



# THE DATASHEET OF BZX585-B3V3,135



# BZX585 series

## Voltage regulator diodes

Rev. 5 — 11 October 2016

Product data sheet

## 1. Product profile

### 1.1 General description

General-purpose Zener diodes in an SOD523 (SC-79) ultra small and flat lead Surface-Mounted Device (SMD) plastic package.

### 1.2 Features and benefits

- Non-repetitive peak reverse power dissipation:  $\leq 40$  W
- Total power dissipation:  $\leq 300$  mW
- AEC-Q101 qualified
- Wide working voltage range: nominal 2.4 V to 75 V (E24 range)
- Two tolerance series:  $\pm 2\%$  and  $\pm 5\%$
- Low differential resistance

### 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                               | $I_F = 100$ mA [1] | -   | -   | 1.1 | V    |
| $P_{ZSM}$ | non-repetitive peak reverse power dissipation | [2]                | -   | -   | 40  | W    |

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

[2]  $t_p = 100$   $\mu$ s; square wave;  $T_J = 25$  °C before surge

## 2. Pinning information

Table 2. Pinning

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

[1] The marking bar indicates the cathode.

### 3. Ordering information

Table 3. Ordering information

| Type number                              | Package |                                          |         |
|------------------------------------------|---------|------------------------------------------|---------|
|                                          | Name    | Description                              | Version |
| BZX585-B2V4 to BZX585-C75 <sup>[1]</sup> | SC-79   | plastic surface-mounted package; 2 leads | SOD523  |

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

### 4. Marking

Table 4. Marking codes

| Type number | Marking code | Type number | Marking code | Type number | Marking code | Type number | Marking code |
|-------------|--------------|-------------|--------------|-------------|--------------|-------------|--------------|
| BZX585-B2V4 | C1           | BZX585-B15  | E0           | BZX585-C2V4 | F1           | BZX585-C15  | H0           |
| BZX585-B2V7 | C2           | BZX585-B16  | EA           | BZX585-C2V7 | F2           | BZX585-C16  | HA           |
| BZX585-B3V0 | C3           | BZX585-B18  | EB           | BZX585-C3V0 | F3           | BZX585-C18  | HB           |
| BZX585-B3V3 | C4           | BZX585-B20  | EC           | BZX585-C3V3 | F4           | BZX585-C20  | HC           |
| BZX585-B3V6 | C5           | BZX585-B22  | ED           | BZX585-C3V6 | F5           | BZX585-C22  | HD           |
| BZX585-B3V9 | C6           | BZX585-B24  | EE           | BZX585-C3V9 | F6           | BZX585-C24  | HE           |
| BZX585-B4V3 | C7           | BZX585-B27  | EF           | BZX585-C4V3 | F7           | BZX585-C27  | HF           |
| BZX585-B4V7 | C8           | BZX585-B30  | EG           | BZX585-C4V7 | F8           | BZX585-C30  | HG           |
| BZX585-B5V1 | C9           | BZX585-B33  | EH           | BZX585-C5V1 | F9           | BZX585-C33  | HH           |
| BZX585-B5V6 | C0           | BZX585-B36  | EK           | BZX585-C5V6 | F0           | BZX585-C36  | HK           |
| BZX585-B6V2 | E1           | BZX585-B39  | EL           | BZX585-C6V2 | H1           | BZX585-C39  | HL           |
| BZX585-B6V8 | E2           | BZX585-B43  | EM           | BZX585-C6V8 | H2           | BZX585-C43  | HM           |
| BZX585-B7V5 | E3           | BZX585-B47  | EN           | BZX585-C7V5 | H3           | BZX585-C47  | HN           |
| BZX585-B8V2 | E4           | BZX585-B51  | EP           | BZX585-C8V2 | H4           | BZX585-C51  | HP           |
| BZX585-B9V1 | E5           | BZX585-B56  | ER           | BZX585-C9V1 | H5           | BZX585-C56  | HR           |
| BZX585-B10  | E6           | BZX585-B62  | ES           | BZX585-C10  | H6           | BZX585-C62  | HS           |
| BZX585-B11  | E7           | BZX585-B68  | ET           | BZX585-C11  | H7           | BZX585-C68  | HT           |
| BZX585-B12  | E8           | BZX585-B75  | EU           | BZX585-C12  | H8           | BZX585-C75  | HU           |
| BZX585-B13  | E9           | -           | -            | BZX585-C13  | H9           | -           | -            |

