

# BZX84 series

## Voltage regulator diodes

Rev. 6 — 6 March 2014 Product data sheet

## 1. Product profile

### 1.1 General description

Low-power voltage regulator diodes in a small SOT23 (TO-236AB) Surface-Mounted Device (SMD) plastic package.

The diodes are available in the normalized E24 ±1 % (BZX84-A), ±2 % (BZX84-B) and approximately ±5 % (BZX84-C) tolerance range. The series includes 37 breakdown voltages with nominal working voltages from 2.4 V to 75 V.

### 1.2 Features and benefits

- Total power dissipation: ≤ 250 mW
- Three tolerance series: ±1 %, ±2 % and approximately ±5 %
- AEC-Q101 qualified
- Working voltage range: nominal 2.4 V to 75 V (E24 range)
- Non-repetitive peak reverse power dissipation: ≤ 40 W

### 1.3 Applications

- General regulation functions

### 1.4 Quick reference data

**Table 1. Quick reference data**

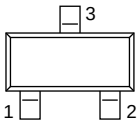
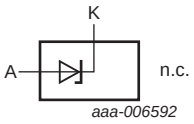
| Symbol | Parameter | Conditions | | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|---|
| $V_F$ | forward voltage | $I_F$ = 10 mA | [1] | - | - | 0.9 | V |
| $P_{tot}$ | total power dissipation | $T_{amb}$ ≤ 25 °C | [2] | - | - | 250 | mW |

[1] Pulse test: $t_p \leq 100\ \mu s$; $\delta \leq 0.02$

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

## 2. Pinning information

**Table 2. Pinning**

| Pin | Symbol | Description | Simplified outline | Graphic symbol |
|---|---|---|---|---|
| 1 | A | anode |   |   |
| 2 | n.c. | not connected | | |
| 3 | K | cathode | | |

## 3. Ordering information

**Table 3. Ordering information**

| Type number | Package | | |
|---|---|---|---|
| | Name | Description | Version |
| BZX84 series[1] | TO-236AB | plastic surface-mounted package; 3 leads | SOT23 |

[1] The series includes 37 breakdown voltages with nominal working voltages from 2.4 V to 75 V and ±1 %, ±2 % and ±5 % tolerances.

## 4. Marking

**Table 4. Marking codes**

| Type number | Marking code[1] | Type number | Marking code[1] |
|---|---|---|---|
| BZX84-A2V4 | *50 | BZX84-A18 | KF* |
| BZX84-A2V7 | *51 | BZX84-A20 | *C2 |
| BZX84-A3V0 | *52 | BZX84-A22 | KG* |
| BZX84-A3V3 | *53 | BZX84-A24 | KH* |
| BZX84-A3V6 | *C1 | BZX84-A27 | *75 |
| BZX84-A3V9 | *55 | BZX84-A30 | KJ* |
| BZX84-A4V3 | *56 | BZX84-A33 | KK* |
| BZX84-A4V7 | *57 | BZX84-A36 | *C3 |
| BZX84-A5V1 | *58 | BZX84-A39 | *C4 |
| BZX84-A5V6 | *59 | BZX84-A43 | *C5 |
| BZX84-A6V2 | *60 | BZX84-A51 | *C6 |
| BZX84-A6V8 | *61 | BZX84-A75 | *86 |
| BZX84-A7V5 | *62 | BZX84-B2V4 | *Z0 |
| BZX84-A8V2 | *63 | BZX84-B2V7 | *Z1 |
| BZX84-A9V1 | *64 | BZX84-B3V0 | *S1 |
| BZX84-A10 | *65 | BZX84-B3V3 | *S2 |
| BZX84-A11 | *04 | BZX84-B3V6 | *S3 |
| BZX84-A12 | *67 | BZX84-B3V9 | *S4 |
| BZX84-A13 | *C0 | BZX84-B4V3 | *S7 |
| BZX84-A15 | *69 | BZX84-B4V7 | *S8 |
| BZX84-A16 | KE* | BZX84-B5V1 | *R1 |


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**Table 4. Marking codes** *…continued*

