                | 0.3                                              | 300                                                     | 5.5                                                                        |
|        | B1  | 4.84                                  | 5.04 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 4.98                                  | 5.2  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 5.14                                  | 5.37 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 5.6    | B   | 5.31                                  | 5.92 | 100                                             | 40                    | 1                                      | 2.5                | 1.9                                              | 275                                                     | 5.5                                                                        |
|        | B1  | 5.31                                  | 5.55 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 5.49                                  | 5.73 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 5.67                                  | 5.92 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |

[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

**Table 9. Characteristics per type; PZU6.2BA to PZU36BA and PZU6.2BA/DG to PZU36BA/DG***T<sub>j</sub> = 25 °C unless otherwise specified.*

| PZUxBA | Sel | Working voltage<br>V <sub>Z</sub> (V) |       | Differential resistance<br>r <sub>dif</sub> (Ω) |                       | Reverse current<br>I <sub>R</sub> (nA) |                    | Temperature coefficient<br>S <sub>Z</sub> (mV/K) | Diode capacitance<br>C <sub>d</sub> (pF) <sup>[1]</sup> | Non-repetitive peak reverse current<br>I <sub>ZSM</sub> (A) <sup>[2]</sup> |
|--------|-----|---------------------------------------|-------|-------------------------------------------------|-----------------------|----------------------------------------|--------------------|--------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------|
|        |     | I <sub>Z</sub> = 5 mA                 |       | I <sub>Z</sub> = 0.5 mA                         | I <sub>Z</sub> = 5 mA |                                        |                    | I <sub>Z</sub> = 5 mA                            |                                                         |                                                                            |
|        |     | Min                                   | Max   | Max                                             | Max                   | Max                                    | V <sub>R</sub> (V) | Typ                                              | Max                                                     | Max                                                                        |
| 6.2    | B   | 5.86                                  | 6.53  | 80                                              | 30                    | 500                                    | 3                  | 2.7                                              | 250                                                     | 5.5                                                                        |
|        | B1  | 5.86                                  | 6.12  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 6.06                                  | 6.33  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 6.26                                  | 6.53  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 6.8    | B   | 6.47                                  | 7.14  | 60                                              | 20                    | 500                                    | 3.5                | 3.4                                              | 215                                                     | 5.5                                                                        |
|        | B1  | 6.47                                  | 6.73  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 6.65                                  | 6.93  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 6.86                                  | 7.14  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 7.5    | B   | 7.06                                  | 7.84  | 60                                              | 10                    | 500                                    | 4                  | 4.0                                              | 170                                                     | 3.5                                                                        |
|        | B1  | 7.06                                  | 7.36  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 7.28                                  | 7.60  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 7.52                                  | 7.84  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 8.2    | B   | 7.76                                  | 8.64  | 60                                              | 10                    | 500                                    | 5                  | 4.6                                              | 150                                                     | 3.5                                                                        |
|        | B1  | 7.76                                  | 8.1   |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 8.02                                  | 8.36  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 8.28                                  | 8.64  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 9.1    | B   | 8.56                                  | 9.55  | 60                                              | 10                    | 500                                    | 6                  | 5.5                                              | 120                                                     | 3.5                                                                        |
|        | B1  | 8.56                                  | 8.93  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 8.85                                  | 9.23  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 9.15                                  | 9.55  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 10     | B   | 9.45                                  | 10.55 | 60                                              | 10                    | 100                                    | 7                  | 6.4                                              | 110                                                     | 3.5                                                                        |
|        | B1  | 9.45                                  | 9.87  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 9.77                                  | 10.21 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 10.11                                 | 10.55 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 11     | B   | 10.44                                 | 11.56 | 60                                              | 10                    | 100                                    | 8                  | 7.4                                              | 108                                                     | 3                                                                          |
|        | B1  | 10.44                                 | 10.88 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 10.76                                 | 11.22 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 11.1                                  | 11.56 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 12     | B   | 11.42                                 | 12.6  | 80                                              | 10                    | 100                                    | 9                  | 8.4                                              | 105                                                     | 3                                                                          |
|        | B1  | 11.42                                 | 11.9  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 11.74                                 | 12.24 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 12.08                                 | 12.6  |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
| 13     | B   | 12.47                                 | 13.96 | 80                                              | 10                    | 100                                    | 10                 | 9.4                                              | 103                                                     | 2.5                                                                        |
|        | B1  | 12.47                                 | 13.03 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B2  | 12.91                                 | 13.49 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |
|        | B3  | 13.37                                 | 13.96 |                                                 |                       |                                        |                    |                                                  |                                                         |                                                                            |