## 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] | -   | 300                                               | mW   |
| $T_{amb}$ | ambient temperature                           |                                 | -65 | +150                                              | °C   |
| $T_j$     | junction temperature                          |                                 | -65 | +150                                              | °C   |
| $T_{stg}$ | storage temperature                           |                                 | -65 | +150                                              | °C   |

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

[2] Device mounted on an FR4 Printed-Circuit Board (PCB) with approximately 35 mm<sup>2</sup> Cu area at cathode tab.

## 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] | -   | -   | 350 | K/W  |
| $R_{th(j-sp)}$ | thermal resistance from junction to solder point | [2]             | -   | -   | 65  | K/W  |

[1] Device mounted on an FR4 Printed-Circuit Board (PCB) with approximately 35 mm<sup>2</sup> Cu area at cathode tab.

[2] 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; BZX585-B2V4 to BZX585-C24** $T_j = 25\text{ }^{\circ}\text{C}$  unless otherwise specified.

| BZX585-xxx | 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> = 1 mA                           |     | I <sub>Z</sub> = 5 mA |     |                                        |                    | I <sub>Z</sub> = 5 mA                            |      |     |                                                         |                                                                            |
|            |     | Min                                   | Max   | Typ                                             | Max | Typ                   | Max | Max                                    | V <sub>R</sub> (V) | Min                                              | Typ  | Max | Max                                                     | Max                                                                        |
| 2V4        | B   | 2.35                                  | 2.45  | 275                                             | 400 | 70                    | 100 | 50                                     | 1                  | −3.5                                             | −1.3 | 0   | 450                                                     | 6                                                                          |
|            | C   | 2.28                                  | 2.52  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 2V7        | B   | 2.65                                  | 2.75  | 300                                             | 450 | 75                    | 100 | 20                                     | 1                  | −3.5                                             | −1.4 | 0   | 440                                                     | 6                                                                          |
|            | C   | 2.57                                  | 2.84  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 3V0        | B   | 2.94                                  | 3.06  | 325                                             | 500 | 80                    | 95  | 10                                     | 1                  | −3.5                                             | −1.6 | 0   | 425                                                     | 6                                                                          |
|            | C   | 2.85                                  | 3.15  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 3V3        | B   | 3.23                                  | 3.37  | 350                                             | 500 | 85                    | 95  | 5                                      | 1                  | −3.5                                             | −1.8 | 0   | 410                                                     | 6                                                                          |
|            | C   | 3.14                                  | 3.47  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 3V6        | B   | 3.53                                  | 3.67  | 375                                             | 500 | 85                    | 90  | 5                                      | 1                  | −3.5                                             | −1.9 | 0   | 390                                                     | 6                                                                          |
|            | C   | 3.42                                  | 3.78  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 3V9        | B   | 3.82                                  | 3.98  | 400                                             | 500 | 85                    | 90  | 3                                      | 1                  | −3.5                                             | −1.9 | 0   | 370                                                     | 6                                                                          |
|            | C   | 3.71                                  | 4.10  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 4V3        | B   | 4.21                                  | 4.39  | 410                                             | 600 | 80                    | 90  | 3                                      | 1                  | −3.5                                             | −1.7 | 0   | 350                                                     | 6                                                                          |
|            | C   | 4.09                                  | 4.52  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 4V7        | B   | 4.61                                  | 4.79  | 425                                             | 500 | 50                    | 80  | 3                                      | 2                  | −3.5                                             | −1.2 | 0.2 | 325                                                     | 6                                                                          |
