



# PZ1AL2V5B~PZ1AL75B

## SILICON ZENER DIODE

**Voltage**

**2.5~75 V**

**Power**

**1 W**

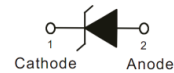
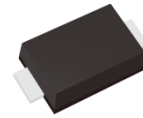
### Features

- Silicon planar Zener diode
- Low profile surface-mount package
- Low leakage current
- Excellent stability
- High temperature soldering: 260 °C/10 seconds at terminals
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

### Mechanical Data

- Case: SOD-123FL, plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Polarity: Color band denotes cathode end
- Approx. Weight: 0.0006 ounces, 0.0173 grams

SOD-123FL



## Maximum Ratings and Thermal Characteristics (T<sub>A</sub> = 25 °C unless otherwise noted)

| PARAMETER  | SYMBOL                          | LIMIT       | UNITS |
|--|---------------------------------|-------------|-------|
| Peak Pulse Power Dissipation at T <sub>A</sub> = 25 °C | P <sub>D</sub> <sup>(1)</sup>   | 1           | W     |
| ESD Voltage per IEC61000-4-2 (Air)                     | V <sub>ESD</sub>                | ±30         | kV    |
| ESD Voltage per IEC61000-4-2 (Contact)                 |                                 | ±30         |       |
| Typical Thermal Resistance                             | R <sub>θJA</sub> <sup>(2)</sup> | 150         | °C/W  |
| Operating Junction Temperature Range                   | T <sub>J</sub>                  | -55 to +150 | °C    |
| Storage Temperature Range                              | T <sub>STG</sub>                | -55 to +150 | °C    |