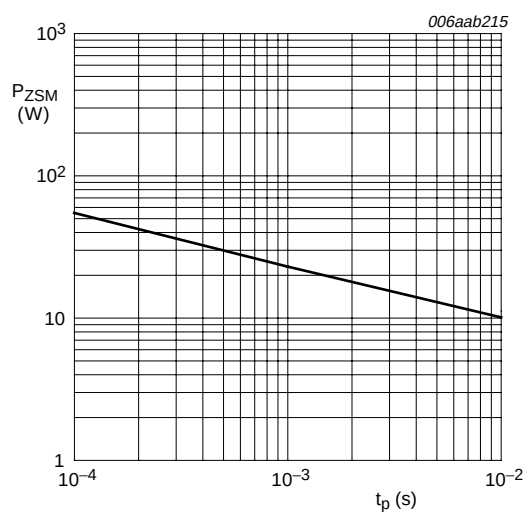
**Table 9. Characteristics per type; PZU6.2BA to PZU36BA and PZU6.2BA/DG to PZU36BA/DG ...continued**  
 $T_j = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

| PZUxBA | Sel | Working voltage<br>$V_Z$ (V) |       | Differential resistance<br>$r_{\text{dif}}$ ( $\Omega$ ) |                     | Reverse current<br>$I_R$ (nA) |           | Temperature coefficient<br>$S_Z$ (mV/K) | Diode capacitance<br>$C_d$ (pF) <sup>[1]</sup> | Non-repetitive peak reverse current<br>$I_{ZSM}$ (A) <sup>[2]</sup> |
|--------|-----|------------------------------|-------|----------------------------------------------------------|---------------------|-------------------------------|-----------|-----------------------------------------|------------------------------------------------|---------------------------------------------------------------------|
|        |     | $I_Z = 5\text{ mA}$          |       | $I_Z = 0.5\text{ mA}$                                    | $I_Z = 5\text{ mA}$ |                               |           | $I_Z = 5\text{ mA}$                     |                                                |                                                                     |
|        |     | Min                          | Max   | Max                                                      | Max                 | Max                           | $V_R$ (V) | Typ                                     | Max                                            | Max                                                                 |
| 14     | B2  | 13.70                        | 14.30 | 80                                                       | 10                  | 100                           | 11        | 10.4                                    | 101                                            | 2                                                                   |
| 15     | B   | 13.84                        | 15.52 | 80                                                       | 15                  | 50                            | 11        | 11.4                                    | 99                                             | 2                                                                   |
|        | B1  | 13.84                        | 14.46 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B2  | 14.34                        | 14.98 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B3  | 14.85                        | 15.52 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
| 16     | B   | 15.37                        | 17.09 | 80                                                       | 20                  | 50                            | 12        | 12.4                                    | 97                                             | 1.5                                                                 |
|        | B1  | 15.37                        | 16.01 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B2  | 15.85                        | 16.51 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B3  | 16.35                        | 17.09 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
| 18     | B   | 16.94                        | 19.03 | 80                                                       | 20                  | 50                            | 13        | 14.4                                    | 93                                             | 1.5                                                                 |
|        | B1  | 16.94                        | 17.7  |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B2  | 17.56                        | 18.35 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B3  | 18.21                        | 19.03 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
| 20     | B   | 18.86                        | 21.08 | 100                                                      | 20                  | 50                            | 15        | 16.4                                    | 88                                             | 1.5                                                                 |
|        | B1  | 18.86                        | 19.7  |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B2  | 19.52                        | 20.39 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B3  | 20.21                        | 21.08 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
| 22     | B   | 20.88                        | 23.17 | 100                                                      | 25                  | 50                            | 17        | 18.4                                    | 84                                             | 1.3                                                                 |
|        | B1  | 20.88                        | 21.77 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B2  | 21.54                        | 22.47 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B3  | 22.23                        | 23.17 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
| 24     | B   | 22.93                        | 25.57 | 120                                                      | 30                  | 50                            | 19        | 20.4                                    | 80                                             | 1.3                                                                 |
|        | B1  | 22.93                        | 23.96 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B2  | 23.72                        | 24.78 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
|        | B3  | 24.54                        | 25.57 |                                                          |                     |                               |           |                                         |                                                |                                                                     |
| 27     | B   | 25.1                         | 28.9  | 150                                                      | 40                  | 50                            | 21        | 23.4                                    | 73                                             | 1                                                                   |
| 30     | B   | 28                           | 32    | 200                                                      | 40                  | 50                            | 23        | 26.6                                    | 66                                             | 1                                                                   |
| 33     | B   | 31                           | 35    | 250                                                      | 40                  | 50                            | 25        | 29.7                                    | 60                                             | 0.9                                                                 |
| 36     | B   | 34                           | 38    | 300                                                      | 60                  | 50                            | 27        | 33.0                                    | 59                                             | 0.8                                                                 |