| Type number | Marking code[1] | Type number | Marking code[1] |
|---|---|---|---|
| BZX84-B5V6 | *R2 | BZX84-C3V9 | *B3 |
| BZX84-B6V2 | *R5 | BZX84-C4V3 | *B6 |
| BZX84-B6V8 | *R6 | BZX84-C4V7 | Z1* |
| BZX84-B7V5 | *R8 | BZX84-C5V1 | Z2* |
| BZX84-B8V2 | *R9 | BZX84-C5V6 | Z3* |
| BZX84-B9V1 | *T1 | BZX84-C6V2 | Z4* |
| BZX84-B10 | *66 | BZX84-C6V8 | Z5* |
| BZX84-B11 | *Z6 | BZX84-C7V5 | Z6* |
| BZX84-B12 | *Z7 | BZX84-C8V2 | Z7* |
| BZX84-B13 | *Z8 | BZX84-C9V1 | Z8* |
| BZX84-B15 | *Z9 | BZX84-C10 | Z9* |
| BZX84-B16 | *70 | BZX84-C11 | Y1* |
| BZX84-B18 | *71 | BZX84-C12 | Y2* |
| BZX84-B20 | *72 | BZX84-C13 | Y3* |
| BZX84-B22 | *73 | BZX84-C15 | Y4* |
| BZX84-B24 | *74 | BZX84-C16 | Y5* |
| BZX84-B27 | *Z5 | BZX84-C18 | Y6* |
| BZX84-B30 | *Z4 | BZX84-C20 | Y7* |
| BZX84-B33 | *Y1 | BZX84-C22 | Y8* |
| BZX84-B36 | *Y2 | BZX84-C24 | Y9* |
| BZX84-B39 | *S0 | BZX84-C27 | *T2 |
| BZX84-B43 | *S5 | BZX84-C30 | *T5 |
| BZX84-B47 | *S6 | BZX84-C33 | *T6 |
| BZX84-B51 | *S9 | BZX84-C36 | *T7 |
| BZX84-B56 | *R0 | BZX84-C39 | *T8 |
| BZX84-B62 | *R3 | BZX84-C43 | *B4 |
| BZX84-B68 | *R4 | BZX84-C47 | *B5 |
| BZX84-B75 | *R7 | BZX84-C51 | *B7 |
| BZX84-C2V4 | *T3 | BZX84-C56 | *B8 |
| BZX84-C2V7 | *T4 | BZX84-C62 | *B9 |
| BZX84-C3V0 | *T9 | BZX84-C68 | *B0 |
| BZX84-C3V3 | *B1 | BZX84-C75 | *A1 |
| BZX84-C3V6 | *B2 | - | - |

[1] * = placeholder for manufacturing site code


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# 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 |
| $P_{ZSM}$ | non-repetitive peak reverse power dissipation | [1] | - | 40 | W |
| $P_{tot}$ | total power dissipation | $T_{amb} \leq 25$ °C [2] | - | 250 | mW |
| $T_{amb}$ | ambient temperature | | - | 150 | °C |
| $T_{stg}$ | storage temperature | | −55 | +150 | °C |
| $T_j$ | junction temperature | | −65 | +150 | °C |

[1] $t_p = 100$ μs; square wave; $T_j = 25$ °C before surge

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

# 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] | - | - | 500 | K/W |
| $R_{th(j-sp)}$ | thermal resistance from junction to solder point | [2] | - | - | 330 | K/W |

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

[2] Soldering point of cathode tab.

# 7. Characteristics

**Table 7. Characteristics**

*$T_j = 25$ °C unless otherwise specified.*

| Symbol | Parameter | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| $V_F$ | forward voltage | $I_F = 10$ mA [1] | - | - | 0.9 | V |

[1] Pulse test: $t_p \leq 100$ μs; $\delta \leq 0.02$


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**Table 8. Characteristics per type; BZX84-A2V4 to BZX84-C24**

