FUXINSEMI
INNOVATOR IN SEMICONDUCTOR

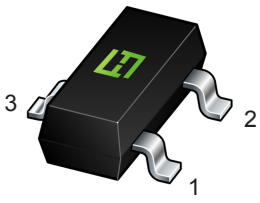
# 1SS181

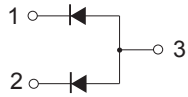
## Switching Diodes

### FEATURES

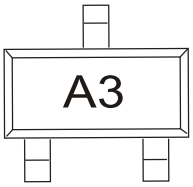
- Low forward voltage
- Fast reverse recovery time

SOT-23




### MARKING: A3




RoHS

Solid dot = Green molding compound device,if none,the normal device.

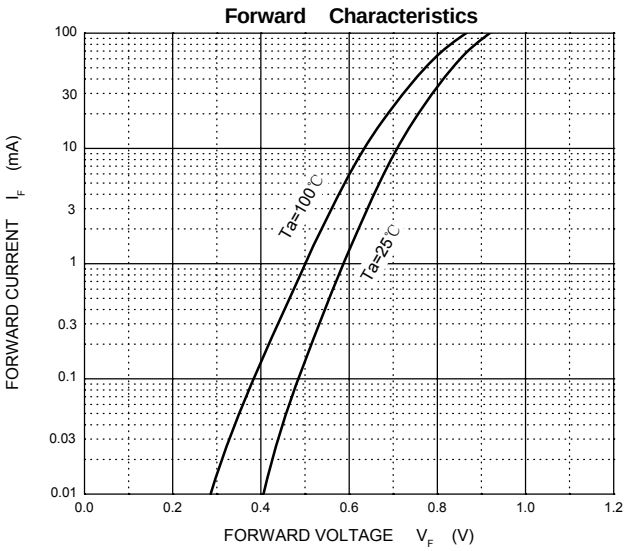
### Maximum Ratings @Ta=25℃

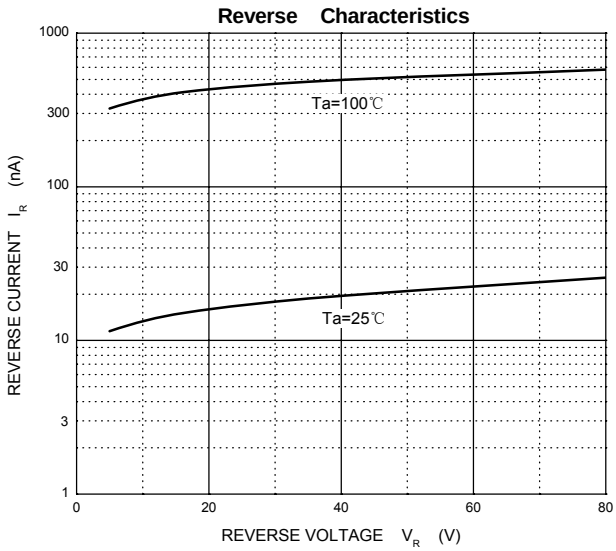
| Parameter | Symbol | Limit | Unit |
|---|---|---|---|
| Non-Repetitive Peak Reverse Voltage | $V_{RM}$ | 85 | V |
| DC Blocking Voltage | $V_R$ | 80 | V |
| Forward Continuous Current | $I_{FM}$ | 300 | mA |
| Average Rectified Output Current | $I_O$ | 100 | mA |
| Non-Repetitive Peak Forward Surge Current @t=8.3ms | $I_{FSM}$ | 2.0 | A |
| Power Dissipation | $P_D$ | 150 | mW |
| Thermal Resistance from Junction to Ambient | $R_{\theta JA}$ | 833 | ℃/W |
| Operation Junction and Storage Temperature Range | $T_J$,$T_{STG}$ | -55~+150 | ℃ |

