



# PZ1AL3V6B-AU~PZ1AL75B-AU

## SILICON ZENER DIODE

**Voltage**

**3.6V~75V**

**Power**

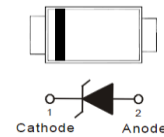
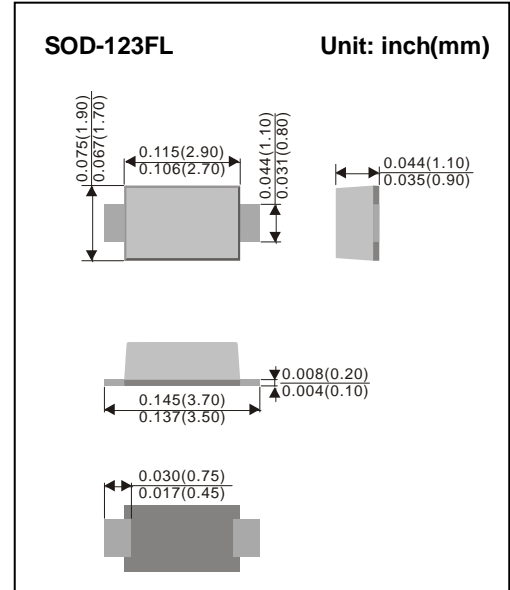
**1Watt**

### Features

- Silicon planar Zener diode
- Low profile surface-mount package
- Low leakage current
- Excellent stability
- AEC-Q101 qualified
- 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



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

| PARAMETER  | SYMBOL          | LIMIT       | UNITS                       |
|--|-----------------|-------------|-----------------------------|
| Peak Pulse Power Dissipation at $T_A=25^{\circ}\text{C}$ (Notes 1) | $P_D$           | 1           | W                           |
| ESD Voltage per IEC61000-4-2 (Air)                                 | $V_{ESD}$       | $\pm 30$    | kV                          |
| ESD Voltage per IEC61000-4-2 (Contact)                             |                 | $\pm 30$    |                             |
| Typical Thermal Resistance (Notes 2)                               | $R_{\theta JA}$ | 185         | $^{\circ}\text{C}/\text{W}$ |
| 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 5mm<sup>2</sup> copper pads to each terminal.
2. Mounted on a FR-4 PCB, single-sided copper, mini pad .



