

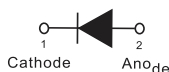
## Surface Mount Rectifier Diode

### Features

- Low profile package
- Ideal for automated placement
- Glass passivated chip junction
- Switching for general purpose
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260°C

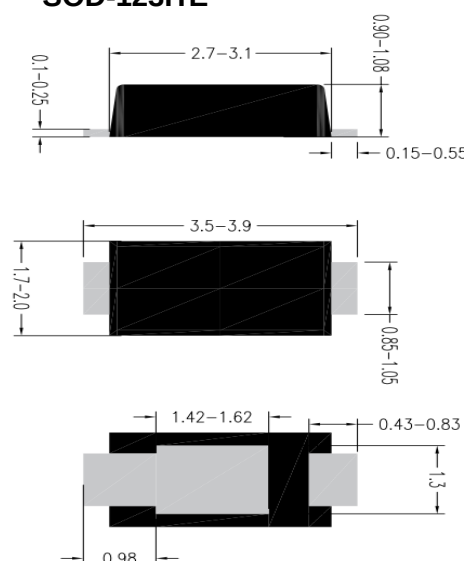
### Mechanical Data

- Package: SOD-123HE
- Terminals: Tin plated leads, solderable per
- Polarity: Cathode line denotes the cathode end



SOD-123HE

Unit : inch(mm)



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

| Parameter                                                                                       | Symbol    | Unit             | S1AHE      | S1BHE | S1DHE | S1GHE | S1JHE | S1KHE | S1MHE |
|-------------------------------------------------------------------------------------------------|-----------|------------------|------------|-------|-------|-------|-------|-------|-------|
| Maximum Repetitive Peak Reverse Voltage                                                         | $V_{RRM}$ | V                | 50         | 100   | 200   | 400   | 600   | 800   | 1000  |
| Maximum RMS Voltage                                                                             | $V_{RMS}$ | V                | 35         | 70    | 140   | 280   | 420   | 560   | 700   |
| Maximum DC blocking Voltage                                                                     | $V_{DC}$  | V                | 50         | 100   | 200   | 400   | 600   | 800   | 1000  |
| Average rectified output current<br>@60Hz sine wave, Resistance load, TL<br>(FIG.1)             | $I_O$     | A                | 1.0        |       |       |       |       |       |       |
| Forward Surge Current (Non-repetitive)<br>@60Hz Half-sine wave, 1 cycle, $T_j=25^\circ\text{C}$ | $I_{FSM}$ | A                | 30         |       |       |       |       |       |       |
| Forward Surge Current (Non-repetitive)<br>@1ms, square wave, 1 cycle, $T_j=25^\circ\text{C}$    |           |                  | 60         |       |       |       |       |       |       |
| Current squared time @1ms≤t≤8.3ms<br>$T_j=25^\circ\text{C}$                                     | $I^2t$    | A <sup>2</sup> s | 3.735      |       |       |       |       |       |       |
| Storage temperature                                                                             | $T_{stg}$ | °C               | -55 ~ +150 |       |       |       |       |       |       |
| Junction temperature                                                                            | $T_j$     | °C               | -55 ~ +150 |       |       |       |       |       |       |

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

| Parameter                                               | Symbol | Unit    | Test Conditions                                           | S1AHE | S1BHE | S1DHE | S1GHE | S1JHE | S1KHE | S1MHE |
|---------------------------------------------------------|--------|---------|-----------------------------------------------------------|-------|-------|-------|-------|-------|-------|-------|
| Maximum instantaneous forward voltage                   | $V_F$  | V       | $I_{FM}=1.0A$                                             | 1.1   |       |       |       |       |       |       |
| Maximum DC reverse current at rated DC blocking voltage | $I_R$  | $\mu A$ | $T_j = 25^\circ\text{C}$                                  | 5     |       |       |       |       |       |       |
|                                                         |        |         | $T_j = 125^\circ\text{C}$                                 | 100   |       |       |       |       |       |       |
| Typical junction capacitance                            | $C_j$  | pF      | Measured at 1MHz and Applied Reverse Voltage of 4.0 V.D.C | 7     |       |       |       |       |       |       |

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

| Parameter                  | Symbol                 | Unit               | S1AHE | S1BHE | S1DHE | S1GHE | S1JHE | S1KHE | S1MHE |
|----------------------------|------------------------|--------------------|-------|-------|-------|-------|-------|-------|-------|
| Typical Thermal resistance | $R_{\theta J-A}^{(1)}$ | $^\circ\text{C/W}$ | 70    |       |       |       |       |       |       |
|                            | $R_{\theta J-L}^{(1)}$ |                    | 20    |       |       |       |       |       |       |
|                            | $R_{\theta J-C}^{(1)}$ |                    | 18    |       |       |       |       |       |       |

Note:

(1) Thermal resistance between junction and ambient and between junction and lead mounted on P.C.B with 3mm\*3mm copper pad areas.