*$T_j$ = 25 °C unless otherwise specified.*

| BZX84-xxx | Sel | Working voltage $V_Z$ (V) | | Differential resistance $r_{dif}$ (Ω) | | | | Reverse current $I_R$ (μA) | | Temperature coefficient $S_Z$ (mV/K) | | | Diode capacitance $C_d$ (pF)[1] | Non-repetitive peak reverse current $I_{ZSM}$ (A)[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_Z$ = 5 mA | | $I_Z$ = 1 mA | | $I_Z$ = 5 mA | | | | $I_Z$ = 5 mA | | | | |
| | | Min | Max | Typ | Max | Typ | Max | Max | $V_R$ (V) | Min | Typ | Max | Max | Max |
| 2V4 | A | 2.37 | 2.43 | 275 | 600 | 70 | 100 | 50 | 1 | −3.5 | −1.6 | 0 | 450 | 6.0 |
| | B | 2.35 | 2.45 | | | | | | | | | | | |
| | C | 2.2 | 2.6 | | | | | | | | | | | |
| 2V7 | A | 2.67 | 2.73 | 300 | 600 | 75 | 100 | 20 | 1 | −3.5 | −2.0 | 0 | 450 | 6.0 |
| | B | 2.65 | 2.75 | | | | | | | | | | | |
| | C | 2.5 | 2.9 | | | | | | | | | | | |
| 3V0 | A | 2.97 | 3.03 | 325 | 600 | 80 | 95 | 10 | 1 | −3.5 | −2.1 | 0 | 450 | 6.0 |
| | B | 2.94 | 3.06 | | | | | | | | | | | |
| | C | 2.8 | 3.2 | | | | | | | | | | | |
| 3V3 | A | 3.26 | 3.34 | 350 | 600 | 85 | 95 | 5 | 1 | −3.5 | −2.4 | 0 | 450 | 6.0 |
| | B | 3.23 | 3.37 | | | | | | | | | | | |
| | C | 3.1 | 3.5 | | | | | | | | | | | |
| 3V6 | A | 3.56 | 3.64 | 375 | 600 | 85 | 90 | 5 | 1 | −3.5 | −2.4 | 0 | 450 | 6.0 |
| | B | 3.53 | 3.67 | | | | | | | | | | | |
| | C | 3.4 | 3.8 | | | | | | | | | | | |
| 3V9 | A | 3.86 | 3.94 | 400 | 600 | 85 | 90 | 3 | 1 | −3.5 | −2.5 | 0 | 450 | 6.0 |
| | B | 3.82 | 3.98 | | | | | | | | | | | |
| | C | 3.7 | 4.1 | | | | | | | | | | | |
| 4V3 | A | 4.25 | 4.35 | 410 | 600 | 80 | 90 | 3 | 1 | −3.5 | −2.5 | 0 | 450 | 6.0 |
| | B | 4.21 | 4.39 | | | | | | | | | | | |
| | C | 4.0 | 4.6 | | | | | | | | | | | |
| 4V7 | A | 4.65 | 4.75 | 425 | 500 | 50 | 80 | 3 | 2 | −3.5 | −1.4 | 0.2 | 300 | 6.0 |
| | B | 4.61 | 4.79 | | | | | | | | | | | |
| | C | 4.4 | 5.0 | | | | | | | | | | | |
| 5V1 | A | 5.04 | 5.16 | 400 | 480 | 40 | 60 | 2 | 2 | −2.7 | −0.8 | 1.2 | 300 | 6.0 |
| | B | 5.0 | 5.2 | | | | | | | | | | | |
| | C | 4.8 | 5.4 | | | | | | | | | | | |
| 5V6 | A | 5.54 | 5.66 | 80 | 400 | 15 | 40 | 1 | 2 | −2.0 | 1.2 | 2.5 | 300 | 6.0 |
| | B | 5.49 | 5.71 | | | | | | | | | | | |
| | C | 5.2 | 6.0 | | | | | | | | | | | |
| 6V2 | A | 6.13 | 6.27 | 40 | 150 | 6 | 10 | 3 | 4 | 0.4 | 2.3 | 3.7 | 200 | 6.0 |
| | B | 6.08 | 6.32 | | | | | | | | | | | |
| | C | 5.8 | 6.6 | | | | | | | | | | | |
| 6V8 | A | 6.73 | 6.87 | 30 | 80 | 6 | 15 | 2 | 4 | 1.2 | 3.0 | 4.5 | 200 | 6.0 |
| | B | 6.66 | 6.94 | | | | | | | | | | | |
| | C | 6.4 | 7.2 | | | | | | | | | | | |


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**Table 8. Characteristics per type; BZX84-A2V4 to BZX84-C24** *…continued*