## PZ1AL3V6B-AU~PZ1AL75B-AU

### 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   |              |
| PZ1AL3V6B-AU | 3.6                   | 3.42   | 3.78   | 100 | 8                       | 100 | 400             | 1    | 100                          | 1   | ACH          |
| PZ1AL3V9B-AU | 3.9                   | 3.71   | 4.10   | 100 | 8                       | 100 | 400             | 1    | 50                           | 1   | BCH          |
| PZ1AL4V3B-AU | 4.3                   | 4.09   | 4.52   | 100 | 7                       | 100 | 400             | 1    | 25                           | 1   | CCH          |
| PZ1AL4V7B-AU | 4.7                   | 4.47   | 4.94   | 100 | 7                       | 100 | 500             | 1    | 10                           | 1   | DCH          |
| PZ1AL5V1B-AU | 5.1                   | 4.85   | 5.36   | 100 | 6                       | 100 | 550             | 1    | 5                            | 1   | ECH          |
| PZ1AL5V6B-AU | 5.6                   | 5.32   | 5.88   | 100 | 4                       | 100 | 600             | 1    | 10                           | 2   | FCH          |
| PZ1AL6V0B-AU | 6                     | 5.7    | 6.3    | 100 | 3                       | 100 | 650             | 1    | 8                            | 2   | HCH          |
| PZ1AL6V2B-AU | 6.2                   | 5.89   | 6.51   | 100 | 3                       | 100 | 700             | 1    | 5                            | 2   | ICH          |
| PZ1AL6V8B-AU | 6.8                   | 6.46   | 7.14   | 100 | 3                       | 100 | 700             | 1    | 10                           | 3   | JCH          |
| PZ1AL7V5B-AU | 7.5                   | 7.13   | 7.88   | 100 | 2                       | 100 | 700             | 0.5  | 10                           | 3   | KCH          |
| PZ1AL8V2B-AU | 8.2                   | 7.79   | 8.61   | 100 | 2                       | 100 | 700             | 0.5  | 10                           | 3   | LCH          |
| PZ1AL8V7B-AU | 8.7                   | 8.27   | 9.14   | 50  | 3                       | 50  | 700             | 0.5  | 10                           | 4   | MCH          |
| PZ1AL9V1B-AU | 9.1                   | 8.65   | 9.56   | 50  | 4                       | 50  | 700             | 0.5  | 10                           | 5   | NCH          |
| PZ1AL10B-AU  | 10                    | 9.50   | 10.50  | 50  | 4                       | 50  | 700             | 0.25 | 7                            | 7.5 | PCH          |
| PZ1AL11B-AU  | 11                    | 10.45  | 11.55  | 50  | 7                       | 50  | 700             | 0.25 | 4                            | 8.2 | RCH          |
| PZ1AL12B-AU  | 12                    | 11.40  | 12.60  | 50  | 7                       | 50  | 700             | 0.25 | 3                            | 9.1 | SCH          |
| PZ1AL13B-AU  | 13                    | 12.35  | 13.65  | 50  | 10                      | 50  | 700             | 0.25 | 2                            | 10  | TCH          |
| PZ1AL14B-AU  | 14                    | 13.30  | 14.70  | 50  | 10                      | 50  | 700             | 0.25 | 2                            | 11  | UCH          |
| PZ1AL15B-AU  | 15                    | 14.25  | 15.75  | 50  | 12                      | 50  | 700             | 0.25 | 1                            | 11  | VCH          |
| PZ1AL16B-AU  | 16                    | 15.20  | 16.80  | 25  | 15                      | 25  | 700             | 0.25 | 1                            | 12  | WCH          |
| PZ1AL17B-AU  | 17                    | 16.15  | 17.85  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 13  | XCH          |
| PZ1AL18B-AU  | 18                    | 17.10  | 18.90  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 13  | YCH          |
| PZ1AL19B-AU  | 19                    | 18.05  | 19.95  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 14  | ZCH          |
| PZ1AL20B-AU  | 20                    | 19.00  | 21.00  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 15  | 2CH          |
| PZ1AL22B-AU  | 22                    | 20.90  | 23.10  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 16  | 3CH          |
| PZ1AL24B-AU  | 24                    | 22.80  | 25.20  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 18  | 4CH          |
| PZ1AL25B-AU  | 25                    | 23.75  | 26.25  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 19  | 6CH          |
| PZ1AL27B-AU  | 27                    | 25.65  | 28.35  | 25  | 15                      | 25  | 750             | 0.25 | 1                            | 20  | 7CH          |
| PZ1AL28B-AU  | 28                    | 26.60  | 29.40  | 25  | 15                      | 25  | 850             | 0.25 | 1                            | 21  | 9CH          |



## PZ1AL3V6B-AU~PZ1AL75B-AU

### 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  |              |
| PZ1AL30B-AU | 30                    | 28.50  | 31.50  | 25 | 15                      | 25 | 1000            | 0.25 | 1                            | 22 | AEH          |
| PZ1AL33B-AU | 33                    | 31.35  | 34.65  | 25 | 15                      | 25 | 1000            | 0.25 | 1                            | 24 | BEH          |
| PZ1AL36B-AU | 36                    | 34.20  | 37.80  | 10 | 40                      | 10 | 1000            | 0.25 | 1                            | 27 | CEH          |
| PZ1AL39B-AU | 39                    | 37.05  | 40.95  | 10 | 40                      | 10 | 1000            | 0.25 | 1                            | 30 | DEH          |
| PZ1AL43B-AU | 43                    | 40.85  | 45.15  | 10 | 45                      | 10 | 1500            | 0.25 | 1                            | 33 | EEH          |
| PZ1AL47B-AU | 47                    | 44.65  | 49.35  | 10 | 45                      | 10 | 1500            | 0.25 | 1                            | 36 | FEH          |
| PZ1AL51B-AU | 51                    | 48.45  | 53.55  | 10 | 60                      | 10 | 1500            | 0.25 | 1                            | 39 | HEH          |
| PZ1AL56B-AU | 56                    | 53.20  | 58.80  | 10 | 60                      | 10 | 2000            | 0.25 | 1                            | 43 | IEH          |
| PZ1AL62B-AU | 62                    | 58.90  | 65.10  | 10 | 80                      | 10 | 2000            | 0.25 | 1                            | 47 | JEH          |
| PZ1AL68B-AU | 68                    | 64.60  | 71.40  | 10 | 80                      | 10 | 2000            | 0.25 | 1                            | 51 | KEH          |
| PZ1AL75B-AU | 75                    | 71.25  | 78.75  | 10 | 100                     | 10 | 2000            | 0.25 | 1                            | 56 | LEH          |