|            | C   | 4.47                                  | 4.94  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 5V1        | B   | 5.00                                  | 5.20  | 400                                             | 480 | 40                    | 60  | 2                                      | 2                  | −2.7                                             | −0.5 | 1.2 | 300                                                     | 6                                                                          |
|            | C   | 4.85                                  | 5.36  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 5V6        | B   | 5.49                                  | 5.71  | 80                                              | 400 | 15                    | 40  | 1                                      | 2                  | −2                                               | 1.0  | 2.5 | 275                                                     | 6                                                                          |
|            | C   | 5.32                                  | 5.88  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 6V2        | B   | 6.08                                  | 6.32  | 40                                              | 150 | 6                     | 10  | 3                                      | 4                  | 0.4                                              | 2.2  | 3.7 | 250                                                     | 6                                                                          |
|            | C   | 5.89                                  | 6.51  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 6V8        | B   | 6.66                                  | 6.94  | 30                                              | 80  | 6                     | 15  | 2                                      | 4                  | 1.2                                              | 3.0  | 4.5 | 215                                                     | 6                                                                          |
|            | C   | 6.46                                  | 7.14  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 7V5        | B   | 7.35                                  | 7.65  | 15                                              | 80  | 2                     | 10  | 1                                      | 5                  | 2.5                                              | 3.6  | 5.3 | 170                                                     | 4                                                                          |
|            | C   | 7.13                                  | 7.88  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 8V2        | B   | 8.04                                  | 8.36  | 20                                              | 80  | 2                     | 10  | 0.7                                    | 5                  | 3.2                                              | 4.3  | 6.2 | 150                                                     | 4                                                                          |
|            | C   | 7.79                                  | 8.61  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 9V1        | B   | 8.92                                  | 9.28  | 20                                              | 100 | 2                     | 10  | 0.5                                    | 6                  | 3.8                                              | 5.2  | 7   | 120                                                     | 3                                                                          |
|            | C   | 8.65                                  | 9.56  |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 10         | B   | 9.80                                  | 10.20 | 20                                              | 150 | 2                     | 10  | 0.2                                    | 7                  | 4.5                                              | 6.0  | 8   | 110                                                     | 3                                                                          |
|            | C   | 9.50                                  | 10.50 |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 11         | B   | 10.78                                 | 11.22 | 25                                              | 150 | 2                     | 10  | 0.1                                    | 8                  | 5.4                                              | 6.9  | 9   | 110                                                     | 2.5                                                                        |
|            | C   | 10.45                                 | 11.55 |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |
| 12         | B   | 11.76                                 | 12.24 | 25                                              | 150 | 2                     | 10  | 0.1                                    | 8                  | 6                                                | 7.9  | 10  | 105                                                     | 2.5                                                                        |
|            | C   | 11.40                                 | 12.60 |                                                 |     |                       |     |                                        |                    |                                                  |      |     |                                                         |                                                                            |

**Table 8. Characteristics per type; BZX585-B2V4 to BZX585-C24 ...continued** $T_j = 25\text{ °C}$  unless otherwise specified.