## PZ1AL2V5B~PZ1AL75B

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

| Part Number | Nominal Zener Voltage |        |        |     | Nominal Zener Impedance |     |                 |      | Max. Reverse Leakage Current |     | Marking Code |
|-------------|-----------------------|--------|--------|-----|-------------------------|-----|-----------------|------|------------------------------|-----|--------------|
|             | $V_Z@I_{ZT}$          |        |        |     | $Z_{ZT}@I_{ZT}$         |     | $Z_{ZK}@I_{ZK}$ |      | $I_R@V_R$                    |     |              |
|             | Nom. V                | Min. V | Max. V | mA  | $\Omega$                | mA  | $\Omega$        | mA   | $\mu\text{A}$                | V   |              |
| PZ1AL2V5B   | 2.5                   | 2.37   | 2.63   | 40  | 15                      | 40  | 1500            | 1    | 200                          | 0.7 | 2V5          |
| PZ1AL3V6B   | 3.6                   | 3.42   | 3.78   | 100 | 8                       | 100 | 400             | 1    | 100                          | 1   | ACH          |
| PZ1AL3V9B   | 3.9                   | 3.71   | 4.10   | 100 | 8                       | 100 | 400             | 1    | 50                           | 1   | BCH          |
| PZ1AL4V3B   | 4.3                   | 4.09   | 4.52   | 100 | 7                       | 100 | 400             | 1    | 25                           | 1   | CCH          |
| PZ1AL4V7B   | 4.7                   | 4.47   | 4.94   | 100 | 7                       | 100 | 500             | 1    | 10                           | 1   | DCH          |
| PZ1AL5V1B   | 5.1                   | 4.85   | 5.36   | 100 | 6                       | 100 | 550             | 1    | 5                            | 1   | ECH          |
| PZ1AL5V6B   | 5.6                   | 5.32   | 5.88   | 100 | 4                       | 100 | 600             | 1    | 10                           | 2   | FCH          |
| PZ1AL6V0B   | 6                     | 5.7    | 6.3    | 100 | 3                       | 100 | 650             | 1    | 8                            | 2   | HCH          |
| PZ1AL6V2B   | 6.2                   | 5.89   | 6.51   | 100 | 3                       | 100 | 700             | 1    | 5                            | 2   | ICH          |
| PZ1AL6V8B   | 6.8                   | 6.46   | 7.14   | 100 | 3                       | 100 | 700             | 1    | 10                           | 3   | JCH          |
| PZ1AL7V5B   | 7.5                   | 7.13   | 7.88   | 100 | 2                       | 100 | 700             | 0.5  | 10                           | 3   | KCH          |
| PZ1AL8V2B   | 8.2                   | 7.79   | 8.61   | 100 | 2                       | 100 | 700             | 0.5  | 10                           | 3   | LCH          |
| PZ1AL8V7B   | 8.7                   | 8.27   | 9.14   | 50  | 3                       | 50  | 700             | 0.5  | 10                           | 4   | MCH          |
| PZ1AL9V1B   | 9.1                   | 8.65   | 9.56   | 50  | 4                       | 50  | 700             | 0.5  | 10                           | 5   | NCH          |
| PZ1AL10B    | 10                    | 9.50   | 10.50  | 50  | 4                       | 50  | 700             | 0.25 | 7                            | 7.5 | PCH          |
| PZ1AL11B    | 11                    | 10.45  | 11.55  | 50  | 7                       | 50  | 700             | 0.25 | 4                            | 8.2 | RCH          |
| PZ1AL12B    | 12                    | 11.40  | 12.60  | 50  | 7                       | 50  | 700             | 0.25 | 3                            | 9.1 | SCH          |
| PZ1AL13B    | 13                    | 12.35  | 13.65  | 50  | 10                      | 50  | 700             | 0.25 | 2                            | 10  | TCH          |
| PZ1AL14B    | 14                    | 13.30  | 14.70  | 50  | 10                      | 50  | 700             | 0.25 | 2                            | 11  | UCH          |
| PZ1AL15B    | 15                    | 14.25  | 15.75  | 50  | 12                      | 50  | 700             | 0.25 | 1                            | 11  | VCH          |
| PZ1AL16B    | 16                    | 15.20  | 16.80  | 25  | 15                      | 25  | 700             | 0.25 | 1                            | 12  | WCH          |
| PZ1AL17B    | 17                    | 16.15  | 17.85  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 13  | XCH          |
| PZ1AL18B    | 18                    | 17.10  | 18.90  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 13  | YCH          |
| PZ1AL19B    | 19                    | 18.05  | 19.95  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 14  | ZCH          |
| PZ1AL20B    | 20                    | 19.00  | 21.00  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 15  | 2CH          |
| PZ1AL22B    | 22                    | 20.90  | 23.10  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 16  | 3CH          |
| PZ1AL24B    | 24                    | 22.80  | 25.20  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 18  | 4CH          |
| PZ1AL25B    | 25                    | 23.75  | 26.25  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 19  | 6CH          |
| PZ1AL27B    | 27                    | 25.65  | 28.35  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 20  | 7CH          |



