VOLTAGE RANGE
30 Volts
CURRENT
0.2 Ampere

## FEATURES

- Low Forward Voltage Drop
- Fast Switching
- Small Surface Mount Package
- PN Junction Guard Ring for Transient and ESD Protection
- Available in Lead Free Version






## MECHANICAL DATA

* Case: Molded plastic
* Epoxy: UL 94V-0 rate flame retardant
* Terminals: Solder plated, solderable per MIL-STD-202F method 208 guranteed
* Polarity: Color band denotes cathode end
* Mounting position: Any

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25℃ ambient temperature unless otherwies specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

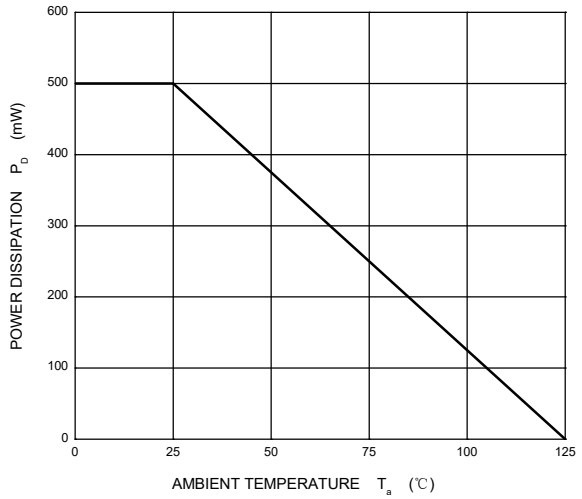
| Parameter | Symbol | Limit | Unit |
|---|---|---|---|
| **DC blocking voltage**<br>**RMS reverse voltage** | $V_R$<br>$V_{R(RMS)}$ | 30<br>21 | V |
| **Average rectified output current** | Io | 100 | mA |
| **Forward continuous current** | $I_F$ | 200 | mA |
| **Repetitive peak forward current** | $I_{FRM}$ | 300 | mA |
| **Non-repetitive Peak Forward Surge Current @t=8.3ms** | $I_{FSM}$ | 600 | mA |
| **Power dissipation** | Pd | 500 | mW |
| **Thermal resistance junction to ambient** | $R_{\theta JA}$ | 200 | ℃/W |
| **Operating Junction Temperature Range** | $T_J$ | -40 ~ +125 | ℃ |
| **Storage Temperature Range** | $T_{STG}$ | -55 ~ +150 | ℃ |

### Electrical Characteristics ($T_A$ = 25 °C unless otherwise noted)

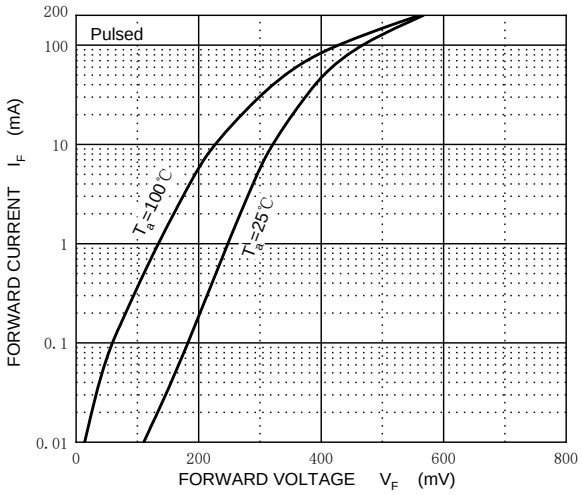
| Parameter | Symbol | Conditions | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| **Reverse breakdown voltage** | $V_{(BR)}$ | $I_R$=100μA | 30 | | | V |
| **Forward voltage** | $V_{F1}$ | $I_F$=0.1mA | | | 240 | mV |
| | $V_{F2}$ | $I_F$=1.0mA | | | 320 | mV |
| | $V_{F3}$ | $I_F$=10mA | | | 400 | mV |
| | $V_{F4}$ | $I_F$=30mA | | | 500 | mV |
| | $V_{F5}$ | $I_F$=100mA | | | 1000 | mV |
| **Reverse current** | $I_R$ | $V_R$=25V | | | 2.0 | uA |
| **Reverse recovery time** | $t_{rr}$ | $I_F$=10mA, $I_R$=10mA to 1mA ,<br>$R_L$=100Ω | | | 5.0 | ns |
| **Capacitance between terminals** | $C_T$ | $V_R$=1V,f=1MHz | | | 10 | pF |

