

## Dual Low-Voltage Avalanche Regulator Diodes

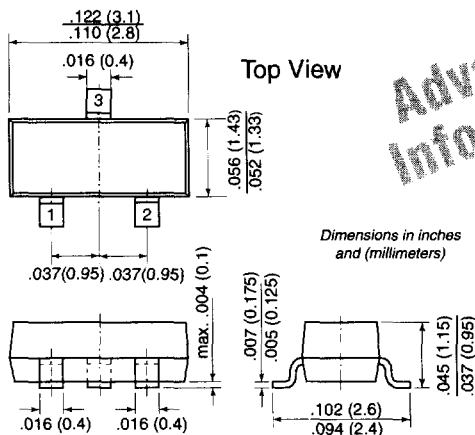
V<sub>z</sub> Range 5.0 to 6.8V

Total Power Dissipation 250mW

Peak Reverse Power Dissipation 30W

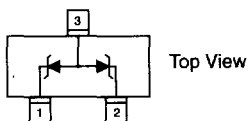
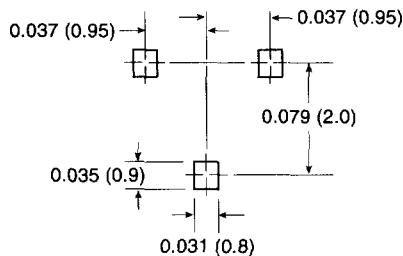


**TO-236AB (SOT-23)**



Advanced  
Information

**Mounting Pad Layout**



### Mechanical Data

**Case:** SOT-23 Plastic Package

**Weight:** Approx. 0.008g

**Packaging Codes/Options:**

E8/10K per 13" reel (8mm tape), 30K box

E9/3K per 7" reel (8mm tape), 30K box

### Features

- Very low dynamic impedance at low currents
- Sharp breakdown knee
- Low noise
- Small tolerances of V<sub>z</sub>
- Dual common-anode zener diodes

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

| Parameter                                                                                       | Symbol           | Value       | Unit |
|-------------------------------------------------------------------------------------------------|------------------|-------------|------|
| Continuous forward current                                                                      | I <sub>F</sub>   | 250         | mA   |
| Repetitive peak working current t <sub>p</sub> = 100μs; δ = 10%                                 | I <sub>ZRM</sub> | 250         | mA   |
| Non-repetitive peak reverse power dissipation<br>t <sub>p</sub> = 100μs, T <sub>J</sub> = 150°C | P <sub>ZSM</sub> | 30          | W    |
| Total power dissipation<br>at T <sub>amb</sub> = 25°C <sup>(1)</sup>                            | P <sub>tot</sub> | 250<br>180  | mW   |
| Junction Temperature                                                                            | T <sub>j</sub>   | 150         | °C   |
| Storage Temperature                                                                             | T <sub>stg</sub> | -65 to +150 | °C   |

**Notes:** (1) Device mounted on a FR4 printed circuit-board.

**Electrical Characteristics** ( $T_J = 25^\circ\text{C}$  unless otherwise noted) **Maximum  $V_F = 0.9\text{V}$  at  $I_F = 10\text{mA}$** 

| Type      | Zener Voltage $V_Z$ (V)   |      |      |                          |      |      | Typ. Temp. coefficient $\alpha_{VZ}$ (%/°C) | Noise voltage density, $V_n$ ( $\mu\text{V}/\sqrt{\text{Hz}}$ ) <sup>(1)</sup> | Dynamic Resistance $R_z$ ( $\Omega$ ) |
|-----------|---------------------------|------|------|--------------------------|------|------|---------------------------------------------|--------------------------------------------------------------------------------|---------------------------------------|
|           | at $I_Z = 250\mu\text{A}$ |      |      | at $I_Z = 10\mu\text{A}$ |      |      |                                             |                                                                                |                                       |
|           | min.                      | typ. | max. | min.                     | typ. | max. |                                             |                                                                                |                                       |
| PLVA2650A | 4.80                      | 5.00 | 5.20 | —                        | 4.30 | —    | 0.20                                        | 1.0                                                                            | 700                                   |
| PLVA2653A | 5.10                      | 5.30 | 5.50 | —                        | 5.20 | —    | 1.60                                        | 1.0                                                                            | 250                                   |
| PLVA2656A | 5.40                      | 5.60 | 5.80 | —                        | 5.51 | —    | 1.90                                        | 1.0                                                                            | 100                                   |
| PLVA2659A | 5.70                      | 5.90 | 6.10 | —                        | 5.85 | —    | 2.40                                        | 1.0                                                                            | 100                                   |
| PLVA2662A | 6.00                      | 6.20 | 6.40 | —                        | 6.19 | —    | 2.65                                        | 1.0                                                                            | 100                                   |
| PLVA2665A | 6.30                      | 6.50 | 6.70 | —                        | 6.49 | —    | 2.90                                        | 1.0                                                                            | 100                                   |
| PLVA2668A | 6.60                      | 6.80 | 7.00 | —                        | 6.80 | —    | 3.40                                        | 1.0                                                                            | 100                                   |

| Type      | Maximum Reverse Leakage Current, $I_R$ (nA) |      |       |                               |      |      |                               |       |      | Line Regulation $\Delta V_Z$ (V) |
|-----------|---------------------------------------------|------|-------|-------------------------------|------|------|-------------------------------|-------|------|----------------------------------|
|           | at $V_R = 80\%$ $V_Z$ nominal               |      |       | at $V_R = 50\%$ $V_Z$ nominal |      |      | at $V_R = 90\%$ $V_Z$ nominal |       |      |                                  |
|           | min.                                        | typ. | max.  | min.                          | typ. | max. | min.                          | typ.  | max. |                                  |
| PLVA2650A | —                                           | —    | 20000 | —                             | 34   | —    | —                             | 21000 | —    | 0.4 <sup>(2)</sup>               |
| PLVA2653A | —                                           | —    | 5000  | —                             | 22   | —    | —                             | 3500  | —    | 0.2 <sup>(2)</sup>               |
| PLVA2656A | —                                           | —    | 1000  | —                             | 1.1  | —    | —                             | 1300  | —    | 0.1 <sup>(3)</sup>               |
| PLVA2659A | —                                           | —    | 500   | —                             | 0.9  | —    | —                             | 1000  | —    | 0.1 <sup>(4)</sup>               |
| PLVA2662A | —                                           | —    | 100   | —                             | 0.9  | —    | —                             | 50    | —    | 0.1 <sup>(4)</sup>               |
| PLVA2665A | —                                           | —    | 50    | —                             | 0.9  | —    | —                             | 40    | —    | 0.1 <sup>(4)</sup>               |
| PLVA2668A | —                                           | —    | 10    | —                             | 0.8  | —    | —                             | 6     | —    | 0.1 <sup>(4)</sup>               |

Notes: (1)  $f = 1\text{kHz}$ ;  $B = 1\text{kHz}$ ;  $I_Z = 250\mu\text{A}$

(2)  $I_{L0} = 100\mu\text{A}$ ;  $I_{H1} = 1\text{mA}$

(3)  $I_{L0} = 50\mu\text{A}$ ;  $I_{H1} = 1\text{mA}$

(4)  $I_{L0} = 10\mu\text{A}$ ;  $I_{H1} = 1\text{mA}$