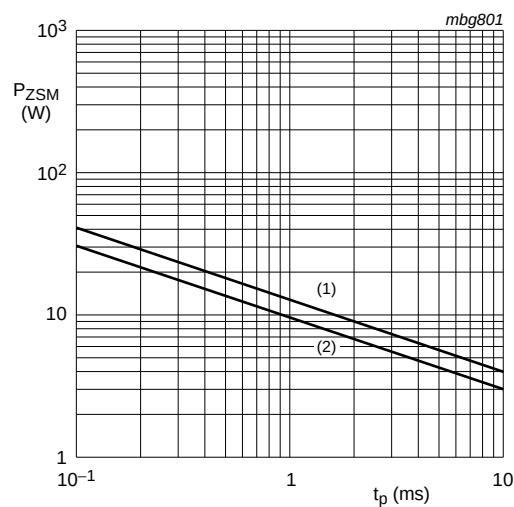
| BZX585-xxx | Sel | Working voltage<br>V <sub>Z</sub> (V) |       | Differential resistance<br>r <sub>dif</sub> (Ω) |     |                       |                    | Reverse current<br>I <sub>R</sub> (μA) |      | Temperature coefficient<br>S <sub>Z</sub> (mV/K) |      |     | Diode capacitance<br>C <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> = 1 mA                           |     | I <sub>Z</sub> = 5 mA |                    |                                        |      | I <sub>Z</sub> = 5 mA                            |      |     |                                                         |                                                                            |
| Min        | Max | Typ                                   | Max   | Typ                                             | Max | Max                   | V <sub>R</sub> (V) | Min                                    | Typ  | Max                                              | Max  | Max |                                                         |                                                                            |
| 13         | B   | 12.74                                 | 13.26 | 25                                              | 170 | 2                     | 10                 | 0.1                                    | 8    | 7                                                | 8.8  | 11  | 105                                                     | 2.5                                                                        |
|            | C   | 12.35                                 | 13.65 |                                                 |     |                       |                    |                                        |      |                                                  |      |     |                                                         |                                                                            |
| 15         | B   | 14.70                                 | 15.30 | 25                                              | 200 | 3                     | 15                 | 0.05                                   | 10.5 | 9.2                                              | 10.7 | 13  | 100                                                     | 2                                                                          |
|            | C   | 14.25                                 | 15.75 |                                                 |     |                       |                    |                                        |      |                                                  |      |     |                                                         |                                                                            |
| 16         | B   | 15.68                                 | 16.32 | 50                                              | 200 | 10                    | 40                 | 0.05                                   | 11.2 | 10.4                                             | 12.4 | 14  | 90                                                      | 1.5                                                                        |
|            | C   | 15.20                                 | 16.80 |                                                 |     |                       |                    |                                        |      |                                                  |      |     |                                                         |                                                                            |
| 18         | B   | 17.64                                 | 18.36 | 50                                              | 225 | 10                    | 45                 | 0.05                                   | 12.6 | 12.4                                             | 14.4 | 16  | 80                                                      | 1.5                                                                        |
|            | C   | 17.10                                 | 18.90 |                                                 |     |                       |                    |                                        |      |                                                  |      |     |                                                         |                                                                            |
| 20         | B   | 19.60                                 | 20.40 | 60                                              | 225 | 15                    | 55                 | 0.05                                   | 14   | 14.4                                             | 16.4 | 18  | 70                                                      | 1.5                                                                        |
|            | C   | 19.00                                 | 21.00 |                                                 |     |                       |                    |                                        |      |                                                  |      |     |                                                         |                                                                            |
| 22         | B   | 21.56                                 | 22.44 | 60                                              | 250 | 20                    | 55                 | 0.05                                   | 15.4 | 16.4                                             | 18.4 | 20  | 60                                                      | 1.25                                                                       |
|            | C   | 20.90                                 | 23.10 |                                                 |     |                       |                    |                                        |      |                                                  |      |     |                                                         |                                                                            |
| 24         | B   | 23.52                                 | 24.48 | 60                                              | 250 | 25                    | 70                 | 0.05                                   | 16.8 | 18.4                                             | 20.4 | 22  | 55                                                      | 1.25                                                                       |
|            | C   | 22.80                                 | 25.20 |                                                 |     |                       |                    |                                        |      |                                                  |      |     |                                                         |                                                                            |

[1]  $f = 1\text{ MHz}$ ;  $V_R = 0\text{ V}$ [2]  $t_p = 100\text{ }\mu\text{s}$ ; square wave;  $T_j = 25\text{ °C}$  before surge

