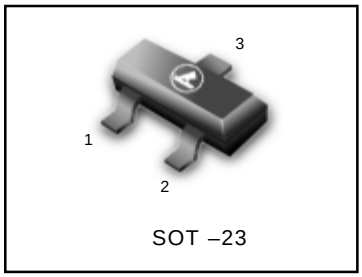
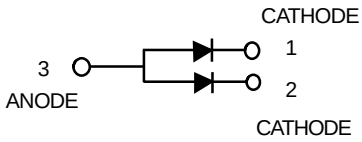
# Ultra High Speed Switching Application

**L1SS181LT1G**
**S-L1SS181LT1G**




- Low forward voltage : $V_{F(3)}$ = 0.92V (typ.)
- Fast reverse recovery time : $t_{rr}$ = 1.6ns (typ.)
- Small total capacitance : $C_T$ = 2.2pF (typ.)
- We declare that the material of product compliance with RoHS requirements.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.




## Driver Marking

L1SS181LT1G = A3

## Maximum Ratings ($T_A$ = 25°C)

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Maximum (peak) reverse voltage | $V_{RM}$ | 85 | V |
| Reverse voltage | $V_R$ | 80 | V |
| Maximum (peak) forward current | $I_{FM}$ | 300 * | mA |
| Average forward current | $I_O$ | 100 * | mA |
| Surge current (10ms) | $I_{FSM}$ | 2 * | A |
| Power dissipation | P | 150 | mW |
| Junction temperature | $T_j$ | 125 | °C |
| Storage temperature range | $T_{stg}$ | -55~+125 | °C |

* : Unit rating. Total rating = Unit rating × 1.5.

## Electrical Characteristics ($T_A$ = 25°C)

| Characteristic | Symbol | Test Circuit | Test Condition | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|---|
| Forward voltage | $V_{F(1)}$ | – | $I_F$ = 1mA | – | 0.61 | – | V |
| | $V_{F(2)}$ | – | $I_F$ = 10mA | – | 0.74 | – | |
| | $V_{F(3)}$ | – | $I_F$ = 100mA | – | 0.90 | 1.20 | |
| Reverse current | $I_{R(1)}$ | – | $V_R$ = 30V | – | – | 0.1 | μA |
| | $I_{R(2)}$ | – | $V_R$ = 80V | – | – | 0.5 | |
| Total capacitance | $C_T$ | – | $V_R$ = 0, f = 1MHz | – | 2.2 | 4.0 | pF |
| Reverse recovery time | $t_{rr}$ | – | $I_F$ = 10mA (Fig.5) | – | 1.6 | 4.0 | ns |

## Ordering Information

| Device | Marking | Shipping |
|---|---|---|
| L1SS181LT1G<br>S-L1SS181LT1G | A3 | 3000/Tape&Reel |
| L1SS181LT3G<br>S-L1SS181LT3G | A3 | 10000/Tape&Reel |

**L1SS181LT1G,S-L1SS181LT1G**

## Electrical characteristic curves

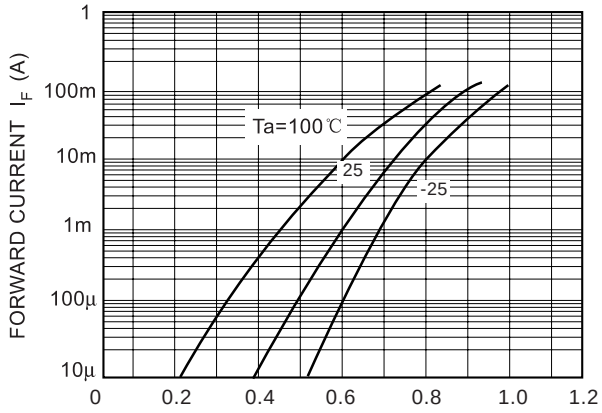



Fig.1 FORWARD VOLTAGE $V_F$(V)

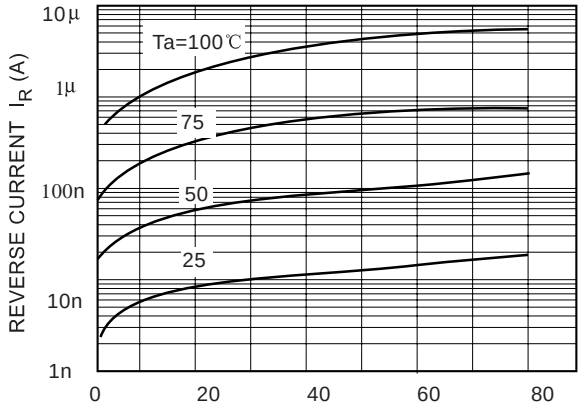



Fig.2 REVERSE VOLTAGE $V_R$(V)