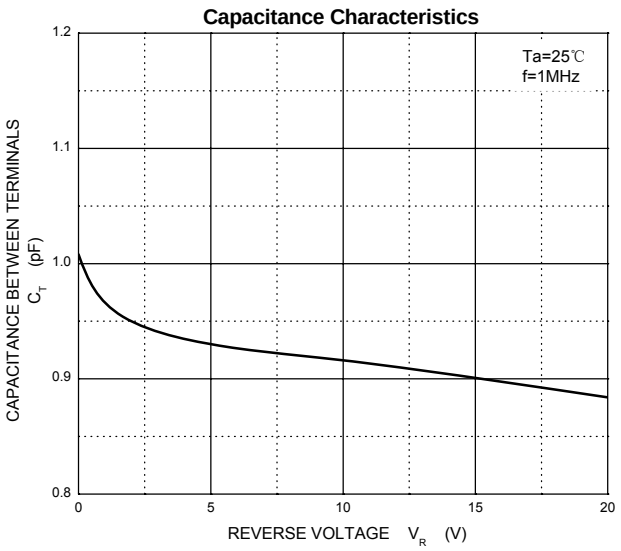
### Electrical Characteristics @Ta=25℃

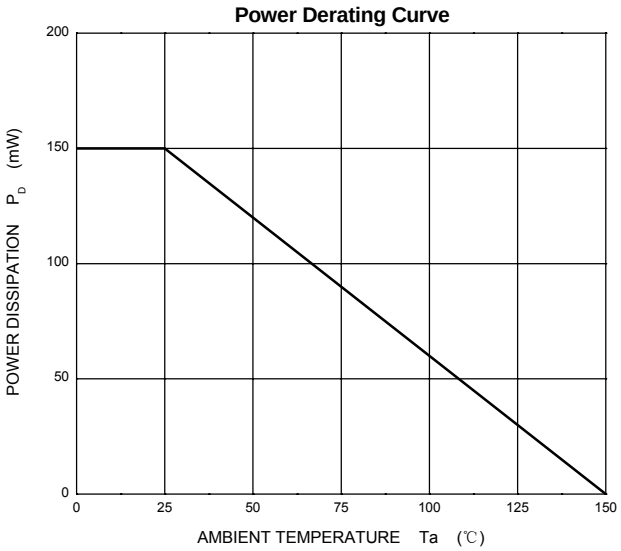
| Parameter | Symbol | Min | Typ | Max | Unit | Conditions |
|---|---|---|---|---|---|---|
| Reverse breakdown voltage | $V_{(BR)}$ | 80 | | | V | $I_R$=100μA |
| Forward voltage | $V_{F1}$ | | 0.61 | | V | $I_F$=1mA |
| | $V_{F2}$ | | 0.74 | | V | $I_F$=10mA |
| | $V_{F3}$ | | 0.92 | 1.2 | V | $I_F$=100mA |
| Reverse current | $I_{R1}$ | | | 0.1 | uA | $V_R$=30V |
| | $I_{R2}$ | | | 0.5 | uA | $V_R$=80V |
| Capacitance between terminals | $C_T$ | | 2.2 | 4.0 | pF | $V_R$=0,f=1MHz |
| Reverse recovery time | $t_{rr}$ | | 1.6 | 4.0 | ns | $I_F$=$I_R$=10mA,$I_{rr}$=0.1×$I_R$ |