# PZ1AL3V6B-AU~PZ1AL75B-AU

## TYPICAL CHARACTERISTIC CURVES

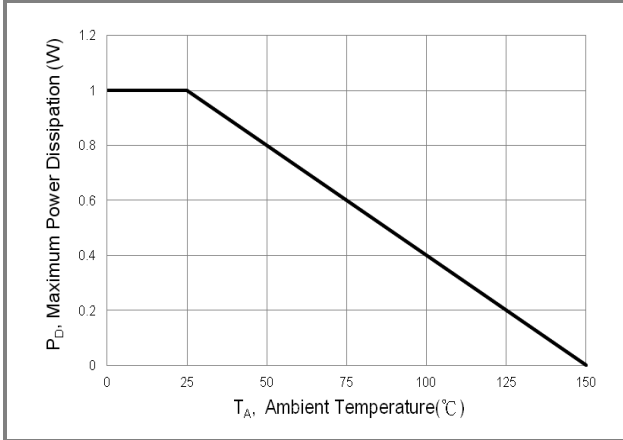


Fig.1 Steady-State Power Derating Curve

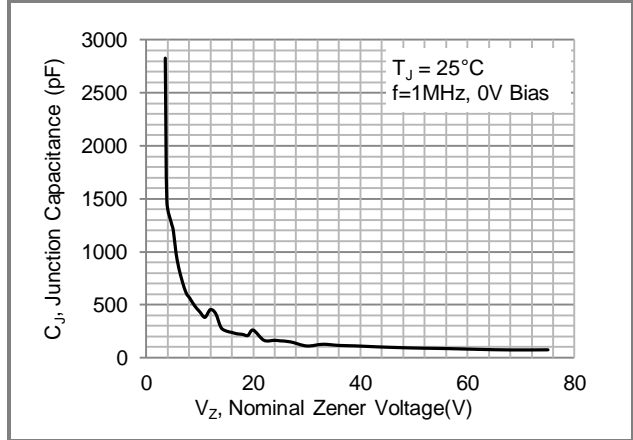


Fig.2 Typical Capacitance Versus V<sub>Z</sub>

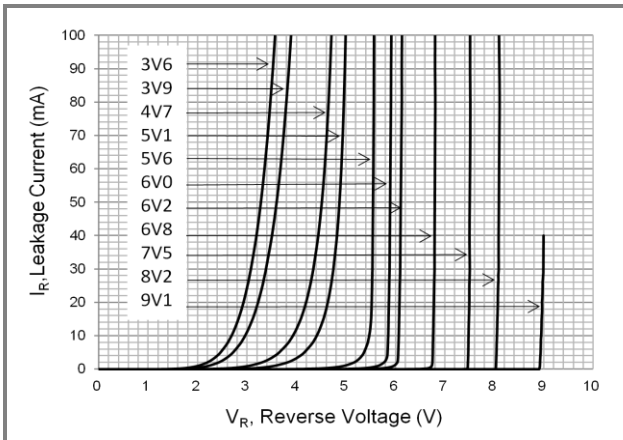


Fig.3 Typical Zener Breakdown Characteristics

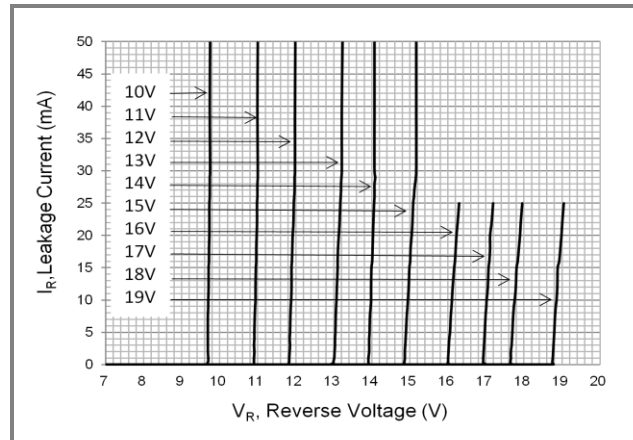


Fig.4 Typical Zener Breakdown Characteristics

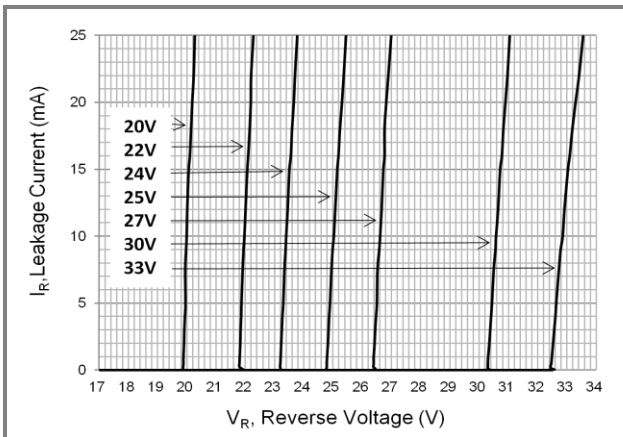


Fig.5 Typical Zener Breakdown Characteristics

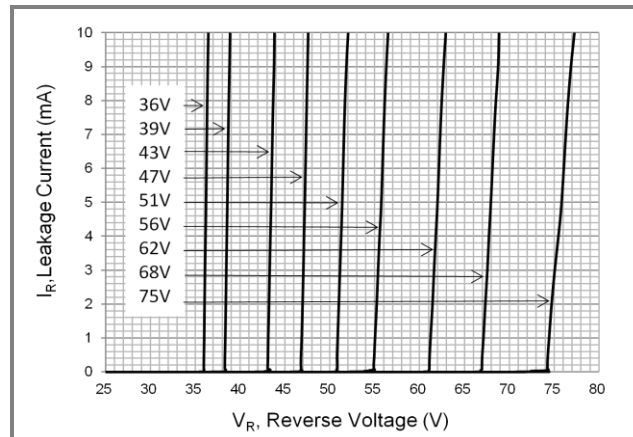


Fig.6 Typical Zener Breakdown Characteristics

