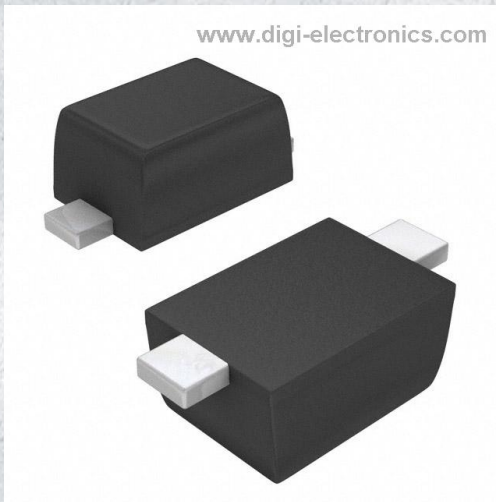


# BZT585B3V3T-7 Datasheet



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|                              |  |
|------------------------------|--|
| DiGi Electronics Part Number | BZT585B3V3T-7-DG                                   |
| Manufacturer                 | <a href="#">Diodes Incorporated</a>                |
| Manufacturer Product Number  | BZT585B3V3T-7                                      |
| Description                  | DIODE ZENER 3.3V 350MW SOD523                      |
| Detailed Description         | Zener Diode 3.3 V 350 mW ±2% Surface Mount SOD-523 |

This model BZT585B3V3T-7 is available at DiGi Electronics.

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## Purchase and inquiry

Manufacturer Product Number:

BZT585B3V3T-7

Series:

-

Voltage - Zener (Nom) (Vz):

3.3 V

Power - Max:

350 mW

Current - Reverse Leakage @ Vr:

5  $\mu$ A @ 1 V

Operating Temperature:

-65°C ~ 150°C

Package / Case:

SC-79, SOD-523

Base Product Number:

BZT585

Manufacturer:

Diodes Incorporated

Product Status:

Active

Tolerance:

$\pm$ 2%

Impedance (Max) (Zzt):

95 Ohms

Voltage - Forward (Vf) (Max) @ If:

1.1 V @ 100 mA

Mounting Type:

Surface Mount

Supplier Device Package:

SOD-523

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.10.0050

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99


**BZT585B2V4T - BZT585B43T**
**SURFACE MOUNT PRECISION ZENER DIODE**

## Features

- $\pm 2.0\%$  Tolerance on Breakdown Voltage
- Small, Low Profile Surface Mount Package
- Flat Lead Package Design for Low Profile and High Power Dissipation
- **Totally Lead-Free & Fully RoHS Compliant (Notes 1 & 2)**
- **Halogen and Antimony Free. "Green" Device (Note 3)**
- **Qualified to AEC-Q101 Standards for High Reliability**

## Mechanical Data

- Case: SOD523
- Case Material: Molded Plastic, "Green" Molding Compound. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminal Connections: Cathode Band
- Terminals: Finish - Matte Tin annealed over Alloy 42 leadframe. Solderable per MIL-STD-202, Method 208 (63)
- Weight: 0.001 grams (approximate)



Top View

## Ordering Information (Note 4)

| Part Number<br>(Type Number)-7* (Note 4) | Case<br>SOD523 | Packaging<br>3000/Tape & Reel |
|--|----------------|-------------------------------|
|--|----------------|-------------------------------|

\*Add "-7" to the appropriate type number in Electrical Characteristics Table, example: 6.2V Zener = BZT585B6V2T-7.

- Notes:
1. No purposely added lead. Fully EU Directive 2002/95/EC (RoHS) & 2011/65/EU (RoHS 2) compliant.
  2. See [http://www.diodes.com/quality/lead\\_free.html](http://www.diodes.com/quality/lead_free.html) for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  3. Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  4. For packaging details, go to our website at <http://www.diodes.com/products/packages.html>.

## Marking Information



xx = Product Type Marking Code  
(See Electrical Characteristics Table)


**BZT585B2V4T - BZT585B43T**
**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

| Characteristic             | Symbol         | Value                    | Unit |
|----------------------------|----------------|--------------------------|------|
| Forward Voltage            | V <sub>F</sub> | @ I <sub>F</sub> = 10mA  | 0.9  |
|                            |                | @ I <sub>F</sub> = 100mA | 1.1  |
| Continuous Forward Current | I <sub>F</sub> | 200                      | mA   |

**Thermal Characteristics**

| Characteristic                                       | Symbol                            | Value       | Unit |
|--|-----------------------------------|-------------|------|
| Power Dissipation (Note 5)                           | P <sub>D</sub>                    | 350         | mW   |
| Thermal Resistance, Junction to Ambient Air (Note 5) | R <sub>θJA</sub>                  | 357         | °C/W |
| Operating and Storage Temperature Range              | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

Note: 5. Device mounted on FR-4 PCB with minimum recommended pad layout, as shown in Diodes Incorporated's Suggested Pad Layout document, which can be found on our website at <http://www.diodes.com>.