[1]  $f = 1\text{ MHz}$ ;  $V_R = 0\text{ V}$

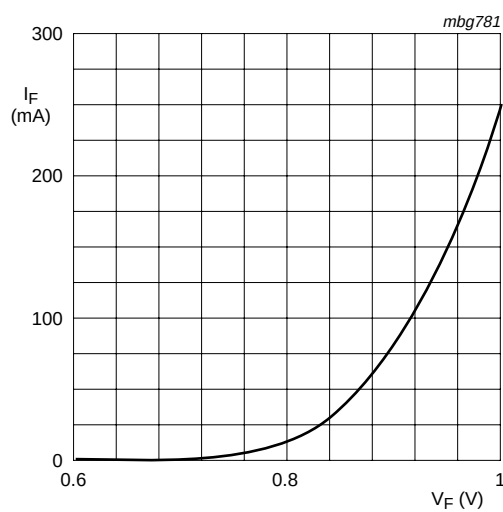
[2]  $t_p = 100\text{ }\mu\text{s}$ ; square wave;  $T_j = 25\text{ }^{\circ}\text{C}$  prior to surge





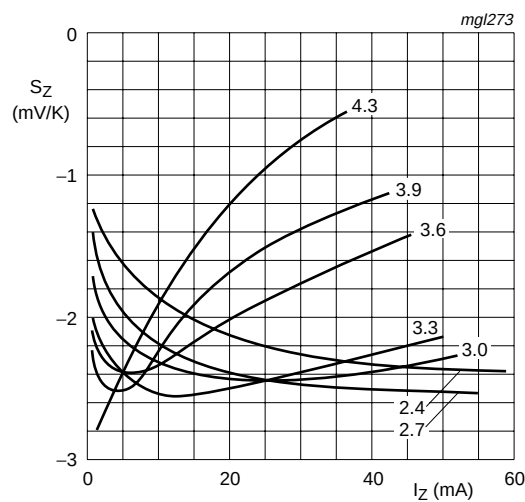
$T_j = 25\text{ }^{\circ}\text{C}$  (prior to surge)