## RATING AND CHARACTERISTIC CURVES

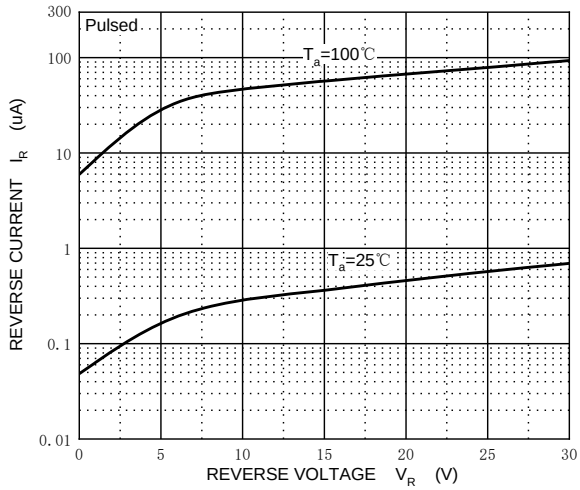
### FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE



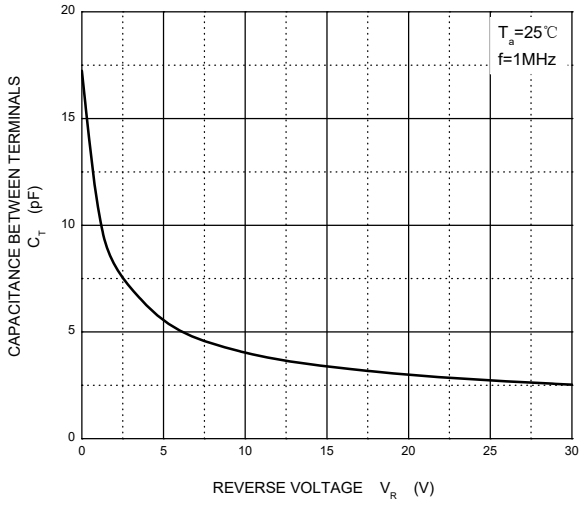

### FIG.2-TYPICAL FORWARD CHARACTERISTICS




### FIG.3 - TYPICAL REVERSE CHARACTERISTICS



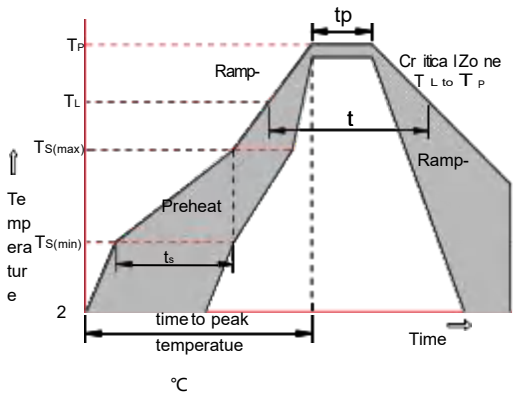

### FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



## Soldering parameters

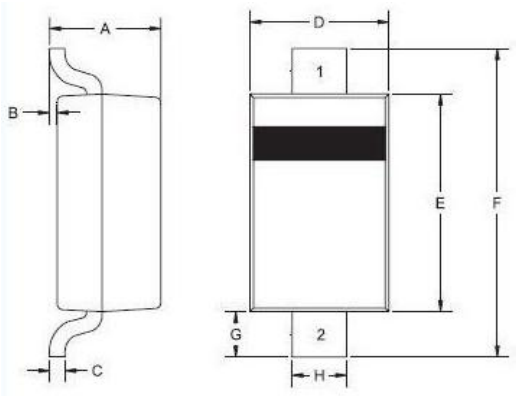
| Reflow Condition | | Pb-Free assembly (see as bellow) |
|---|---|---|
| Pre Heat | -Temperature Min ($T_{s(min)}$) | +150℃ |
| | -Temperature Max($T_{s(max)}$) | +200℃ |
| | -Time (Min to Max) (ts) | 60-180 secs. |
| Average ramp up rate (Liquid us Temp ($T_L$) to peak) | | 3℃/sec. Max |
| $T_{s(max)}$ to $T_L$ - Ramp-up Rate | | 3℃/sec. Max |
| Reflow | -Temperature($T_L$)(Liquid us) | +217℃ |
| | -Temperature($t_L$) | 60-150 secs. |
| Peak Temp ($T_p$) | | +260(+0/-5)℃ |
| Time within 5℃ of actual Peak Temp ($t_p$) | | 30 secs. Max |
| Ramp-down Rate | | 6℃/sec. Max |
| Time 25℃ to Peak Temp ($T_P$) | | 8 min. Max |
| Do not exceed | | +260℃ |