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Type Number | Marking Codes | Zener Voltage Range (Note 6)     |         |         |                 | Maximum Zener Impedance (Note 7)  |                                   |                 | Temperature Coefficient | Total Capacitance                              | Maximum Reverse Current (Note 6) |                  |
|-------------|---------------|----------------------------------|---------|---------|-----------------|-----------------------------------|-----------------------------------|-----------------|-------------------------|--|----------------------------------|------------------|
|             |               | V <sub>Z</sub> @ I <sub>ZT</sub> |         |         | I <sub>ZT</sub> | Z <sub>ZT</sub> @ I <sub>ZT</sub> | Z <sub>ZK</sub> @ I <sub>ZK</sub> | I <sub>ZK</sub> | TC @ I <sub>ZT</sub>    | C <sub>T</sub> @ f = 1MHz, V <sub>R</sub> = 0V | I <sub>R</sub>                   | @ V <sub>R</sub> |
|             |               | Nom (V)                          | Min (V) | Max (V) | mA              | Ω                                 | mA                                | Typical (mV/°C) | Max (pF)                | μA   | V                                |                  |
| BZT585B2V4T | 3C            | 2.4                              | 2.35    | 2.45    | 5               | 100                               | 400                               | 1               | -1.3                    | 450  | 50                               | 1                |
| BZT585B2V7T | 3E            | 2.7                              | 2.65    | 2.75    | 5               | 100                               | 450                               | 1               | -1.4                    | 440  | 20                               | 1                |
| BZT585B3V3T | 3H            | 3.3                              | 3.23    | 3.37    | 5               | 95                                | 500                               | 1               | -1.8                    | 410  | 5                                | 1                |
| BZT585B3V6T | 3J            | 3.6                              | 3.53    | 3.67    | 5               | 90                                | 500                               | 1               | -1.9                    | 390  | 5                                | 1                |
| BZT585B3V9T | 3K            | 3.9                              | 3.82    | 3.98    | 5               | 90                                | 500                               | 1               | -1.9                    | 370  | 3                                | 1                |
| BZT585B4V3T | 3L            | 4.3                              | 4.21    | 4.39    | 5               | 90                                | 600                               | 1               | -1.7                    | 350  | 3                                | 1                |
| BZT585B4V7T | 3M            | 4.7                              | 4.61    | 4.79    | 5               | 80                                | 500                               | 1               | -1.2                    | 325  | 3                                | 2                |
| BZT585B5V1T | 3N            | 5.1                              | 5.00    | 5.20    | 5               | 60                                | 480                               | 1               | -0.5                    | 300  | 2                                | 2                |
| BZT585B5V6T | 3P            | 5.6                              | 5.49    | 5.71    | 5               | 40                                | 400                               | 1               | 1.0                     | 275  | 1                                | 2                |
| BZT585B6V2T | 3S            | 6.2                              | 6.08    | 6.32    | 5               | 10                                | 150                               | 1               | 2.2                     | 250  | 3                                | 4                |
| BZT585B6V8T | 3T            | 6.8                              | 6.66    | 6.94    | 5               | 15                                | 80                                | 1               | 3.0                     | 215  | 2                                | 4                |
| BZT585B7V5T | 3U            | 7.5                              | 7.35    | 7.65    | 5               | 10                                | 80                                | 1               | 3.8                     | 170  | 1                                | 5                |
| BZT585B8V2T | 3V            | 8.2                              | 8.04    | 8.36    | 5               | 10                                | 80                                | 1               | 4.7                     | 150  | 0.7                              | 5                |
