



## SSCZXXXHD1 Series

### Zener Voltage Regulator

#### ● Description

The SSCZXXXHD1 is packaged in a SOD-123 surface mount package that has a power dissipation of 500mW. They are designed to provide voltage regulation protection and are especially attractive in situations where space is at a premium. It is applicable to mobile phones, hand-held portable devices, high-density PC boards.

#### ● Feature

- ✧ Low profile package
- ✧ Ideal for automated placement
- ✧ Low Zener Impedance
- ✧ Steady state power rating of 500mW
- ✧ RoHS compliant transient

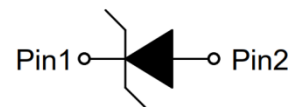
#### ● Applications

- ✧ Hand held portables
- ✧ Cellular phones
- ✧ High density PC boards

#### ● PIN configuration



**SOD-123**



**Circuit diagram**

#### ● Mechanical data

- ✧ Package: SOD-123
- ✧ Lead finish:100% matte Sn(Tin)
- ✧ Mounting position: Any
- ✧ Qualified max reflow temperature:260°C
- ✧ Device meets MSL 3 requirements
- ✧ Pure tin plating: 7 ~ 17 um
- ✧ Pin flatness:≤3mil

#### ● Absolute maximum rating @T<sub>A</sub>=25°C

| Parameter                               | Symbol           | Value    | Unit |
|---|------------------|----------|------|
| Total Device Dissipation FR-5 Board     | P <sub>D</sub>   | 500      | mW   |
| Forward Voltage @ I <sub>F</sub> = 10mA | V <sub>F</sub>   | 0.9      | V    |
| Thermal Resistance,Junction-to-Ambient  | R <sub>θJA</sub> | 340      | °C/W |
| Storage Temperature                     | T <sub>STG</sub> | -55/+150 | °C   |
| Operating Temperature                   | T <sub>J</sub>   | -55/+150 | °C   |



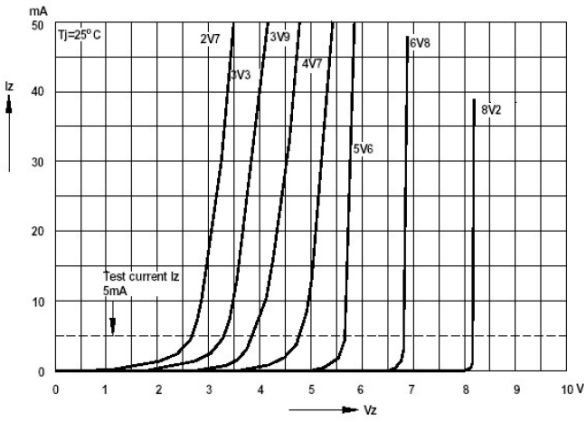
● **Electrical Characteristics @T<sub>A</sub>=25°C**