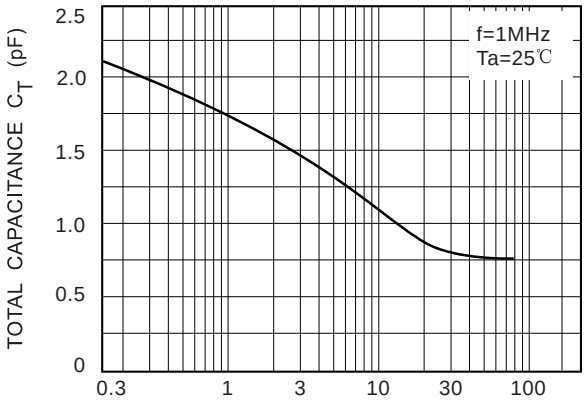



Fig.3 REVERSE VOLTAGE $V_R$(V)

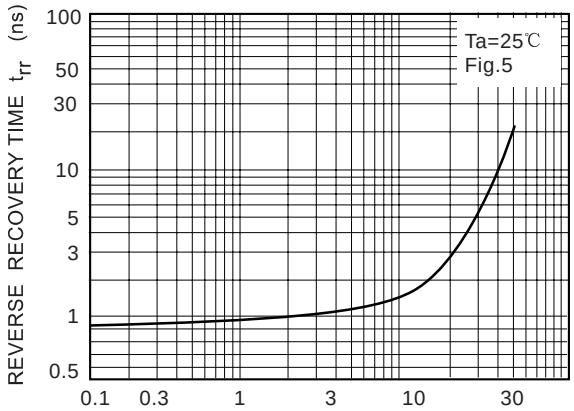
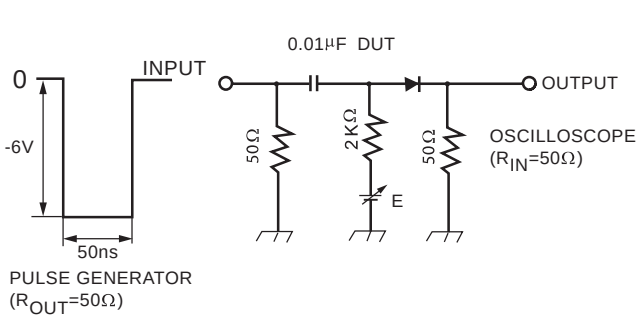



Fig.4 FORWARD CURRENT $I_F$(mA)



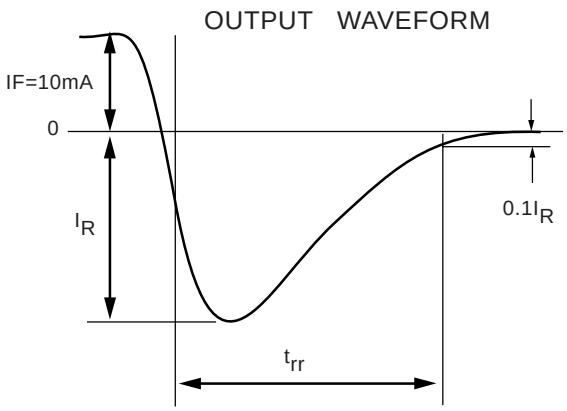
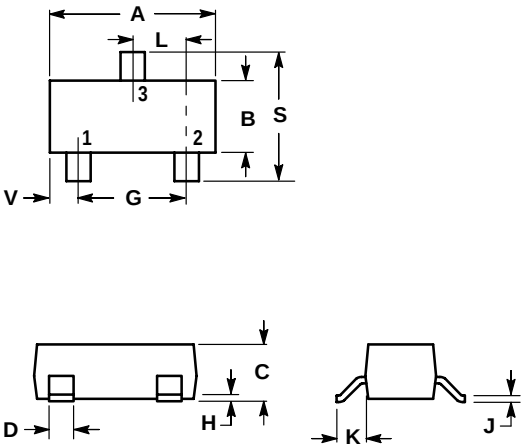




Fig.5 Reverse recovery time ($t_{rr}$) test circuit

**L1SS181LT1G,S-L1SS181LT1G**

## SOT–23




NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M,1982
2. CONTROLLING DIMENSION: INCH.

| DIM | INCHES | | MILLIMETERS | |
|---|---|---|---|---|
| | MIN | MAX | MIN | MAX |
| A | 0.1102 | 0.1197 | 2.80 | 3.04 |
| B | 0.0472 | 0.0551 | 1.20 | 1.40 |
| C | 0.0350 | 0.0440 | 0.89 | 1.11 |
| D | 0.0150 | 0.0200 | 0.37 | 0.50 |
| G | 0.0701 | 0.0807 | 1.78 | 2.04 |
| H | 0.0005 | 0.0040 | 0.013 | 0.100 |
| J | 0.0034 | 0.0070 | 0.085 | 0.177 |
| K | 0.0140 | 0.0285 | 0.35 | 0.69 |
| L | 0.0350 | 0.0401 | 0.89 | 1.02 |
| S | 0.0830 | 0.1039 | 2.10 | 2.64 |
| V | 0.0177 | 0.0236 | 0.45 | 0.60 |

PIN 1. BASE
2. EMITTER
3. COLLECTOR