*$T_j$ = 25 °C unless otherwise specified.*

| BZX84-xxx | Sel | Working voltage $V_Z$ (V) | | Differential resistance $r_{dif}$ (Ω) | | | | Reverse current $I_R$ (μA) | | Temperature coefficient $S_Z$ (mV/K) | | | Diode capacitance $C_d$ (pF)[1] | Non-repetitive peak reverse current $I_{ZSM}$ (A)[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_Z$ = 5 mA | | $I_Z$ = 1 mA | | $I_Z$ = 5 mA | | | | $I_Z$ = 5 mA | | | | |
| | | Min | Max | Typ | Max | Typ | Max | Max | $V_R$ (V) | Min | Typ | Max | Max | Max |
| 7V5 | A | 7.42 | 7.58 | 30 | 80 | 6 | 15 | 1 | 5 | 2.5 | 4.0 | 5.3 | 150 | 4.0 |
| | B | 7.35 | 7.65 | | | | | | | | | | | |
| | C | 7.0 | 7.9 | | | | | | | | | | | |
| 8V2 | A | 8.11 | 8.29 | 40 | 80 | 6 | 15 | 0.7 | 5 | 3.2 | 4.6 | 6.2 | 150 | 4.0 |
| | B | 8.04 | 8.36 | | | | | | | | | | | |
| | C | 7.7 | 8.7 | | | | | | | | | | | |
| 9V1 | A | 9 | 9.2 | 40 | 100 | 6 | 15 | 0.5 | 6 | 3.8 | 5.5 | 7.0 | 150 | 3.0 |
| | B | 8.92 | 9.28 | | | | | | | | | | | |
| | C | 8.5 | 9.6 | | | | | | | | | | | |
| 10 | A | 9.9 | 10.1 | 50 | 150 | 8 | 20 | 0.2 | 7 | 4.5 | 6.4 | 8.0 | 90 | 3.0 |
| | B | 9.8 | 10.2 | | | | | | | | | | | |
| | C | 9.4 | 10.6 | | | | | | | | | | | |
| 11 | A | 10.8 | 11.11 | 50 | 150 | 10 | 20 | 0.1 | 8 | 5.4 | 7.4 | 9.0 | 85 | 2.5 |
| | B | 10.8 | 11.2 | | | | | | | | | | | |
| | C | 10.4 | 11.6 | | | | | | | | | | | |
| 12 | A | 11.88 | 12.12 | 50 | 150 | 10 | 25 | 0.1 | 8 | 6.0 | 8.4 | 10.0 | 85 | 2.5 |
| | B | 11.8 | 12.2 | | | | | | | | | | | |
| | C | 11.4 | 12.7 | | | | | | | | | | | |
| 13 | A | 12.87 | 13.13 | 50 | 170 | 10 | 30 | 0.1 | 8 | 7.0 | 9.4 | 11.0 | 80 | 2.5 |
| | B | 12.7 | 13.3 | | | | | | | | | | | |
| | C | 12.4 | 14.1 | | | | | | | | | | | |
| 15 | A | 14.85 | 15.15 | 50 | 200 | 10 | 30 | 0.05 | 10.5 | 9.2 | 11.4 | 13.0 | 75 | 2.0 |
| | B | 14.7 | 15.3 | | | | | | | | | | | |
| | C | 13.8 | 15.6 | | | | | | | | | | | |
| 16 | A | 15.84 | 16.16 | 50 | 200 | 10 | 40 | 0.05 | 11.2 | 10.4 | 12.4 | 14.0 | 75 | 1.5 |
| | B | 15.7 | 16.3 | | | | | | | | | | | |
| | C | 15.3 | 17.1 | | | | | | | | | | | |
| 18 | A | 17.82 | 18.18 | 50 | 225 | 10 | 45 | 0.05 | 12.6 | 12.4 | 14.4 | 16.0 | 70 | 1.5 |
| | B | 17.6 | 18.4 | | | | | | | | | | | |
| | C | 16.8 | 19.1 | | | | | | | | | | | |
| 20 | A | 19.8 | 20.2 | 60 | 225 | 15 | 55 | 0.05 | 14 | 14.4 | 16.4 | 18.0 | 60 | 1.5 |
| | B | 19.6 | 20.4 | | | | | | | | | | | |
| | C | 18.8 | 21.2 | | | | | | | | | | | |
| 22 | A | 21.78 | 22.22 | 60 | 250 | 20 | 55 | 0.05 | 15.4 | 16.4 | 18.4 | 20.0 | 60 | 1.25 |
| | B | 21.6 | 22.4 | | | | | | | | | | | |
| | C | 20.8 | 23.3 | | | | | | | | | | | |


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**Table 8. Characteristics per type; BZX84-A2V4 to BZX84-C24** *…continued*

*$T_j$ = 25 °C unless otherwise specified.*

| BZX84-xxx | Sel | Working voltage $V_Z$ (V) | | Differential resistance $r_{dif}$ (Ω) | | | | Reverse current $I_R$ (μA) | | Temperature coefficient $S_Z$ (mV/K) | | | Diode capacitance $C_d$ (pF)[1] | Non-repetitive peak reverse current $I_{ZSM}$ (A)[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_Z$ = 5 mA | | $I_Z$ = 1 mA | | $I_Z$ = 5 mA | | | | $I_Z$ = 5 mA | | | | |
| | | Min | Max | Typ | Max | Typ | Max | Max | $V_R$ (V) | Min | Typ | Max | Max | Max |
| 24 | A | 23.76 | 24.24 | 60 | 250 | 25 | 70 | 0.05 | 16.8 | 18.4 | 20.4 | 22.0 | 55 | 1.25 |
| | B | 23.5 | 24.5 | | | | | | | | | | | |
| | C | 22.8 | 25.6 | | | | | | | | | | | |