| Device     | Marking | Zener Voltage Range              |        |        |                 | Maximum Zener Impedance          |                                  |                 | Maximum Reverse Current |                | Typical Temperature coefficient @ I <sub>ZTC</sub> =mV/°C |      | Test Current I <sub>ZTC</sub> |
|------------|---------|----------------------------------|--------|--------|-----------------|----------------------------------|----------------------------------|-----------------|-------------------------|----------------|---|------|-------------------------------|
|            |         | 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> | I <sub>R</sub>          | V <sub>R</sub> | Min   | Max  |                               |
|            |         | Nom(V)                           | Min(V) | Max(V) | mA              | Ω                                |                                  | mA              | μA                      | V              | Min   | Max  |                               |
| SSCZ2V4HD1 | WX      | 2.4                              | 2.2    | 2.6    | 5               | 100                              | 600                              | 1.0             | 50                      | 1.0            | -3.5  | 0    | 5                             |
| SSCZ2V7HD1 | W1      | 2.7                              | 2.5    | 2.9    | 5               | 100                              | 600                              | 1.0             | 20                      | 1.0            | -3.5  | 0    | 5                             |
| SSCZ3V0HD1 | W2      | 3.0                              | 2.8    | 3.2    | 5               | 95                               | 600                              | 1.0             | 10                      | 1.0            | -3.5  | 0    | 5                             |
| SSCZ3V3HD1 | W3      | 3.3                              | 3.1    | 3.5    | 5               | 95                               | 600                              | 1.0             | 5                       | 1.0            | -3.5  | 0    | 5                             |
| SSCZ3V6HD1 | W4      | 3.6                              | 3.4    | 3.8    | 5               | 90                               | 600                              | 1.0             | 5                       | 1.0            | -3.5  | 0    | 5                             |
| SSCZ3V9HD1 | W5      | 3.9                              | 3.7    | 4.1    | 5               | 90                               | 600                              | 1.0             | 3                       | 1.0            | -3.5  | 0    | 5                             |
| SSCZ4V3HD1 | W6      | 4.3                              | 4.0    | 4.6    | 5               | 90                               | 600                              | 1.0             | 3                       | 1.0            | -3.5  | 0    | 5                             |
| SSCZ4V7HD1 | W7      | 4.7                              | 4.4    | 5.0    | 5               | 80                               | 500                              | 1.0             | 3                       | 2.0            | -3.5  | 0.2  | 5                             |
| SSCZ5V1HD1 | 5V1H    | 5.1                              | 4.8    | 5.4    | 5               | 60                               | 480                              | 1.0             | 2                       | 2.0            | -2.7  | 1.2  | 5                             |
| SSCZ5V6HD1 | W9      | 5.6                              | 5.2    | 6.0    | 5               | 40                               | 400                              | 1.0             | 1                       | 2.0            | -2.0  | 2.5  | 5                             |
| SSCZ6V2HD1 | WA      | 6.2                              | 5.8    | 6.6    | 5               | 10                               | 150                              | 1.0             | 3                       | 4.0            | 0.4   | 3.7  | 5                             |
| SSCZ6V8HD1 | WB      | 6.8                              | 6.4    | 7.2    | 5               | 15                               | 80                               | 1.0             | 2                       | 4.0            | 1.2   | 4.5  | 5                             |
| SSCZ7V5HD1 | WC      | 7.5                              | 7.0    | 7.9    | 5               | 15                               | 80                               | 1.0             | 1                       | 5.0            | 2.5   | 5.3  | 5                             |
| SSCZ8V2HD1 | WD      | 8.2                              | 7.7    | 8.7    | 5               | 15                               | 80                               | 1.0             | 0.7                     | 5.0            | 3.2   | 6.2  | 5                             |
| SSCZ9V1HD1 | WE      | 9.1                              | 8.5    | 9.6    | 5               | 15                               | 100                              | 1.0             | 0.5                     | 6.0            | 3.8   | 7.0  | 5                             |
| SSCZ10VHD1 | WF      | 10                               | 9.4    | 10.6   | 5               | 20                               | 150                              | 1.0             | 0.2                     | 7.0            | 4.5   | 8.0  | 5                             |
| SSCZ11VHD1 | WG      | 11                               | 10.4   | 11.6   | 5               | 20                               | 150                              | 1.0             | 0.1                     | 8.0            | 5.4   | 9.0  | 5                             |
| SSCZ12VHD1 | WH      | 12                               | 11.4   | 12.7   | 5               | 25                               | 150                              | 1.0             | 0.1                     | 8.0            | 6.0   | 10.0 | 5                             |
| SSCZ13VHD1 | WI      | 13                               | 12.4   | 14.1   | 5               | 30                               | 170                              | 1.0             | 0.1                     | 8.0            | 7.0   | 11.0 | 5                             |
| SSCZ15VHD1 | WJ      | 15                               | 13.8   | 15.6   | 5               | 30                               | 200                              | 1.0             | 0.1                     | 10.5           | 9.2   | 13.0 | 5                             |
| SSCZ16VHD1 | WK      | 16                               | 15.3   | 17.1   | 5               | 40                               | 200                              | 1.0             | 0.1                     | 11.2           | 10.4  | 14.0 | 5                             |
| SSCZ18VHD1 | WL      | 18                               | 16.8   | 19.1   | 5               | 45                               | 225                              | 1.0             | 0.1                     | 12.6           | 12.4  | 16.0 | 5                             |
| SSCZ20VHD1 | WM      | 20                               | 18.8   | 21.2   | 5               | 55                               | 225                              | 1.0             | 0.1                     | 14.0           | 14.4  | 18.0 | 5                             |
| SSCZ22VHD1 | WN      | 22                               | 20.8   | 23.3   | 5               | 55                               | 250                              | 1.0             | 0.1                     | 15.4           | 16.4  | 20.0 | 5                             |
| SSCZ24VHD1 | WO      | 24                               | 22.8   | 25.6   | 5               | 70                               | 250                              | 1.0             | 0.1                     | 16.8           | 18.4  | 22.0 | 5                             |
| SSCZ27VHD1 | WP      | 27                               | 25.1   | 28.9   | 2               | 80                               | 300                              | 0.5             | 0.1                     | 18.9           | 21.4  | 25.3 | 2                             |
| SSCZ30VHD1 | WQ      | 30                               | 28.0   | 32.0   | 2               | 80                               | 300                              | 0.5             | 0.1                     | 21.0           | 24.4  | 29.4 | 2                             |
| SSCZ33VHD1 | WR      | 33                               | 31.0   | 35.0   | 2               | 80                               | 325                              | 0.5             | 0.1                     | 23.1           | 27.4  | 33.4 | 2                             |
| SSCZ36VHD1 | WS      | 36                               | 34.0   | 38.0   | 2               | 90                               | 350                              | 0.5             | 0.1                     | 25.2           | 30.4  | 37.4 | 2                             |
| SSCZ39VHD1 | WT      | 39                               | 37.0   | 41.0   | 2               | 130                              | 350                              | 0.5             | 0.1                     | 27.3           | 33.4  | 41.2 | 2                             |
| SSCZ43VHD1 | WU      | 43                               | 40.0   | 46.0   | 2               | 150                              | 375                              | 0.5             | 0.1                     | 32.0           | 10.0  | 12.0 | 5                             |
| SSCZ47VHD1 | WV      | 47                               | 44.0   | 50.0   | 2               | 170                              | 375                              | 0.5             | 0.1                     | 35.0           | 10.0  | 12.0 | 5                             |
| SSCZ51VHD1 | WW      | 51                               | 48.0   | 54.0   | 2               | 180                              | 400                              | 0.5             | 0.1                     | 38.0           | 10.0  | 12.0 | 5                             |
| SSCZ56VHD1 | XW      | 56                               | 52.0   | 60.0   | 2               | 200                              | 425                              | 0.5             | 0.1                     | 39.0           | 10.0  | 12.0 | 5                             |
| SSCZ62VHD1 | 6E      | 62                               | 58.0   | 66.0   | 2               | 215                              | 450                              | 0.5             | 0.2                     | 47.0           | 10.0  | 12.0 | 5                             |
| SSCZ68VHD1 | 6F      | 68                               | 64.0   | 72.0   | 2               | 240                              | 475                              | 0.5             | 0.2                     | 52.0           | 10.0  | 12.0 | 5                             |