## PZ1AL2V5B~PZ1AL75B

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

| Part Number | Nominal Zener Voltage |        |        |    | Nominal Zener Impedance |    |                 |      | Max. Reverse Leakage Current |    | Marking Code |
|-------------|-----------------------|--------|--------|----|-------------------------|----|-----------------|------|------------------------------|----|--------------|
|             | $V_Z@I_{ZT}$          |        |        |    | $Z_{ZT}@I_{ZT}$         |    | $Z_{ZK}@I_{ZK}$ |      | $I_R@V_R$                    |    |              |
|             | Nom. V                | Min. V | Max. V | mA | $\Omega$                | mA | $\Omega$        | mA   | uA                           | V  |              |
| PZ1AL28B    | 28                    | 26.60  | 29.40  | 25 | 15                      | 25 | 850             | 0.25 | 1                            | 21 | 9CH          |
| PZ1AL30B    | 30                    | 28.50  | 31.50  | 25 | 15                      | 25 | 1000            | 0.25 | 1                            | 22 | AEH          |
| PZ1AL33B    | 33                    | 31.35  | 34.65  | 25 | 15                      | 25 | 1000            | 0.25 | 1                            | 24 | BEH          |
| PZ1AL36B    | 36                    | 34.20  | 37.80  | 10 | 40                      | 10 | 1000            | 0.25 | 1                            | 27 | CEH          |
| PZ1AL39B    | 39                    | 37.05  | 40.95  | 10 | 40                      | 10 | 1000            | 0.25 | 1                            | 30 | DEH          |
| PZ1AL43B    | 43                    | 40.85  | 45.15  | 10 | 45                      | 10 | 1500            | 0.25 | 1                            | 33 | EEH          |
| PZ1AL47B    | 47                    | 44.65  | 49.35  | 10 | 45                      | 10 | 1500            | 0.25 | 1                            | 36 | FEH          |
| PZ1AL51B    | 51                    | 48.45  | 53.55  | 10 | 60                      | 10 | 1500            | 0.25 | 1                            | 39 | HEH          |
| PZ1AL56B    | 56                    | 53.20  | 58.80  | 10 | 60                      | 10 | 2000            | 0.25 | 1                            | 43 | IEH          |
| PZ1AL62B    | 62                    | 58.90  | 65.10  | 10 | 80                      | 10 | 2000            | 0.25 | 1                            | 47 | JEH          |
| PZ1AL68B    | 68                    | 64.60  | 71.40  | 10 | 80                      | 10 | 2000            | 0.25 | 1                            | 51 | KEH          |
| PZ1AL75B    | 75                    | 71.25  | 78.75  | 10 | 100                     | 10 | 2000            | 0.25 | 1                            | 56 | LEH          |

**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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## TYPICAL CHARACTERISTIC CURVES