[1] f = 1 MHz; $V_R$ = 0 V

[2] $t_p$ = 100 μs; square wave; $T_j$ = 25 °C before surge

**Table 9. Characteristics per type; BZX84-A27 to BZX84-C75**

*$T_j$ = 25 °C unless otherwise specified.*

| BZX84-xxx | Sel | Working voltage $V_Z$ (V) | | Differential resistance $r_{dif}$ (Ω) | | | | Reverse current $I_R$ (μA) | | Temperature coefficient $S_Z$ (mV/K) | | | Diode capacitance $C_d$ (pF)[1] | Non-repetitive peak reverse current $I_{ZSM}$ (A)[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_Z$ = 2 mA | | $I_Z$ = 0.5 mA | | $I_Z$ = 2 mA | | | | $I_Z$ = 2 mA | | | | |
| | | Min | Max | Typ | Max | Typ | Max | Max | $V_R$ (V) | Min | Typ | Max | Max | Max |
| 27 | A | 26.73 | 27.27 | 65 | 300 | 25 | 80 | 0.05 | 18.9 | 21.4 | 23.4 | 25.3 | 50 | 1.0 |
| | B | 26.5 | 27.5 | | | | | | | | | | | |
| | C | 25.1 | 28.9 | | | | | | | | | | | |
| 30 | A | 29.7 | 30.30 | 70 | 300 | 30 | 80 | 0.05 | 21 | 24.4 | 26.6 | 29.4 | 50 | 1.0 |
| | B | 29.4 | 30.6 | | | | | | | | | | | |
| | C | 28.0 | 32.0 | | | | | | | | | | | |
| 33 | A | 32.67 | 33.33 | 75 | 325 | 35 | 80 | 0.05 | 23.1 | 27.4 | 29.7 | 33.4 | 45 | 0.9 |
| | B | 32.3 | 33.7 | | | | | | | | | | | |
| | C | 31.0 | 35.0 | | | | | | | | | | | |
| 36 | A | 35.64 | 36.36 | 80 | 350 | 35 | 90 | 0.05 | 25.2 | 30.4 | 33.0 | 37.4 | 45 | 0.8 |
| | B | 35.3 | 36.7 | | | | | | | | | | | |
| | C | 34.0 | 38.0 | | | | | | | | | | | |
| 39 | A | 38.61 | 39.39 | 80 | 350 | 40 | 130 | 0.05 | 27.3 | 33.4 | 36.4 | 41.2 | 45 | 0.7 |
| | B | 38.2 | 39.8 | | | | | | | | | | | |
| | C | 37.0 | 41.0 | | | | | | | | | | | |
| 43 | A | 42.57 | 43.43 | 85 | 375 | 45 | 150 | 0.05 | 30.1 | 37.6 | 41.2 | 46.6 | 40 | 0.6 |
| | B | 42.1 | 43.9 | | | | | | | | | | | |
| | C | 40.0 | 46.0 | | | | | | | | | | | |
| 47 | B | 46.1 | 47.9 | 85 | 375 | 50 | 170 | 0.05 | 32.9 | 42.0 | 46.1 | 51.8 | 40 | 0.5 |
| | C | 44.0 | 50.0 | | | | | | | | | | | |
| 51 | A | 50.49 | 51.51 | 90 | 400 | 60 | 180 | 0.05 | 35.7 | 46.6 | 51.0 | 57.2 | 40 | 0.4 |
| | B | 50.0 | 52.0 | | | | | | | | | | | |
| | C | 48.0 | 54.0 | | | | | | | | | | | |


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**Table 9. Characteristics per type; BZX84-A27 to BZX84-C75** *…continued*

*$T_j$ = 25 °C unless otherwise specified.*

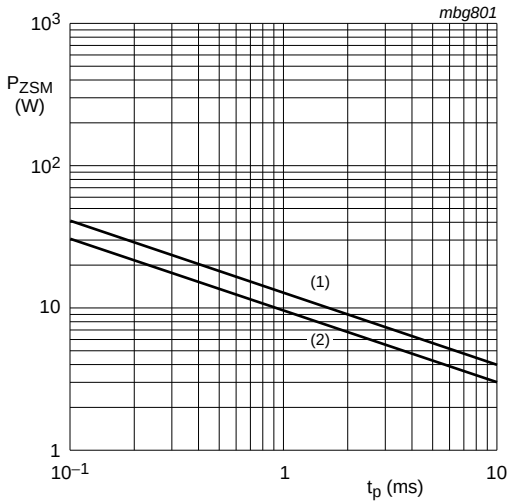
| BZX84-xxx | Sel | Working voltage $V_Z$ (V) | | Differential resistance $r_{dif}$ (Ω) | | | | Reverse current $I_R$ (μA) | | Temperature coefficient $S_Z$ (mV/K) | | | Diode capacitance $C_d$ (pF)[1] | Non-repetitive peak reverse current $I_{ZSM}$ (A)[2] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $I_Z$ = 2 mA | | $I_Z$ = 0.5 mA | | $I_Z$ = 2 mA | | | | $I_Z$ = 2 mA | | | | |
| | | Min | Max | Typ | Max | Typ | Max | Max | $V_R$ (V) | Min | Typ | Max | Max | Max |
| 56 | B | 54.9 | 57.1 | 100 | 425 | 70 | 200 | 0.05 | 39.2 | 52.2 | 57.0 | 63.8 | 40 | 0.3 |
| | C | 52.0 | 60.0 | | | | | | | | | | | |
| 62 | B | 60.8 | 63.2 | 120 | 450 | 80 | 215 | 0.05 | 43.4 | 58.8 | 64.4 | 71.6 | 35 | 0.3 |
| | C | 58.0 | 66.0 | | | | | | | | | | | |
| 68 | B | 66.6 | 69.4 | 150 | 475 | 90 | 240 | 0.05 | 47.6 | 65.6 | 71.7 | 79.8 | 35 | 0.25 |
| | C | 64.0 | 72.0 | | | | | | | | | | | |
| 75 | A | 74.25 | 75.75 | 170 | 500 | 95 | 255 | 0.05 | 52.5 | 73.4 | 80.2 | 88.6 | 35 | 0.20 |
| | B | 73.5 | 76.5 | | | | | | | | | | | |
| | C | 70.0 | 79.0 | | | | | | | | | | | |