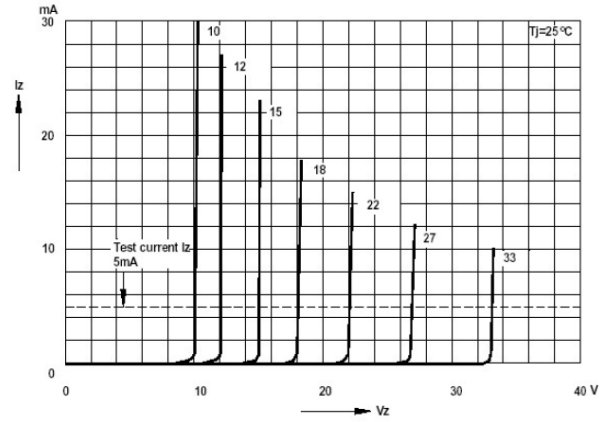


|            |    |    |      |      |   |     |     |     |     |      |      |      |   |
|------------|----|----|------|------|---|-----|-----|-----|-----|------|------|------|---|
| SSCZ75VHD1 | 6H | 75 | 70.0 | 79.0 | 2 | 255 | 500 | 0.5 | 0.2 | 57.0 | 10.0 | 12.0 | 5 |
|------------|----|----|------|------|---|-----|-----|-----|-----|------|------|------|---|

