



## PZS113V9BES ~ PZS1143BES Series

### SILICON ZENER DIODE

**Voltage**

**3.9~43 V**

**Power**

**150 mW**

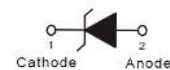
#### Features

- Planar die construction
- 150mW power dissipation
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

#### Mechanical Data

- Case: SOD-523, plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Approx. Weight: 0.00005 ounces, 0.0014 grams

SOD-523



### Maximum Ratings and Thermal Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| PARAMETER  | SYMBOL                | LIMIT       | UNITS                     |
|--|-----------------------|-------------|---------------------------|
| Peak Pulse Power Dissipation at $T_A = 25^\circ\text{C}$ | $P_D^{(1)}$           | 150         | mW                        |
| Typical Thermal Resistance Junction to Ambient           | $R_{\theta JA}^{(2)}$ | 710         | $^\circ\text{C}/\text{W}$ |
| Operating Junction Temperature Range                     | $T_J$                 | -55 to +150 | $^\circ\text{C}$          |
| Storage Temperature Range                                | $T_{STG}$             | -55 to +150 | $^\circ\text{C}$          |

#### NOTES:

1. Mounted on a  $5\text{mm}^2$  copper pads to each terminal.
2. Mounted on a FR-4 PCB, single-sided copper, mini pad .



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Electrical Characteristics ( $T_A = 25^\circ\text{C}$  unless otherwise noted)

| Part Number | Nominal Zener Voltage |       |       |      | Max. Reverse Leakage Current |      | Marking Code |
|-------------|-----------------------|-------|-------|------|------------------------------|------|--------------|
|             | $V_Z@I_{ZT}$          |       |       |      | $I_R@V_R$                    |      |              |
|             | Nom. V                | Min.V | Max.V | mA   | $\mu\text{A}$                | V    |              |
| PZS113V9BES | 3.9                   | 3.71  | 4.10  | 0.05 | 5                            | 2    | AQ           |
| PZS114V3BES | 4.3                   | 4.09  | 4.52  | 0.05 | 4                            | 2    | CQ           |
| PZS114V7BES | 4.7                   | 4.47  | 4.94  | 0.05 | 10                           | 3    | EQ           |
| PZS115V1BES | 5.1                   | 4.85  | 5.36  | 0.05 | 10                           | 3    | FQ           |
| PZS115V3BES | 5.3                   | 5.03  | 5.57  | 0.05 | 10                           | 4    | HQ           |
| PZS115V6BES | 5.6                   | 5.32  | 5.88  | 0.05 | 10                           | 4    | JQ           |
| PZS116V2BES | 6.2                   | 5.89  | 6.51  | 0.05 | 10                           | 5    | KQ           |
| PZS116V8BES | 6.8                   | 6.46  | 7.14  | 0.05 | 10                           | 5.1  | LQ           |
| PZS117V5BES | 7.5                   | 7.13  | 7.88  | 0.05 | 0.8                          | 5.7  | MQ           |
| PZS118V2BES | 8.2                   | 7.79  | 8.61  | 0.05 | 1                            | 6.2  | NQ           |
| PZS118V7BES | 8.7                   | 8.27  | 9.14  | 0.05 | 1                            | 6.6  | PP           |
| PZS119V1BES | 9.1                   | 8.65  | 9.56  | 0.05 | 1                            | 6.9  | RQ           |
| PZS1110BES  | 10                    | 9.5   | 10.5  | 0.05 | 1                            | 7.6  | TQ           |
| PZS1111BES  | 11                    | 10.5  | 11.6  | 0.05 | 0.05                         | 8.4  | 1Q           |
| PZS1112BES  | 12                    | 11.4  | 12.6  | 0.05 | 0.05                         | 9.1  | 2Q           |
| PZS1113BES  | 13                    | 12.4  | 13.7  | 0.05 | 0.05                         | 9.8  | 3Q           |
| PZS1114BES  | 14                    | 13.3  | 14.7  | 0.05 | 0.05                         | 10.6 | 4Q           |
| PZS1115BES  | 15                    | 14.3  | 15.8  | 0.05 | 0.05                         | 11.4 | 5Q           |
| PZS1116BES  | 16                    | 15.2  | 16.8  | 0.05 | 0.05                         | 12.1 | 6Q           |
| PZS1117BES  | 17                    | 16.2  | 17.9  | 0.05 | 0.05                         | 12.9 | 7Q           |
| PZS1118BES  | 18                    | 17.1  | 18.9  | 0.05 | 0.05                         | 13.6 | 8Q           |
| PZS1119BES  | 19                    | 18.1  | 20    | 0.05 | 0.05                         | 14.4 | 9Q           |
| PZS1120BES  | 20                    | 19    | 21    | 0.05 | 0.01                         | 15.2 | UQ           |
| PZS1122BES  | 22                    | 20.9  | 23.1  | 0.05 | 0.01                         | 16.7 | VQ           |
| PZS1124BES  | 24                    | 22.8  | 25.2  | 0.05 | 0.01                         | 18.2 | WQ           |
| PZS1125BES  | 25                    | 23.8  | 26.3  | 0.05 | 0.01                         | 19   | XQ           |
| PZS1127BES  | 27                    | 25.7  | 28.4  | 0.05 | 0.01                         | 20.4 | YQ           |
| PZS1128BES  | 28                    | 26.6  | 29.4  | 0.05 | 0.01                         | 21.2 | ZQ           |
| PZS1130BES  | 30                    | 28.5  | 31.5  | 0.05 | 0.01                         | 22.8 | RA           |