[1] f = 1 MHz; $V_R$ = 0 V

[2] $t_p$ = 100 μs; square wave; $T_j$ = 25 °C before surge


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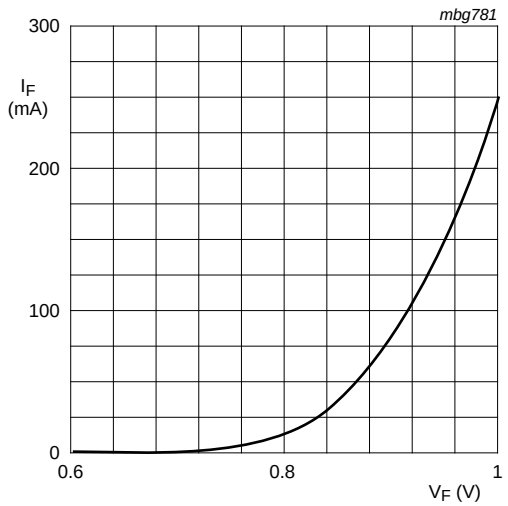
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(1) $T_j$ = 25 °C (before surge)

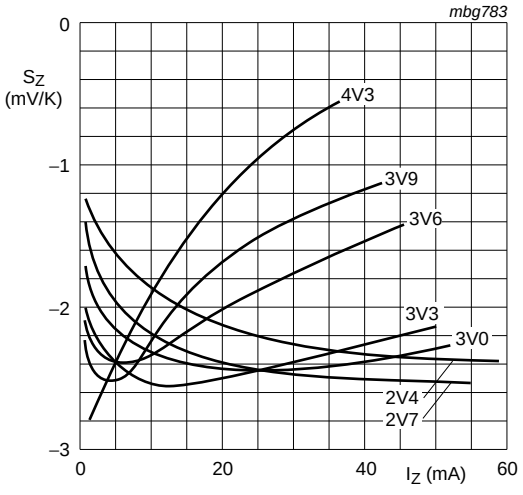
(2) $T_j$ = 150 °C (before surge)

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




$T_j$ = 25 °C

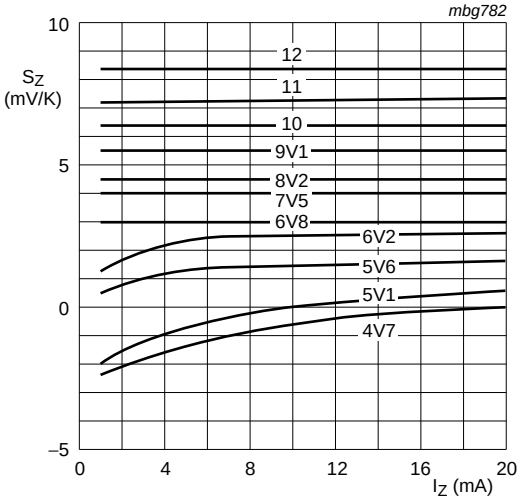
**Fig 2. Forward current as a function of forward voltage; typical values**