| BZT585B9V1T | 3X            | 9.1                              | 8.92    | 9.28    | 5               | 10                                | 100                               | 1               | 5.8                     | 120  | 0.5                              | 6                |
| BZT585B10T  | 3Y            | 10                               | 9.80    | 10.20   | 5               | 10                                | 150                               | 1               | 7.0                     | 110  | 0.2                              | 7                |
| BZT585B11T  | 3Z            | 11                               | 10.78   | 11.22   | 5               | 10                                | 150                               | 1               | 8.2                     | 110  | 0.1                              | 8                |
| BZT585B12T  | 4A            | 12                               | 11.76   | 12.24   | 5               | 10                                | 150                               | 1               | 9.5                     | 105  | 0.1                              | 8                |
| BZT585B13T  | 4B            | 13                               | 12.74   | 13.26   | 5               | 10                                | 170                               | 1               | 10.7                    | 105  | 0.1                              | 8                |
| BZT585B15T  | 4D            | 15                               | 14.70   | 15.30   | 5               | 15                                | 200                               | 1               | 13.2                    | 100  | 0.05                             | 10.5             |
| BZT585B16T  | 4E            | 16                               | 15.68   | 16.32   | 5               | 40                                | 200                               | 1               | 14.4                    | 90   | 0.05                             | 11.2             |
| BZT585B18T  | 4F            | 18                               | 17.64   | 18.36   | 5               | 45                                | 225                               | 1               | 16.9                    | 80   | 0.05                             | 12.6             |
| BZT585B20T  | 4G            | 20                               | 19.60   | 20.40   | 5               | 55                                | 225                               | 1               | 19.4                    | 70   | 0.05                             | 14.0             |
| BZT585B22T  | 4H            | 22                               | 21.56   | 22.44   | 5               | 55                                | 250                               | 1               | 21.9                    | 60   | 0.05                             | 15.4             |
| BZT585B24T  | 4J            | 24                               | 23.52   | 24.48   | 5               | 70                                | 250                               | 1               | 24.4                    | 55   | 0.05                             | 16.8             |
| BZT585B27T  | 4K            | 27                               | 26.46   | 27.54   | 2               | 80                                | 300                               | 0.5             | 25.4                    | 50   | 0.05                             | 18.9             |
| BZT585B30T  | 4M            | 30                               | 29.40   | 30.60   | 2               | 80                                | 300                               | 0.5             | 31.1                    | 50   | 0.05                             | 21.0             |
| BZT585B33T  | 4N            | 33                               | 32.34   | 33.66   | 2               | 80                                | 325                               | 0.5             | 36.7                    | 45   | 0.05                             | 23.1             |
| BZT585B36T  | 4P            | 36                               | 35.28   | 36.72   | 2               | 90                                | 350                               | 0.5             | 42.4                    | 45   | 0.05                             | 25.2             |
| BZT585B39T  | 4R            | 39                               | 38.22   | 39.78   | 2               | 130                               | 350                               | 0.5             | 48.1                    | 45   | 0.05                             | 27.3             |
| BZT585B43T  | 4S            | 43                               | 42.14   | 43.86   | 2               | 150                               | 375                               | 0.5             | 55.7                    | 40   | 0.05                             | 30.1             |