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| Part Number | Nominal Zener Voltage |       |       |      | Max. Reverse Leakage Current |      | Marking Code |
|-------------|-----------------------|-------|-------|------|------------------------------|------|--------------|
|             | $V_Z@I_{ZT}$          |       |       |      | $I_R@V_R$                    |      |              |
|             | Nom. V                | Min.V | Max.V | mA   | uA                           | V    |              |
| PZS1133BES  | 33                    | 31.4  | 34.7  | 0.05 | 0.01                         | 25   | RB           |
| PZS1136BES  | 36                    | 34.2  | 37.8  | 0.05 | 0.01                         | 27.3 | RC           |
| PZS1139BES  | 39                    | 37.1  | 41    | 0.05 | 0.01                         | 29.6 | RD           |
| PZS1143BES  | 43                    | 40.9  | 45.2  | 0.05 | 0.01                         | 32.6 | RE           |



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## TYPICAL CHARACTERISTIC CURVES

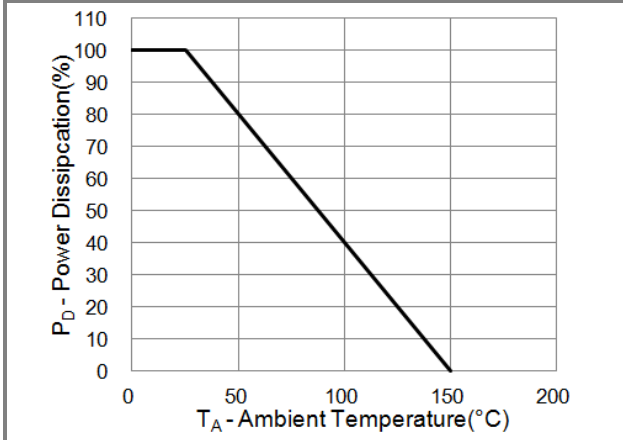


Fig.1 Power Derating Curve

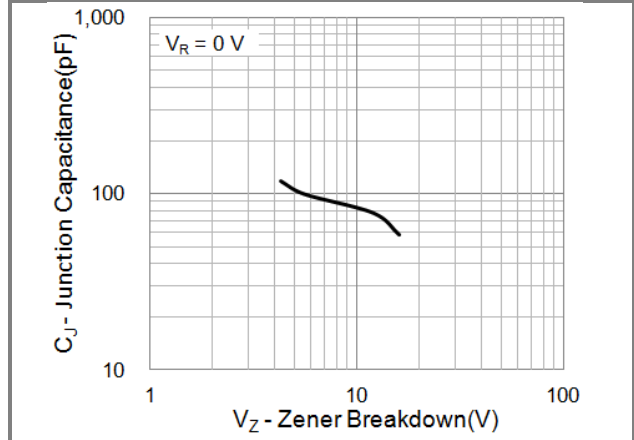


Fig.2 Typical Junction Capacitance

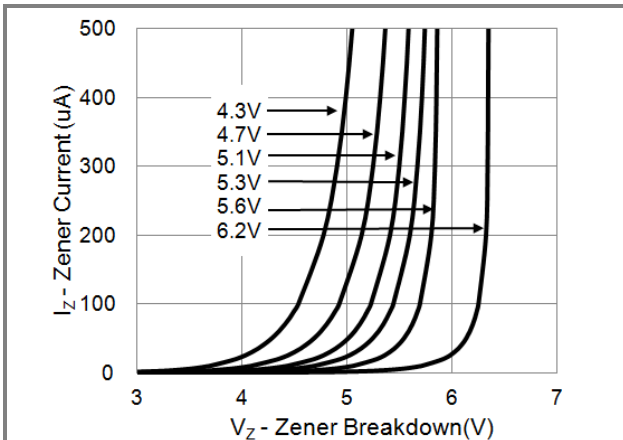


Fig.3 Typical Zener Breakdown

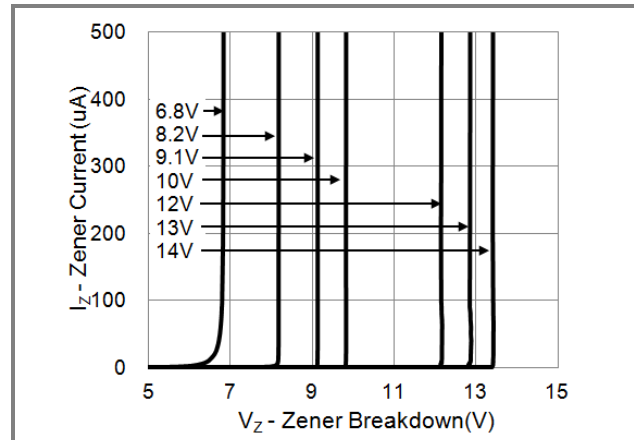


Fig.4 Typical Zener Breakdown

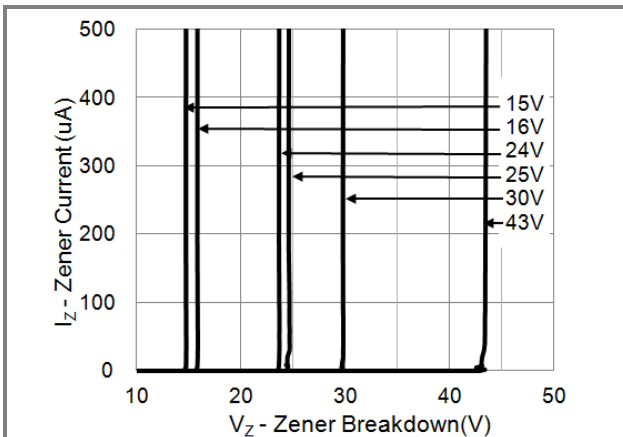


Fig.5 Typical Zener Breakdown

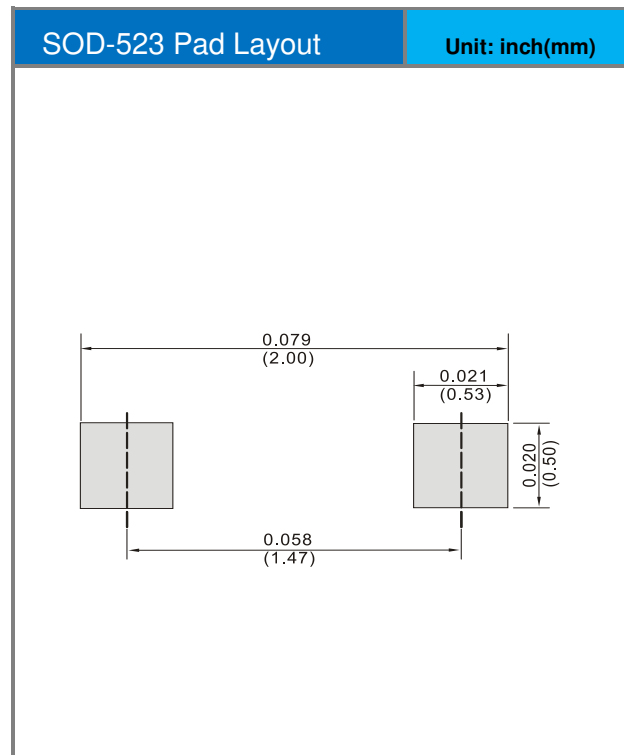
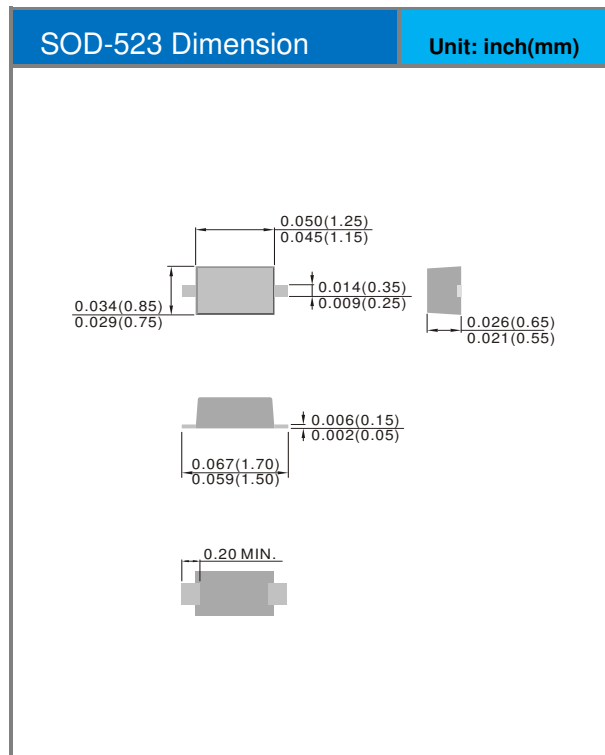


## PZS113V9BES ~ PZS1143BES Series

### Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type     | Marking   | Version      |
|----------------------|--------------|------------------|-----------|--------------|
| PZS11xxxBES_R1_00001 | SOD-523      | 5K pcs / 7" reel | See Table | Halogen free |

### Packaging Information & Mounting Pad Layout





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