BZX84-A/B/C2V4 to BZX84-A/B/C4V3

$T_j$ = 25 °C to 150 °C

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



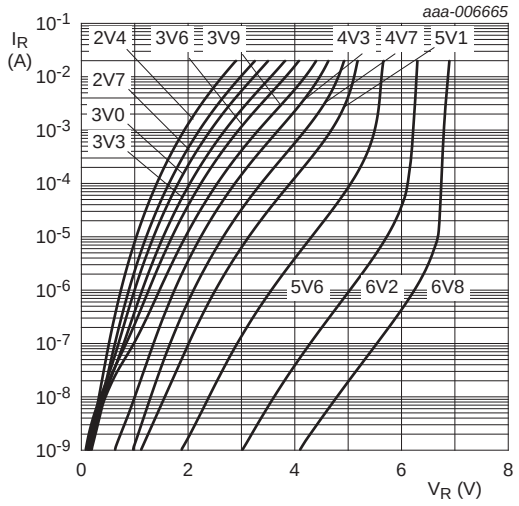

BZX84-A/B/C4V7 to BZX84-A/B/C12

$T_j$ = 25 °C to 150 °C

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


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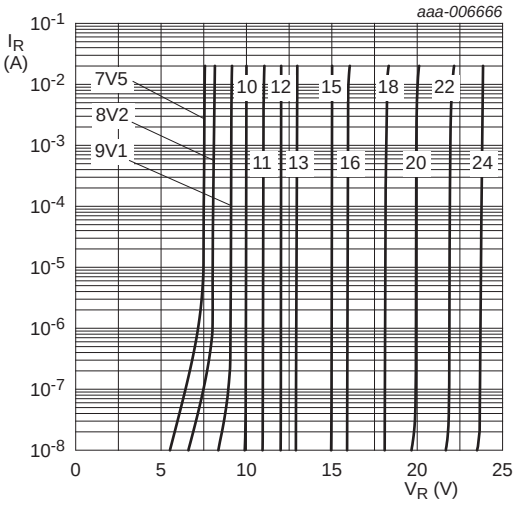
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BZX84-A/B/C2V4 to BZX84-A/B/C6V8

$T_{amb}$ = 25 °C

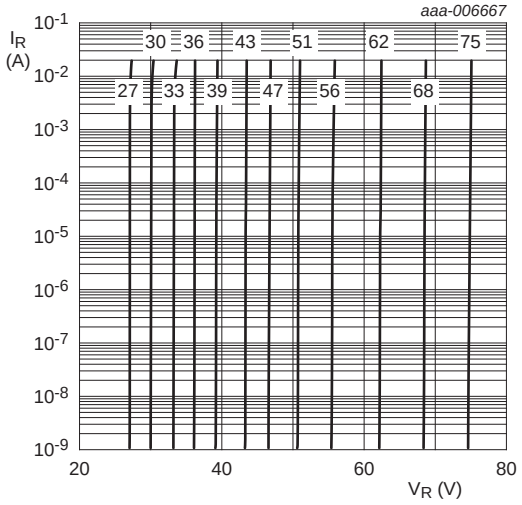
**Fig 5. Reverse current as a function of reverse voltage; typical values**




BZX84-A/B/C7V5 to BZX84-A/B/C24

$T_{amb}$ = 25 °C

**Fig 6. Reverse current as a function of reverse voltage; typical values**




BZX84-A/B/C27 to BZX84-A/B/C75

$T_{amb}$ = 25 °C

**Fig 7. Reverse current as a function of reverse 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.


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## 9. Package outline

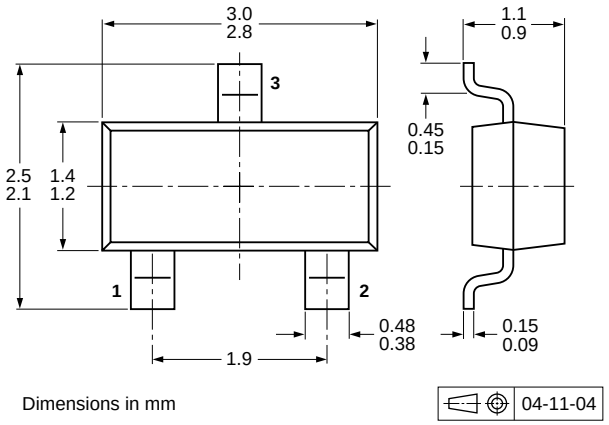



**Fig 8. Package outline SOT23 (TO-236AB)**

## 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 |
| BZX84 series[2] | SOT23 (TO-236AB) | 4 mm pitch, 8 mm tape and reel | -215 | -235 |

[1] For further information and the availability of packing methods, see Section 14.

[2] The series includes 37 breakdown voltages with nominal working voltages from 2.4 V to 75 V and ±1 %, ±2 % and ±5 % tolerances.