## Typical Characteristics

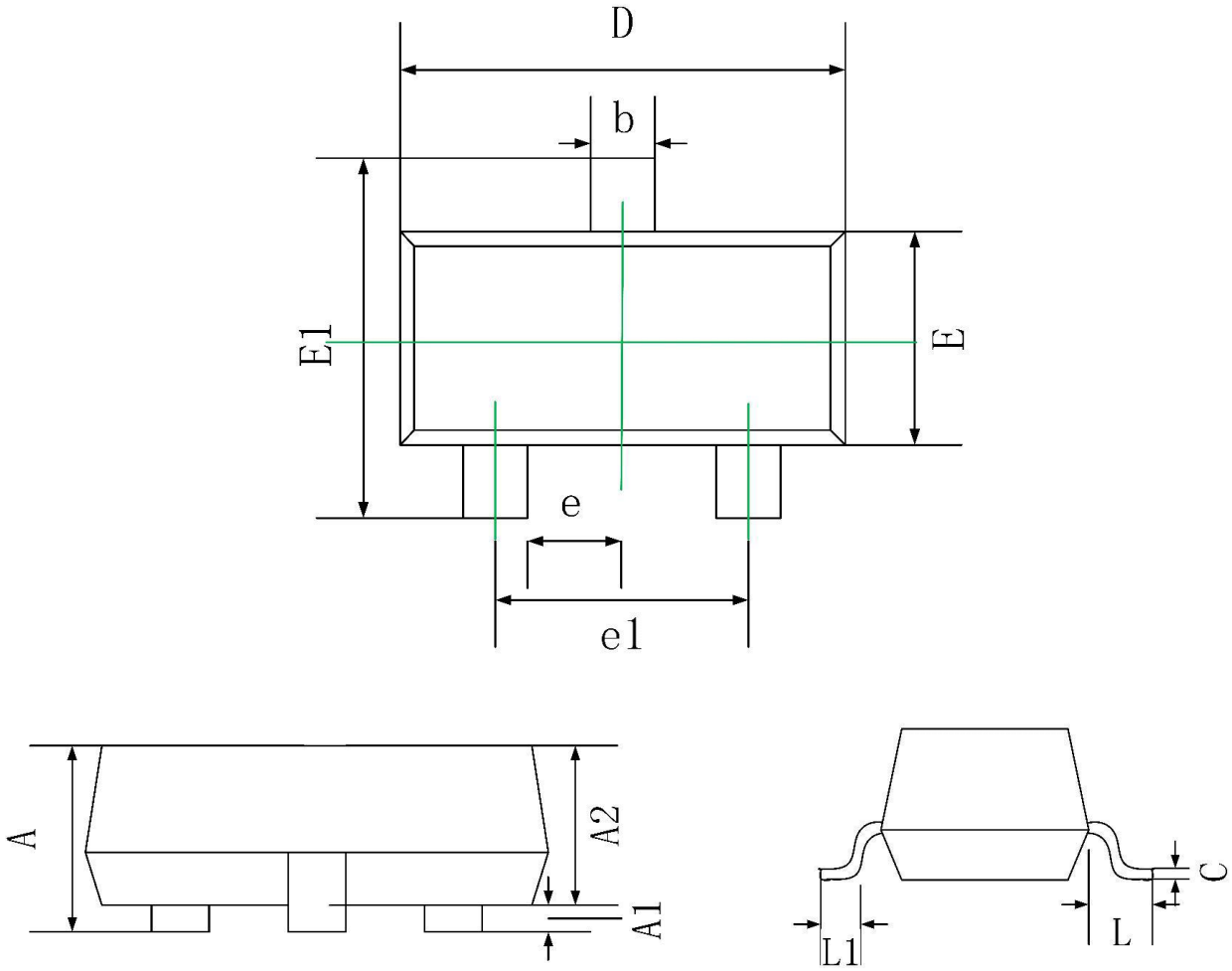


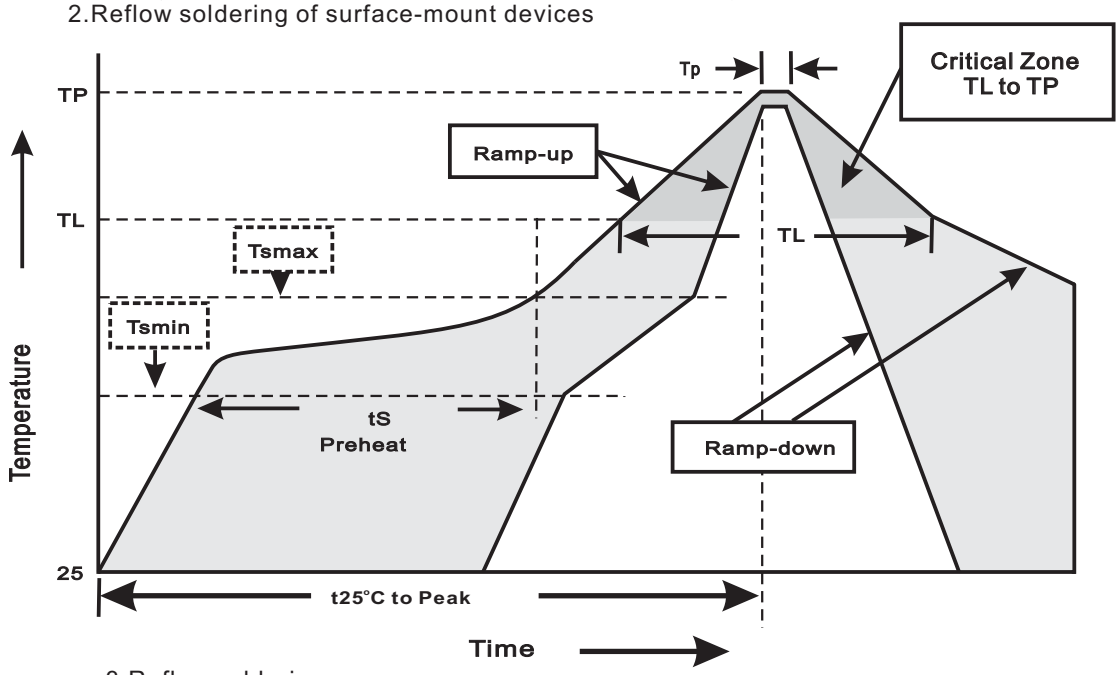
## SOT-23 Package Information




| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|---|---|---|---|---|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 0.500 | 0.012 | 0.020 |
| c | 0.080 | 0.150 | 0.003 | 0.006 |
| D | 2.800 | 3.000 | 0.110 | 0.118 |
| E | 1.200 | 1.400 | 0.047 | 0.055 |
| E1 | 2.250 | 2.550 | 0.089 | 0.100 |
| e | 0.950 TYP. | | 0.037 TYP. | |
| e1 | 1.800 | 2.000 | 0.071 | 0.079 |
| L | 0.550 REF. | | 0.022 REF. | |
| L1 | 0.300 | 0.500 | 0.012 | 0.020 |

## Suggested thermal profiles for soldering processes

1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
2.Reflow soldering of surface-mount devices




3.Reflow soldering

| Profile Feature | Soldering Condition |
|---|---|
| Average ramp-up rate($T_L$ to $T_P$) | <3°C/sec |
| Preheat<br>-Temperature Min(Tsmin)<br>-Temperature Max(Tsmax)<br>-Time(min to max)($t_s$) | <br>150°C<br>200°C<br>60~120sec |
| Tsmax to $T_L$<br>-Ramp-upRate | <br><3°C/sec |
| Time maintained above:<br>-Temperature($T_L$)<br>-Time($t_L$) | <br>217°C<br>60~260sec |
| Peak Temperature($T_P$) | 255°C-0/+5°C |
| Time within 5°C of actual Peak Temperature($t_P$) | 10~30sec |
| Ramp-down Rate | <6°C/sec |
| Time 25°C to Peak Temperature | <6minutes |