**Table 9. Characteristics per type; BZX585-B27 to BZX585-C75** $T_j = 25\text{ °C}$  unless otherwise specified.

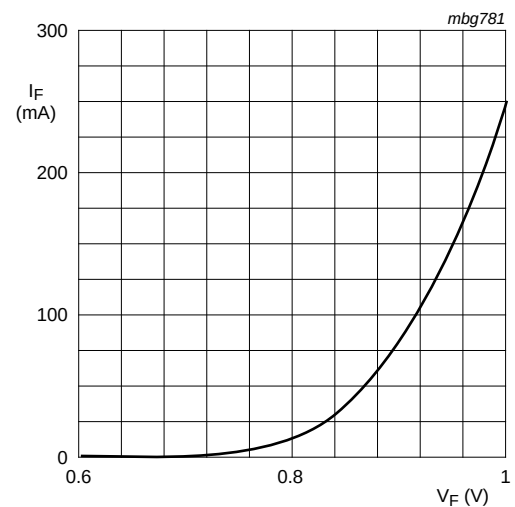
| BZX585<br>-xxx | Sel | Working<br>voltage<br>V <sub>Z</sub> (V) |       | Differential resistance<br>r <sub>dif</sub> (Ω) |     |                       |                    | Reverse<br>current<br>I <sub>R</sub> (μA) |      | Temperature<br>coefficient<br>S <sub>Z</sub> (mV/K) |      |      | Diode<br>capacitance<br>C <sub>d</sub> (pF) <sup>[1]</sup> | Non-repetitive<br>peak reverse<br>current<br>I <sub>ZSM</sub> (A) <sup>[2]</sup> |
|----------------|-----|------------------------------------------|-------|-------------------------------------------------|-----|-----------------------|--------------------|-------------------------------------------|------|-----------------------------------------------------|------|------|------------------------------------------------------------|----------------------------------------------------------------------------------|
|                |     |                                          |       |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
|                |     | I <sub>Z</sub> = 2 mA                    |       | I <sub>Z</sub> = 0.5 mA                         |     | I <sub>Z</sub> = 2 mA |                    | I <sub>Z</sub> = 2 mA                     |      |                                                     |      |      |                                                            |                                                                                  |
| Min            | Max | Typ                                      | Max   | Typ                                             | Max | Max                   | V <sub>R</sub> (V) | Min                                       | Typ  | Max                                                 | Max  | Max  |                                                            |                                                                                  |
| 27             | B   | 26.46                                    | 27.54 | 65                                              | 300 | 25                    | 80                 | 0.05                                      | 18.9 | 21.4                                                | 23.4 | 25.3 | 50                                                         | 1.0                                                                              |
|                | C   | 25.65                                    | 28.35 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 30             | B   | 29.40                                    | 30.60 | 70                                              | 300 | 30                    | 80                 | 0.05                                      | 21   | 24.4                                                | 26.6 | 29.4 | 50                                                         | 1.0                                                                              |
|                | C   | 28.50                                    | 31.50 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 33             | B   | 32.34                                    | 33.66 | 75                                              | 325 | 35                    | 80                 | 0.05                                      | 23.1 | 27.4                                                | 29.7 | 33.4 | 45                                                         | 0.9                                                                              |
|                | C   | 31.35                                    | 34.65 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 36             | B   | 35.28                                    | 36.72 | 80                                              | 350 | 35                    | 90                 | 0.05                                      | 25.2 | 30.4                                                | 33.0 | 37.4 | 45                                                         | 0.8                                                                              |
|                | C   | 34.20                                    | 37.80 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 39             | B   | 38.22                                    | 39.78 | 80                                              | 350 | 40                    | 130                | 0.05                                      | 27.3 | 33.4                                                | 36.4 | 41.2 | 45                                                         | 0.7                                                                              |
|                | C   | 37.05                                    | 40.95 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 43             | B   | 42.14                                    | 43.86 | 85                                              | 375 | 45                    | 150                | 0.05                                      | 30.1 | 37.6                                                | 41.2 | 46.6 | 40                                                         | 0.6                                                                              |
|                | C   | 40.85                                    | 45.15 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 47             | B   | 46.06                                    | 47.94 | 85                                              | 375 | 50                    | 170                | 0.05                                      | 32.9 | 42.0                                                | 46.1 | 51.8 | 40                                                         | 0.5                                                                              |
|                | C   | 44.65                                    | 49.35 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 51             | B   | 49.98                                    | 52.02 | 90                                              | 400 | 60                    | 180                | 0.05                                      | 35.7 | 46.6                                                | 51.0 | 57.2 | 40                                                         | 0.4                                                                              |
|                | C   | 48.45                                    | 53.55 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 56             | B   | 54.88                                    | 57.12 | 100                                             | 425 | 70                    | 200                | 0.05                                      | 39.2 | 52.2                                                | 57.0 | 63.8 | 40                                                         | 0.3                                                                              |
|                | C   | 53.20                                    | 58.80 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 62             | B   | 60.76                                    | 63.24 | 120                                             | 450 | 80                    | 215                | 0.05                                      | 43.4 | 58.8                                                | 64.4 | 71.6 | 35                                                         | 0.3                                                                              |
|                | C   | 58.90                                    | 65.10 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 68             | B   | 66.64                                    | 69.36 | 150                                             | 475 | 90                    | 240                | 0.05                                      | 47.6 | 65.6                                                | 71.7 | 79.8 | 35                                                         | 0.25                                                                             |
|                | C   | 64.60                                    | 71.40 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |
| 75             | B   | 73.50                                    | 76.50 | 170                                             | 500 | 95                    | 255                | 0.05                                      | 52.5 | 73.4                                                | 80.2 | 88.6 | 35                                                         | 0.2                                                                              |
|                | C   | 71.25                                    | 78.75 |                                                 |     |                       |                    |                                           |      |                                                     |      |      |                                                            |                                                                                  |