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



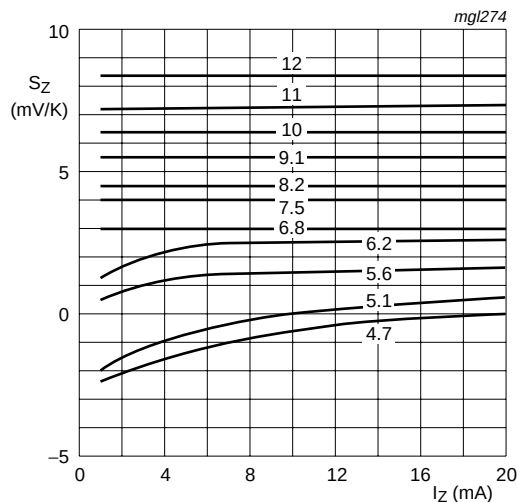
$T_j = 25\text{ }^{\circ}\text{C}$

**Fig 2.** Forward current as a function of forward voltage; typical values



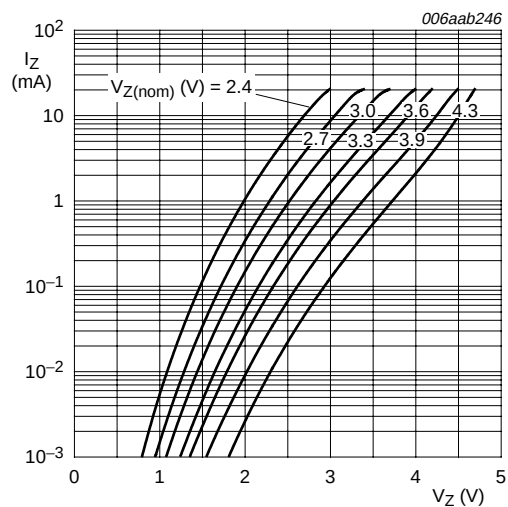
$T_j = 25\text{ }^{\circ}\text{C}$  to  $150\text{ }^{\circ}\text{C}$   
 $V_Z = 2.4\text{ V}$  to  $4.3\text{ V}$

**Fig 3.** Temperature coefficient as a function of working current; typical values



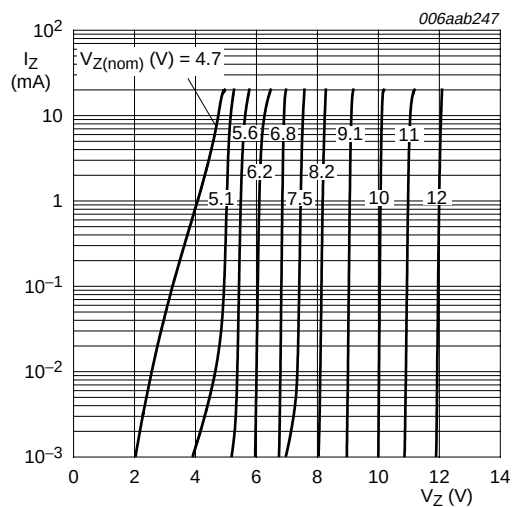
$T_j = 25\text{ }^{\circ}\text{C}$  to  $150\text{ }^{\circ}\text{C}$   
 $V_Z = 4.7\text{ V}$  to  $12\text{ V}$

**Fig 4.** Temperature coefficient as a function of working current; typical values



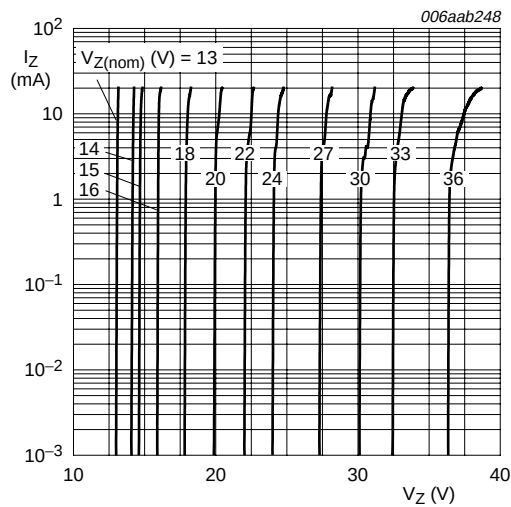
$T_j = 25\text{ }^{\circ}\text{C}$   
 $V_Z = 2.4\text{ V to }4.3\text{ V}$