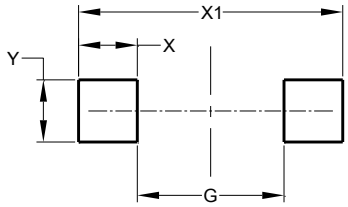
**FIG5:** Reflow condition




## Package Dimensions & Suggested Pad Layout

**SOD123**



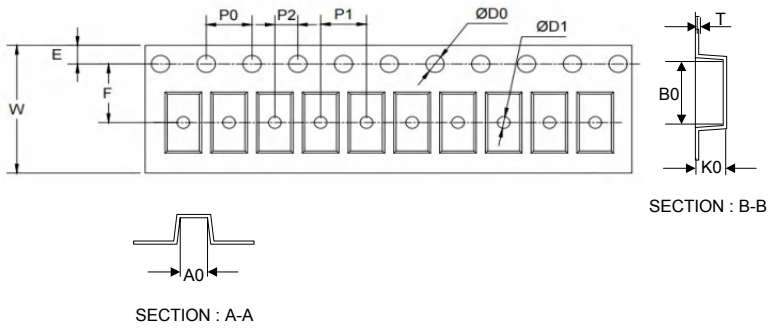




| SOD123 | | |
|---|---|---|
| **Dim** | **Min** | **Max** |
| **A** | 0.95 | 1.35 |
| **B** | 0.00 | 0.12 |
| **C** | - | 0.20 |
| **D** | 1.40 | 1.80 |
| **E** | 2.50 | 2.80 |
| **F** | 3.60 | 3.90 |
| **G** | 0.40 | - |
| **H** | 0.50 | 0.70 |
| **All Dimensions in mm** | | |

| Dimensions | Value (in mm) |
|---|---|
| **G** | 2.20 |
| **X** | 1.20 |
| **X1** | 4.60 |
| **Y** | 1.20 |

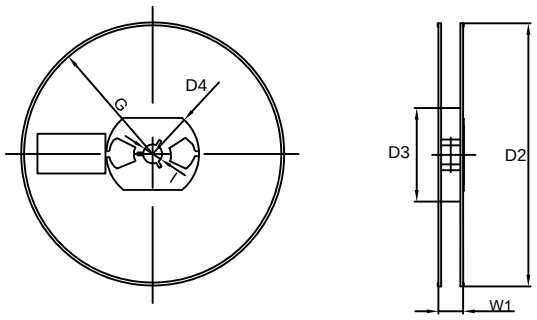
## Tape & rell specification

Tape




| Symbol | Dimension (mm) |
|---|---|
| P0 | 4.00±0.20 |
| P1 | 4.00±0.20 |
| P2 | 2.00±0.20 |
| D0 | 1.55±0.10 |
| D1 | 1.00±0.20 |
| E | 1.75±0.20 |
| F | 3.60±0.20 |
| W | 8.00±0.40 |
| A0 | 2.30±0.40 |
| B0 | 4.00±0.40 |
| K0 | 1.50±0.40 |
| T | 0.23±0.10 |

7” Reel




| | |
|---|---|
| D2 | 177.0±3.0 |
| D3 | 55Min. |
| D4 | R24.0±3.0 |
| G | R82.0±3.0 |
| I | 13.0±2.0 |
| W1 | 11.0±3.0 |

Quantity: 3000PCS