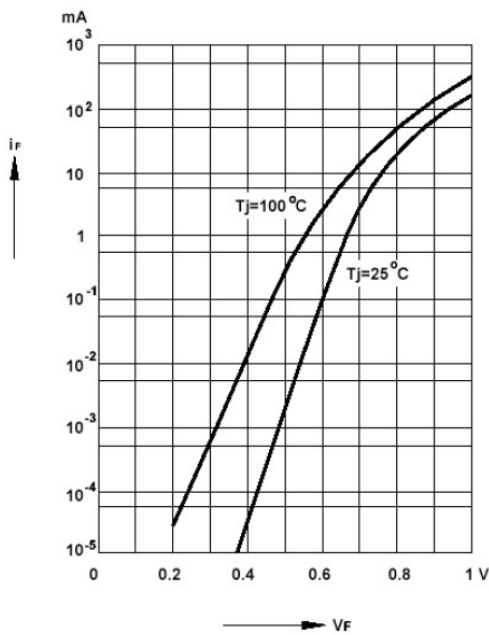
## ● Typical Performance Characteristics



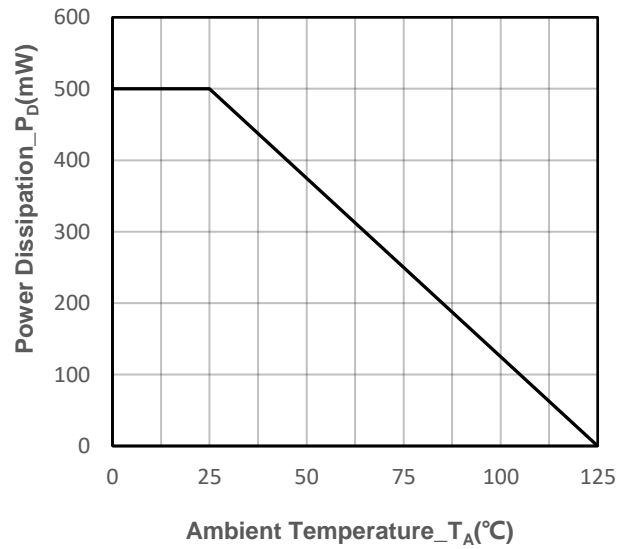
Zener Current vs. Zener Voltage



Zener Current vs. Zener Voltage



Forward Current vs. Forward Voltage



Power Derating vs. Ambient Temperature



## ● Package Information

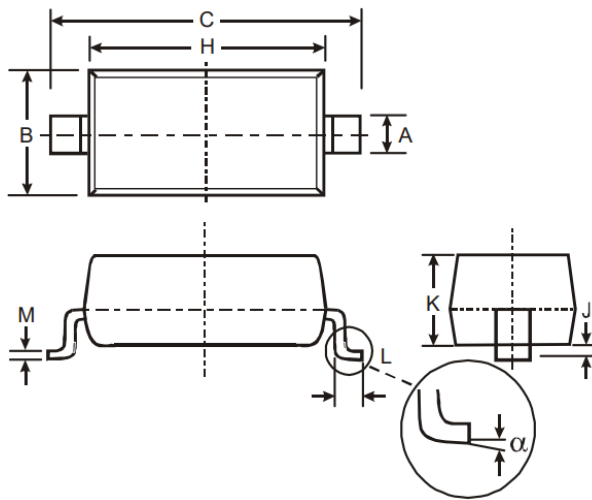
### Ordering Information

| Device     | Package | Qty per Reel | Reel Size |
|------------|---------|--------------|-----------|
| SSCZXXXHD1 | SOD-123 | 3000         | 7 Inch    |

### Mechanical Data

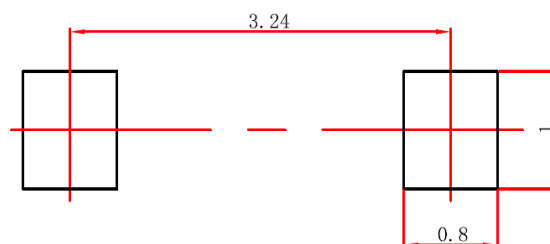
Case:SOD-123

Case Material: Molded Plastic. UL Flammability



| DIM      | Millimeters |      |
|----------|-------------|------|
|          | Min         | Max  |
| A        | 0.45        | 0.65 |
| B        | 1.50        | 1.70 |
| C        | 3.55        | 3.85 |
| H        | 2.6         | 2.8  |
| J        | 0.00        | 0.10 |
| K        | 1.05        | 1.15 |
| L        | 0.25        | 0.45 |
| M        | 0.08        | 0.15 |
| $\alpha$ | 0           | 8°   |

### Recommended Pad outline (Unit:mm)





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