[1]  $f = 1\text{ MHz}$ ;  $V_R = 0\text{ V}$ [2]  $t_p = 100\text{ }\mu\text{s}$ ; square wave;  $T_j = 25\text{ °C}$  before surge



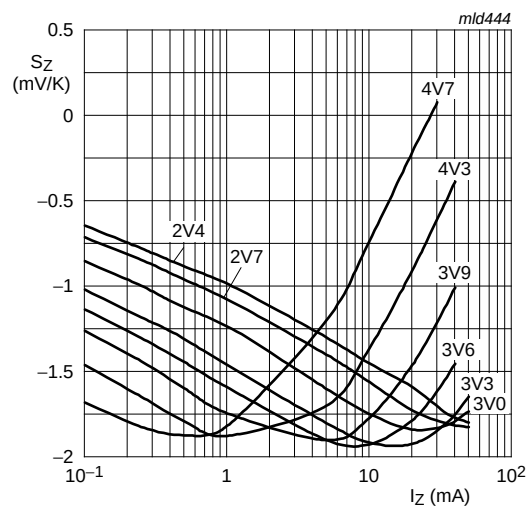
- (1)  $T_j = 25^\circ\text{C}$  (before surge)
- (2)  $T_j = 150^\circ\text{C}$  (before surge)

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



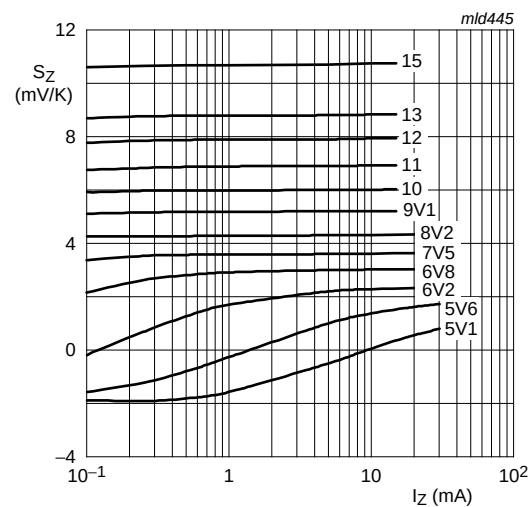
$T_j = 25^\circ\text{C}$

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



BZX585-B/C2V4 to BZX585-B/C4V7  
 $T_j = 25^\circ\text{C}$  to  $150^\circ\text{C}$