## Characteristics Curves (Typical)

FIG.1:  $I_o$ - $T_L$  Curve

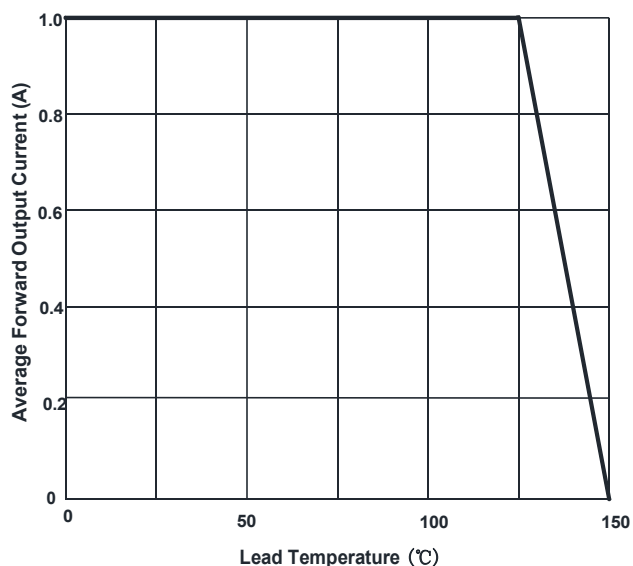


FIG.2: Forward Surge Current Capability

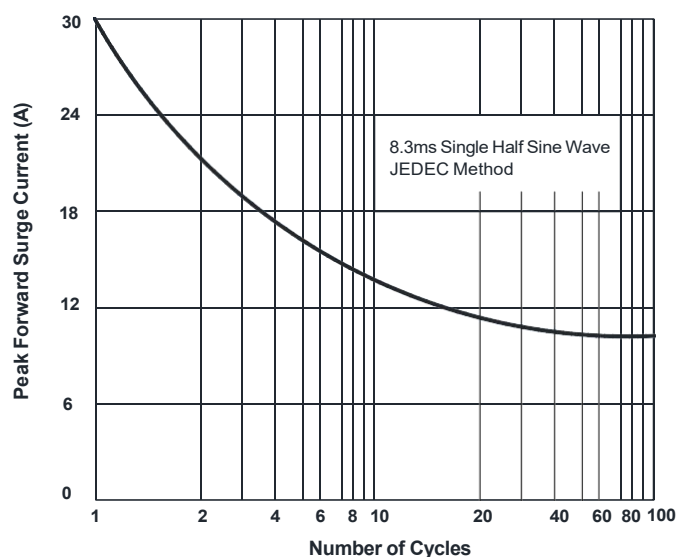


FIG.3: Typical Forward Voltage

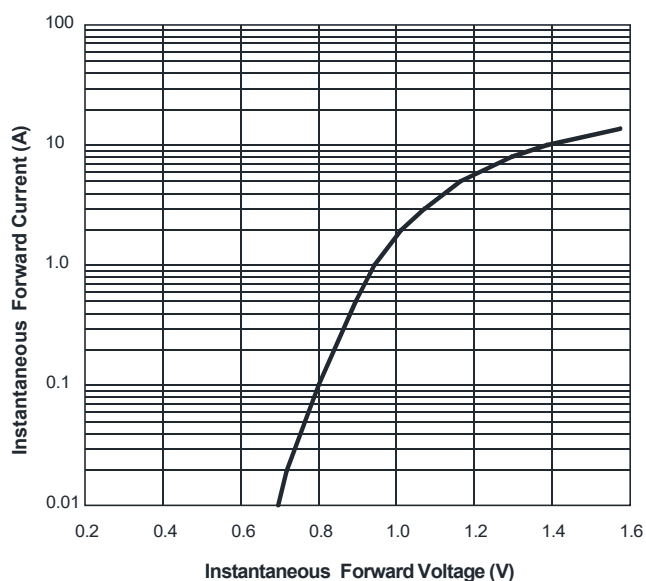


FIG.4: Typical Reverse Characteristics