Notes: 6. Short duration pulse test used to minimize self-heating effect.  
7. f = 1kHz.



**BZT585B2V4T - BZT585B43T**

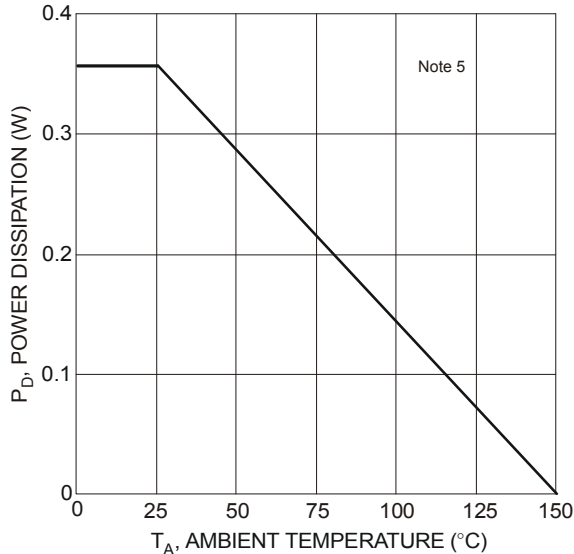


Figure 1 Power Derating Curve

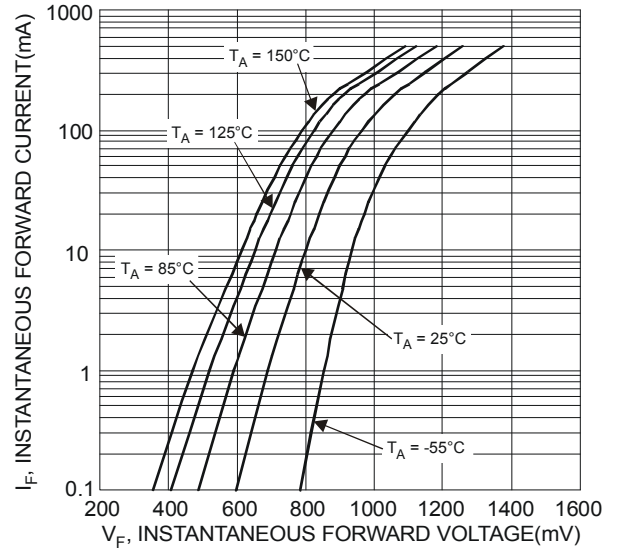


Figure 2 Typical Forward Characteristics

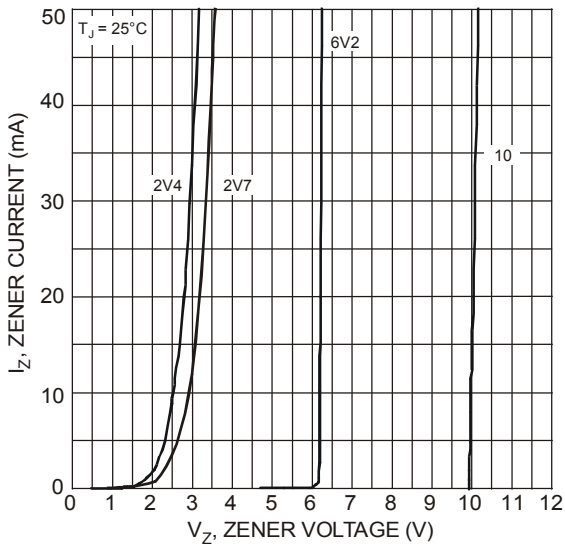


Figure 3 Typical Zener Breakdown Characteristics

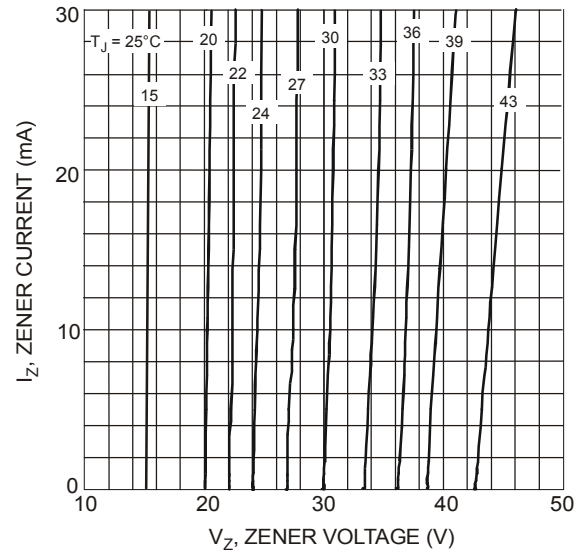
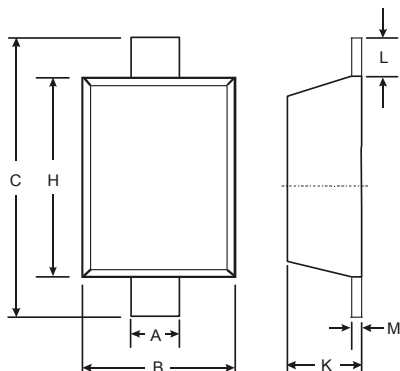


Figure 4 Typical Zener Breakdown Characteristics

**Package Outline Dimensions**

Please see AP02002 at <http://www.diodes.com/datasheets/ap02002.pdf> for latest version.



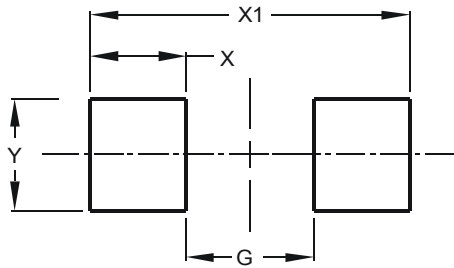
| SOD523               |      |      |
|----------------------|------|------|
| Dim                  | Min  | Max  |
| A                    | 0.25 | 0.35 |
| B                    | 0.70 | 0.90 |
| C                    | 1.50 | 1.70 |
| H                    | 1.10 | 1.30 |
| K                    | 0.55 | 0.65 |
| L                    | 0.10 | 0.30 |
| M                    | 0.10 | 0.12 |
| All Dimensions in mm |      |      |



|                                 |
|---------------------------------|
| <b>BZT585B2V4T - BZT585B43T</b> |
|---------------------------------|

## Suggested Pad Layout

Please see AP02001 at <http://www.diodes.com/datasheets/ap02001.pdf> for latest version.



| Dimensions | Value (in mm) |
|------------|---------------|
| <b>G</b>   | 0.80          |
| <b>X</b>   | 0.60          |
| <b>X1</b>  | 2.00          |
| <b>Y</b>   | 0.70          |

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