Fig 5. Working current as a function of working voltage; typical values



$T_j = 25\text{ }^{\circ}\text{C}$   
 $V_Z = 4.7\text{ V to }12\text{ V}$

Fig 6. Working current as a function of working voltage; typical values



$T_j = 25\text{ }^{\circ}\text{C}$   
 $V_Z = 13\text{ V to }36\text{ V}$

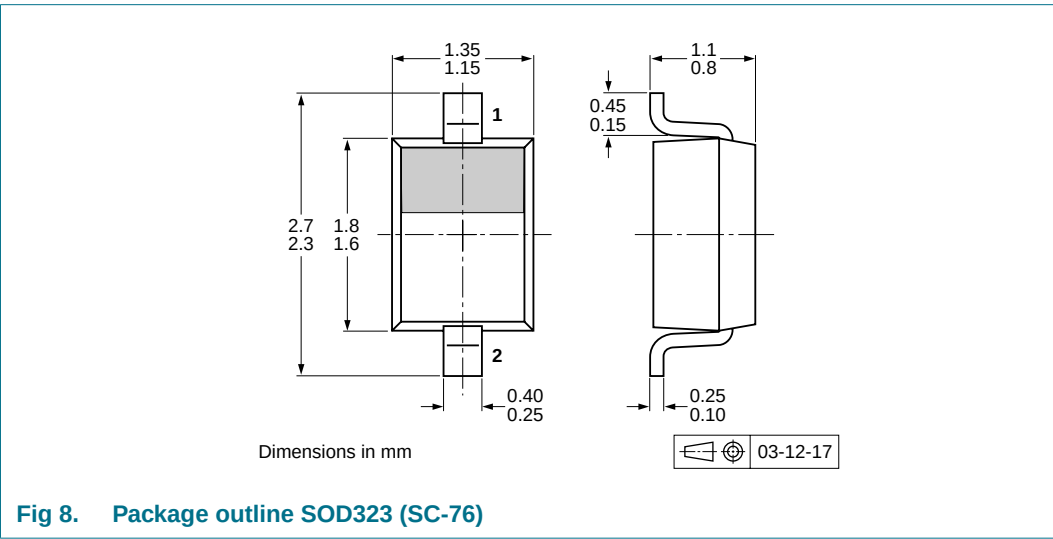
Fig 7. Working current as a function of working voltage; typical values

8. Test information

8.1 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.