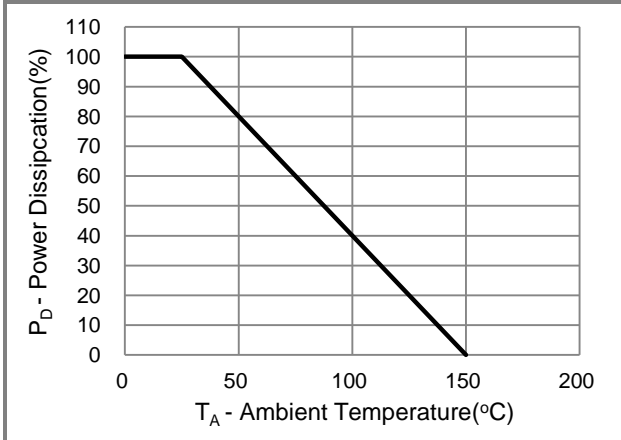


Fig.1 Power Derating Curve

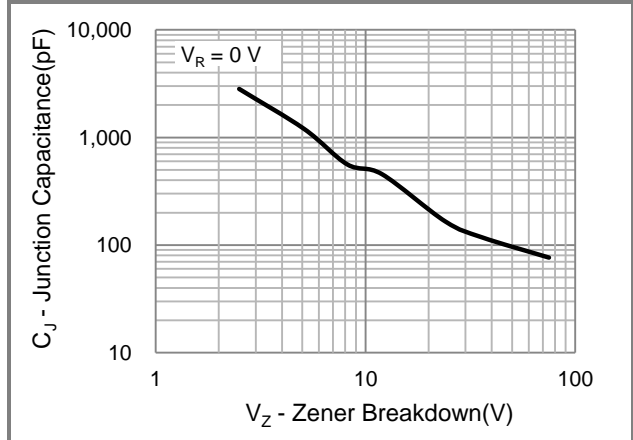


Fig.2 Typical Junction Capacitance

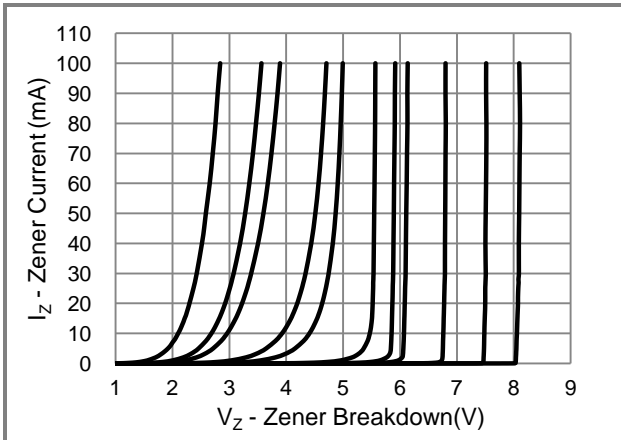


Fig.3 Typical Zener Breakdown

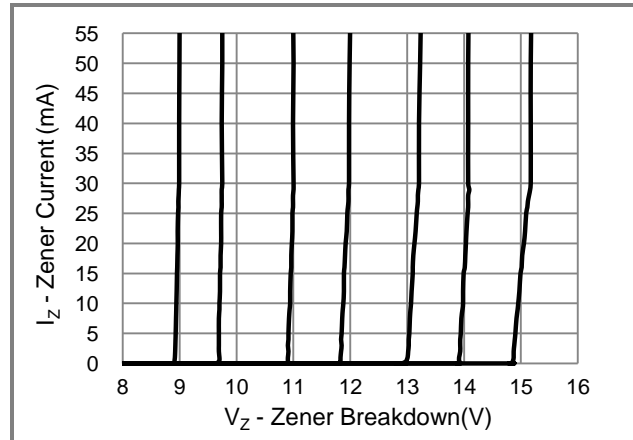


Fig.4 Typical Zener Breakdown

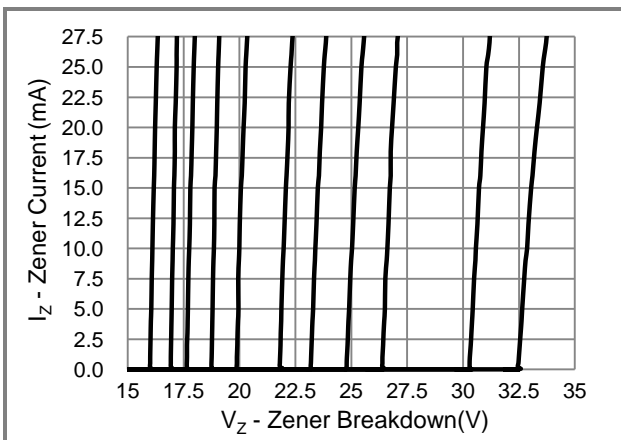


Fig.5 Typical Zener Breakdown

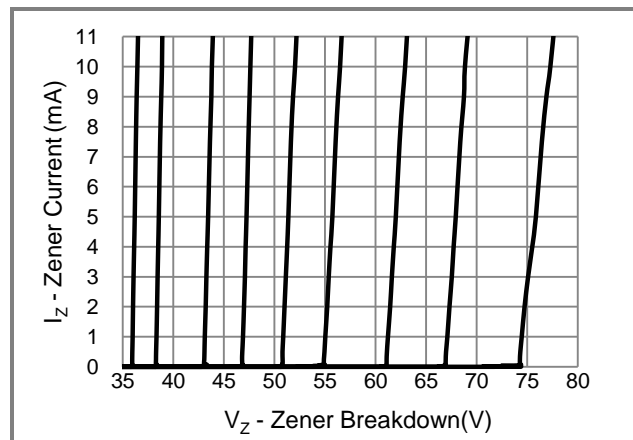


Fig.6 Typical Zener Breakdown



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## Part No Packing Code Version

| Part No Packing Code | Package Type | Packing Type     | Marking | Version      |
|----------------------|--------------|------------------|---------|--------------|
| PZ1AL2V5B_R1_00001   | SOD-123FL    | 3K pcs / 7" reel | 2V5     | Halogen free |

## Packaging Information & Mounting Pad Layout

