# LJ2314

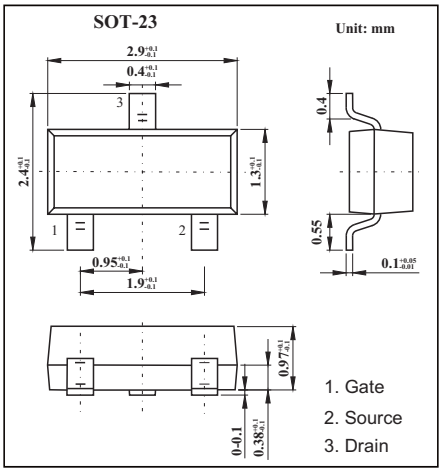
## SOT-23 Plastic-Encapsulate MOSFETS

### Features

- TrenchFET
- PowerMOSFET ESD Protected: 3000 V
- N-Channel 20-V (D-S) MOSFET

### MECHANICAL DATA

- Case style:SOT-23molded plastic
- Mounting position:any




## MAXIMUM RATINGS AND CHARACTERISTICS

@ 25°C Ambient Temperature (unless otherwise noted)

| Parameter | | Symbol | 5secs | Steady State | Unit |
|---|---|---|---|---|---|
| Drain-Source Voltage | | VDS | 20 | | V |
| Gate-Source Voltage | | VGS | ±12 | | |
| Continuous Drain Current (TJ =150℃) *1 | TA = 25 ℃ | ID | 4.9 | 3.77 | A |
| | TA = 70 ℃ | | 3.9 | 3 | |
| Pulsed Drain Current | | IDM | 15 | | |
| Avalanche Current*2 | L = 0.1 mH | IAS | 15 | | |
| Single Avalanche Energy | L = 0.1 mH | EAS | 11.25 | | |
| Continuous Source Current (Diode Conduction)*1 | | IS | 1 | | |
| Power Dissipation *1 | TA = 25℃ | PD | 1.25 | 0.75 | W |
| | TA = 70 ℃ | | 0.8 | 0.48 | |
| Operating Junction and Storage Temperature Range | | TJ, T stg | -55to150 | | ℃ |

*1 Surface Mounted on 1"X 1" FR4 Board.

*2 Pulse width limited by maximum junction temperature. Thermal Resistance Ratings

| Parameter | | Symbol | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Maximum Junction-to-Ambient * | t≤ 5sec | RthJA | 75 | 100 | ℃/W |
| | Steady-State | | 120 | 166 | |
| Maximum Junction-to-Foot (Drain) | Steady-State | RthJF | 40 | 50 | |

* Surface Mounted on 1"X 1" FR4 Board.

## MOSFET ELECTRICAL CHARACTERISTICS Ta=25 ℃ unless otherwise specified

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Drain-Source Breakdown Voltage | V(BR)DSS | VGS = 0V, ID = 250 μA | 20 | | | V |
| Gate Threshold Voltage | VGS(th) | VDS = VGS, ID =250 μA | 0.45 | | | V |
| Gate-Body Leakage | IGSS | VDS = 0V, VGS =±4 . 5 V | | | ±1.5 | μA |
| Zero Gate Voltage Drain Current | IDSS | VDS =16V, VGS = 0V | | | 1 | μA |
| | | VDS = 16V, VGS = 0V, TJ = 70℃ | | | 75 | |
| On-State Drain Current* | ID(on) | VDS ≥10 V, VGS = 4.5V | 15 | | | A |
| DrainSourceOn State Resistance* | RDS(on) | VGS = 4.5V, ID =5.0A | | 0.027 | 0.033 | Ω |
| | | VGS = 2.5V, ID = 4.5A | | 0.033 | 0.040 | |
| | | VGS = 1.8V, ID =4.0A | | 0.042 | 0.051 | |
| Forward Transconductanceb | gfs | VDS = 15V, ID = 5.0A | | 40 | | S |
| Schottky Diode Forward Voltage* | VSD | IS = 1.0A, VGS = 0V | | 0.8 | 1.2 | V |
| Total Gate Charge | Qg | VDS = 10V, VGS = 4.5V, ID = 5.0A | | 11.0 | 14.0 | nC |
| Gate-Source Charge | Qgs | | | 1.5 | | |
| Gate-Drain Charge | Qgd | | | 2.1 | | |
| Turn-On Delay Time | td(on) | VDD=10V,RL=10Ω ID=1.0A,VGEN=4.5V,RG=6Ω* | | 0.53 | 0.8 | ns |
| Rise Time | tr | | | 1.4 | 2.2 | |
| Turn-Off Delay Time | td(off) | | | 13.5 | 20 | |
| Fall Time | tf | | | 5.9 | 9 | |
| Source-Drain Reverse Recovery Time | trr | IF = 1.0A, di/dt = 100A/μs | | 13 | 25 | ns |

* Pulse test :Pulse width ≤300μs,duty cycle≤2%