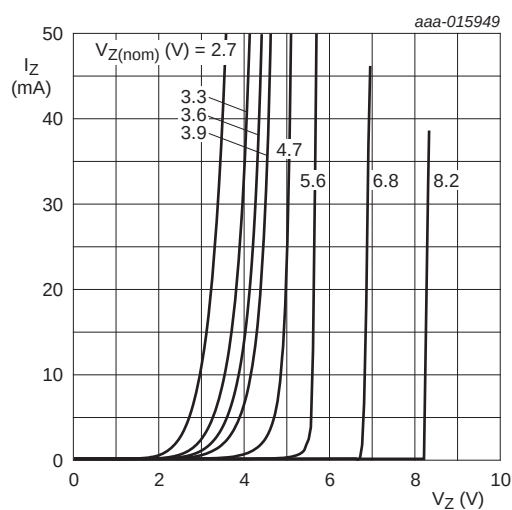
Fig 3. Temperature coefficient as a function of working current; typical values



BZX585-B/C5V1 to BZX585-B/C15  
 $T_j = 25^\circ\text{C}$  to  $150^\circ\text{C}$

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

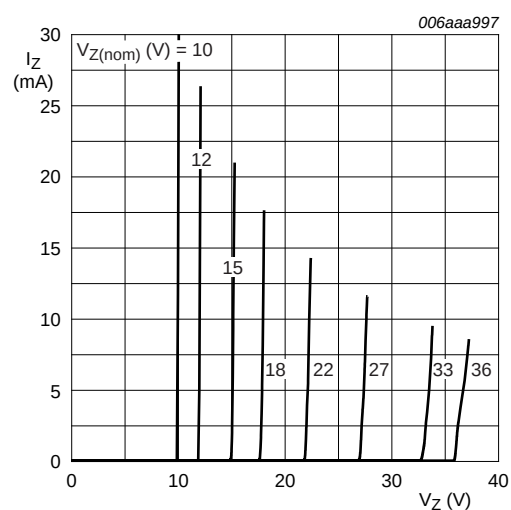




$T_j = 25\text{ }^{\circ}\text{C}$

BZX585-B/C2V7 to BZX585-B/C8V2

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



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

BZX585-B/C10 to BZX585-B/C36

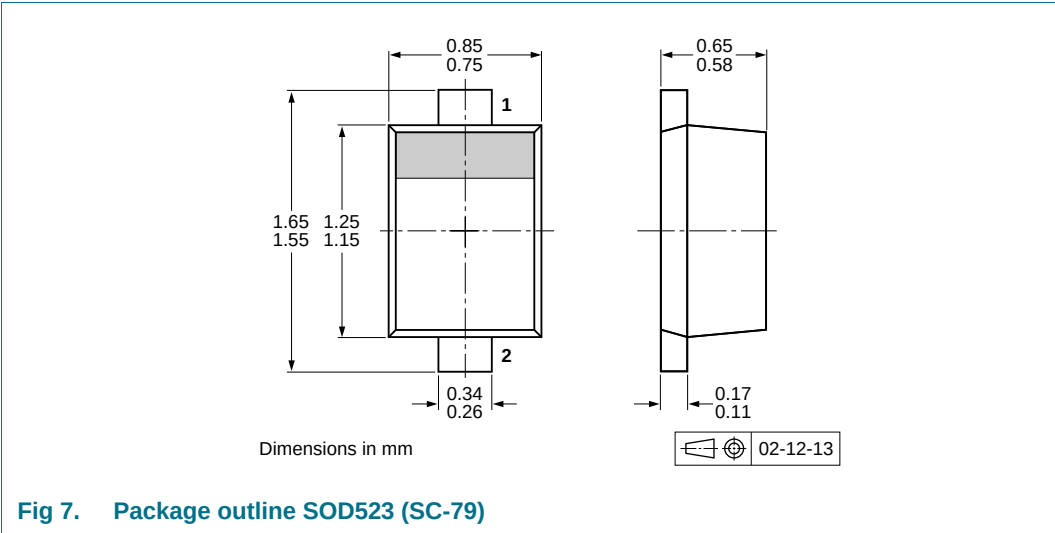
**Fig 6. Working current as a function of working voltage; typical values**