9. Package outline



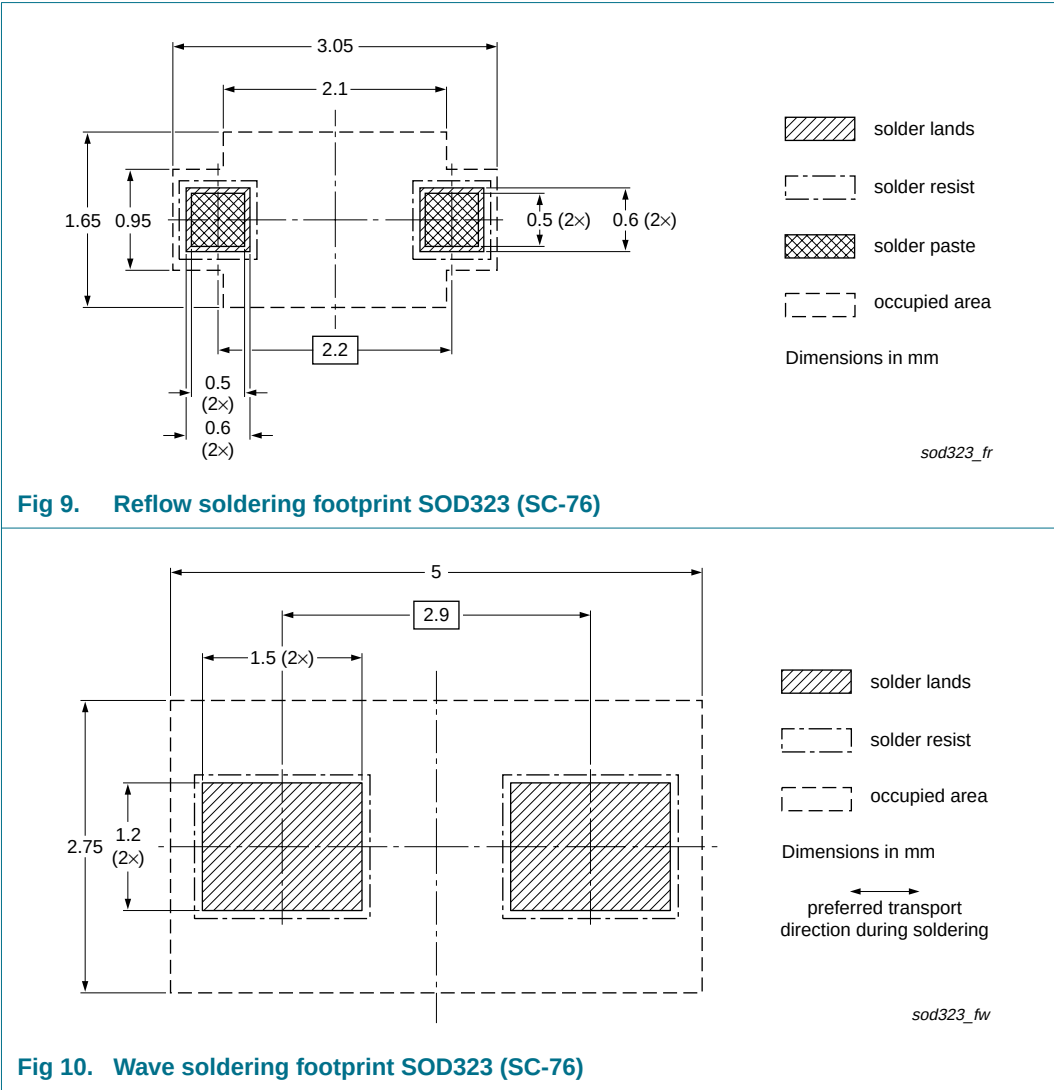
10. Packing information

**Table 10. Packing methods**  
The indicated -xxx are the last three digits of the 12NC ordering code.[\[1\]](#)

| Type number               | Package | Description                    | Packing quantity |       |
|---------------------------|---------|--------------------------------|------------------|-------|
|                           |         |                                | 3000             | 10000 |
| PZU2.4BA to PZU36BA       | SOD323  | 4 mm pitch, 8 mm tape and reel | -115             | -135  |
| PZU2.4BA/DG to PZU36BA/DG |         |                                |                  |       |

[1] For further information and the availability of packing methods, see [Section 13](#).

11. Soldering



12. Revision history

Table 11. Revision history

| Document ID  | Release date | Data sheet status  | Change notice | Supersedes |
|--------------|--------------|--------------------|---------------|------------|
| PZUXBA_SER_1 | 20080919     | Product data sheet | -             | -          |

## 13. Legal information

### 13.1 Data sheet status

| Document status <sup>[1][2]</sup> | Product status <sup>[3]</sup> | 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 URL <http://www.nxp.com>.

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## 14. Contact information

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

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

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