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## 11. Soldering

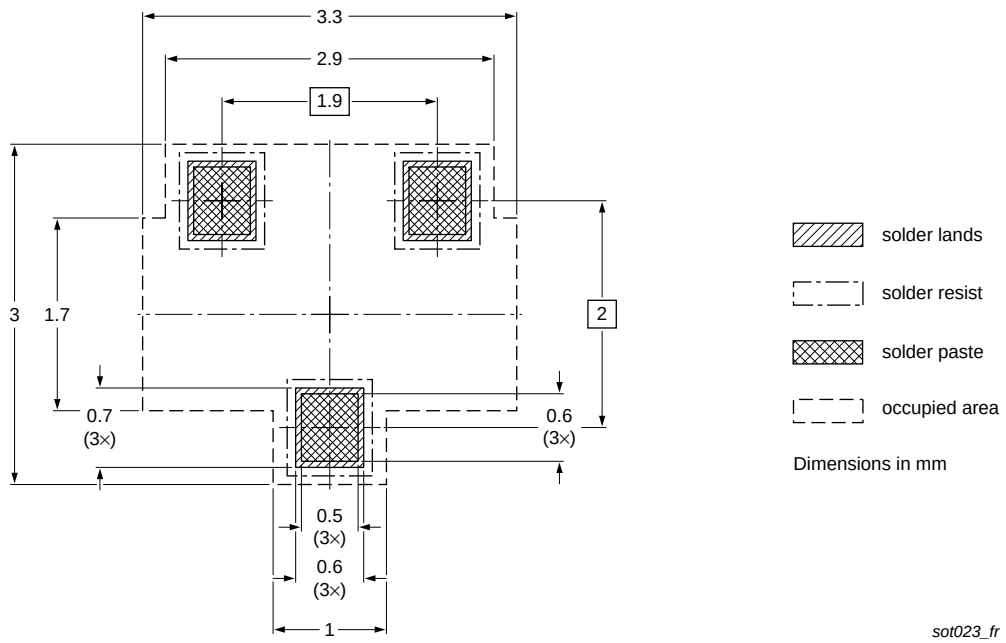



**Fig 9. Reflow soldering footprint SOT23 (TO-236AB)**

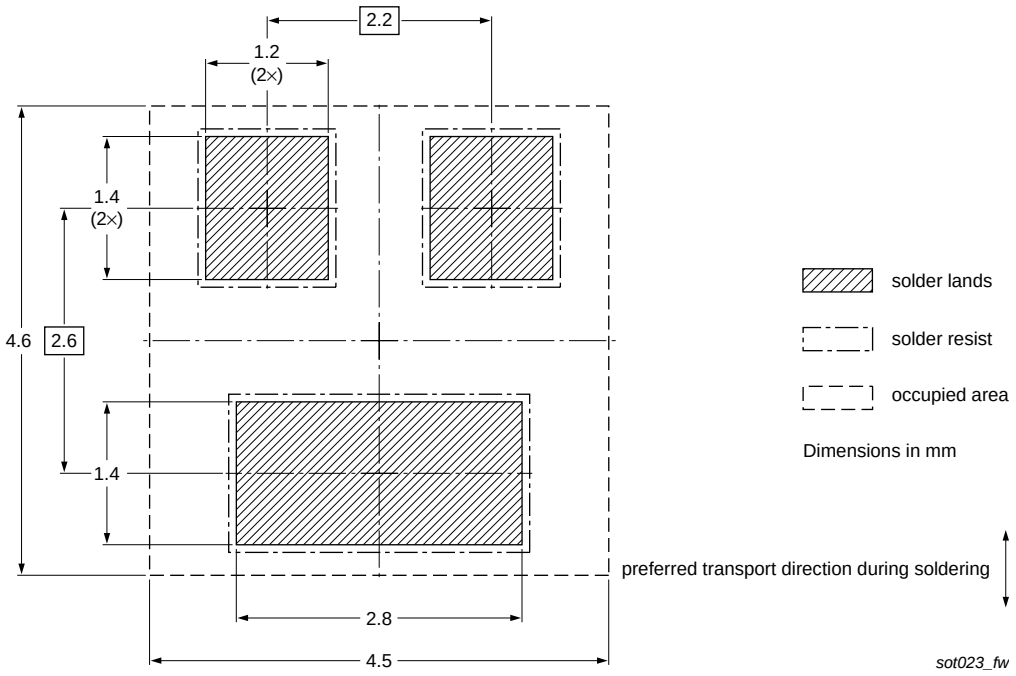



**Fig 10. Wave soldering footprint SOT23 (TO-236AB)**


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## 12. Revision history

**Table 11. Revision history**

| Document ID | Release date | Data sheet status | Change notice | Supersedes |
|---|---|---|---|---|
| BZX84_SER v.6 | 20140306 | Product data sheet | - | BZX84_SER v.5 |
| Modifications: | • Descriptive title of the document corrected | | | |
| BZX84_SER v.5 | 20130918 | Product data sheet | - | BZX84_SER v.4 |
| BZX84_SER v.4 | 20130322 | Product data sheet | - | BZX84_SERIES v.3 |
| BZX84_SERIES v.3 | 20030410 | Product data sheet | - | BZX84 v.2 |
| BZX84 v.2 | 19990518 | Product specification | - | BZX84 v.1 |
| BZX84 v.1 | 19960426 | Product specification | - | - |


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# 13. Legal information

## 13.1 Data sheet status

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

[1] Please consult the most recently issued document before initiating or completing a design.

[2] The term 'short data sheet' is explained in section "Definitions".

[3] The product status of device(s) described in this document may have changed since this document was published and may differ in case of multiple devices. The latest product status information is available on the Internet at URL http://www.nxp.com.

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