## 8. Test information

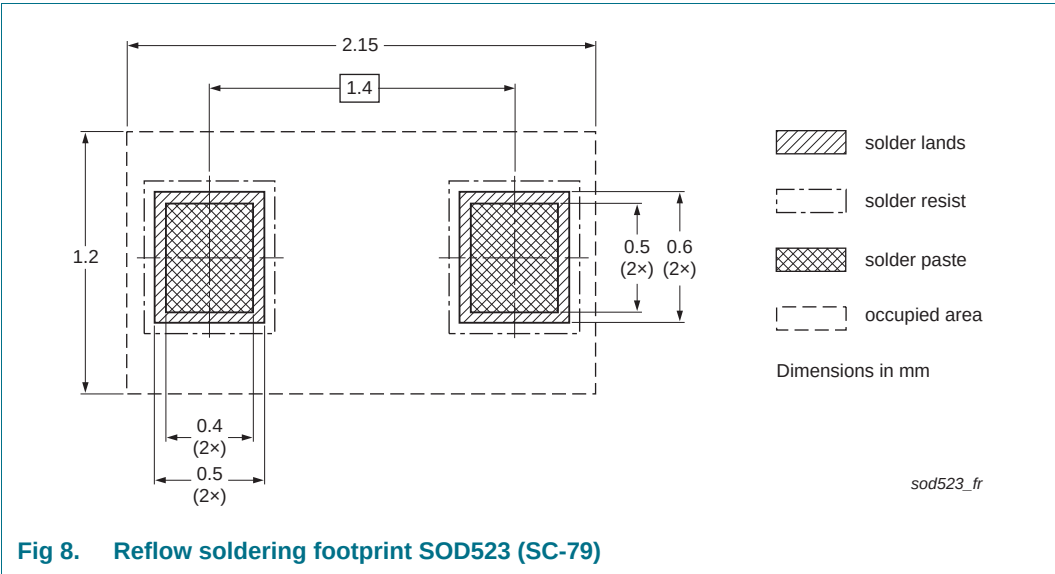
### 8.1 Quality information

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. Soldering



## 11. Revision history

Table 10. Revision history

| Document ID    | Release date                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Data sheet status     | Change notice | Supersedes     |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|---------------|----------------|
| BZX585_SER v.5 | 20161011                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Product data sheet    | -             | BZX585_SER v.4 |
| Modifications: | <ul style="list-style-type: none"><li>• The format of this document has been redesigned to comply with the new identity guidelines of NXP Semiconductors</li><li>• Legal texts have been adapted to the new company name where appropriate.</li><li>• <a href="#">Section 1 "Product profile"</a>: enhanced.</li><li>• <a href="#">Table 5</a>: <math>T_{amb}</math> added.</li><li>• <a href="#">Table 8</a> and <a href="#">Table 9</a>: updated</li><li>• <a href="#">Figure 1</a>, <a href="#">Figure 5</a> and <a href="#">Figure 6</a>: added</li><li>• <a href="#">Section 8 "Test information"</a>: added.</li><li>• <a href="#">Figure 7</a>: replaced by minimized package outline</li><li>• <a href="#">Section 10 "Soldering"</a>: added</li><li>• <a href="#">Section 12 "Legal information"</a>: updated</li></ul> |                       |               |                |
| BZX585_SER v.4 | 20040622                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Product data sheet    | -             | BZX585_SER v.3 |
| BZX585_SER v.3 | 20040326                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Product specification | -             | BZX585_SER v.2 |
| BZX585_SER v.2 | 20001020                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Product specification | -             | BZX585_SER v.1 |
| BZX585_SER v.1 | 20000606                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Product specification | -             | -              |

## 12. Legal information

### 12.1 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.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)

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