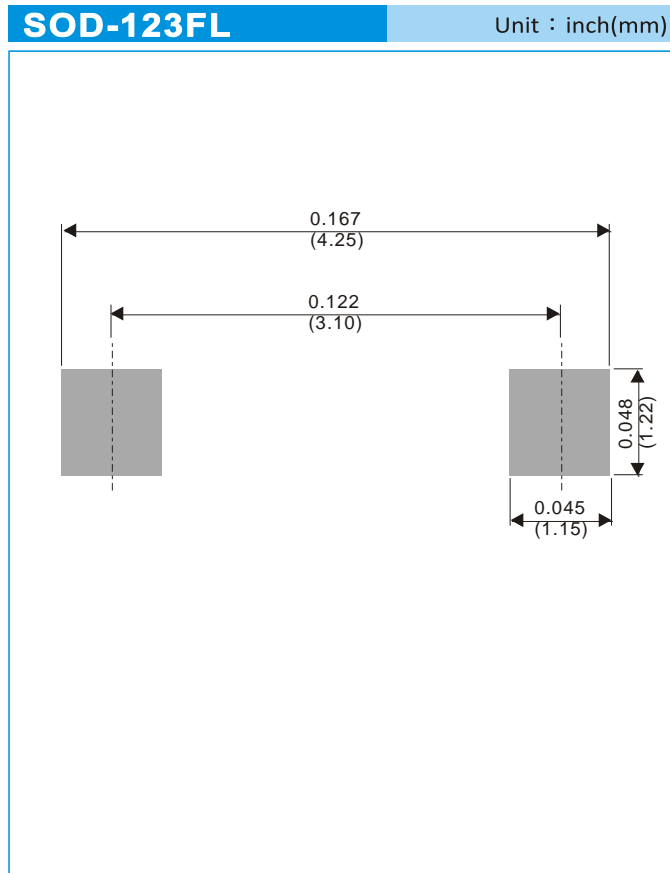


## PZ1AL3V6B-AU~PZ1AL75B-AU

### Part No Packing Code Version

| Part No Packing Code  | Package Type | Packing Type       | Marking | Version      |
|-----------------------|--------------|--------------------|---------|--------------|
| PZ1AL3V6B-AU_R1_000A1 | SOD-123FL    | 3K pcs / 7" reel   | ACH     | Halogen free |
| PZ1AL3V6B-AU_R2_000A1 | SOD-123FL    | 10K pcs / 13" reel | ACH     | Halogen free |

### Mounting Pad Layout





## **PZ1AL3V6B-AU~PZ1AL75B-AU**

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