HFZT

# LJ2306

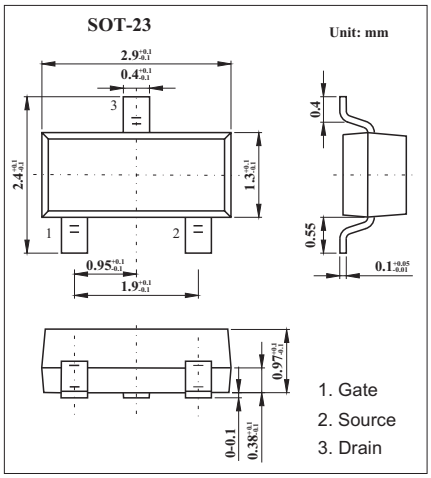
## SOT-23 Plastic-Encapsulate MOSFETS

### Features

- TrenchFET Power MOSFET
- 100% Rg Tested
- N-Channel 30-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 | Rating | Unit |
|---|---|---|---|
| Drain-source voltage | $V_{DS}$ | 30 | V |
| Gate-source voltage | $V_{GS}$ | ±20 | V |
| Continuous drain current ($T_J$ = 150℃) *1 , 2 $T_A$=25 ℃ $T_A$=70℃ | $I_D$ | 3.5<br>2.8 | A |
| Pulsed drain current | $I_{DM}$ | 16 | A |
| Continuous source current (diode conduction) *1,2 | $I_S$ | 1.25 | A |
| Maximum Power dissipation *1,2 $T_A$=25℃<br>$T_A$=70℃ | $P_D$ | 1.25<br>0.8 | W |
| Operating junction and storage temperature range | $T_j$,$T_{stg}$ | - 5 5 t o + 1 5 0 | ℃ |
| Maximum Junction to Ambienta Steady State | $R_{thJA}$ | 100<br>130 | ℃/W |

*1 Surface Mounted on FR4 Board.
*2 t≤5 sec

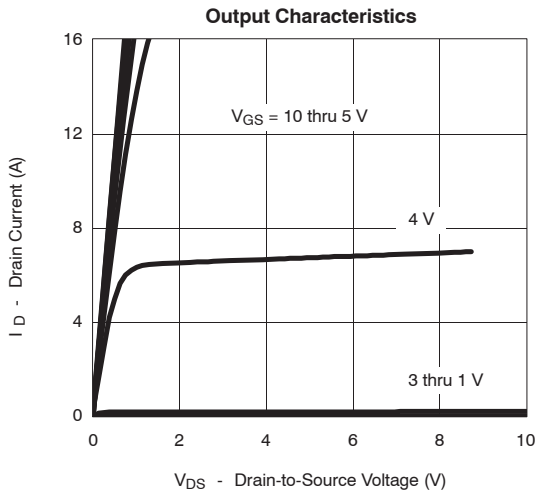
## MOSFET ELECTRICAL CHARACTERISTICS Ta=25 ℃ unless otherwise specified

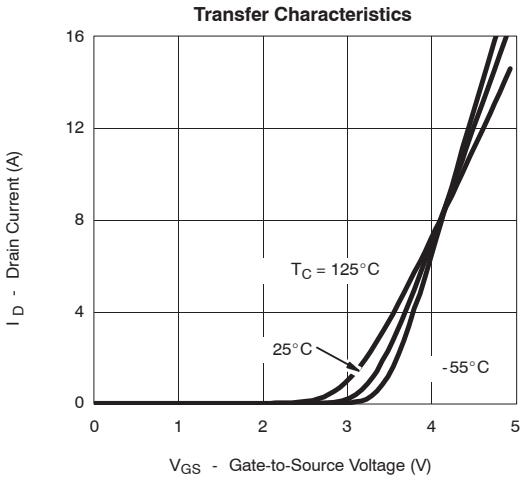
| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS}$ = 0 V , $I_D$ = 250 μA | 30 | | | V |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS}$ = V GS, $I_D$ = 250 μA | 1 | | | |
| Gate-body leakage | $I_{GSS}$ | $V_{DS}$ = 0 V , $V_{GS}$ = ± 20 V | | | ±100 | nA |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ = 30V, $V_{GS}$ = 0 V | | | 0 . 5 | μA |
| | | $V_{DS}$ =30V, $V_{GS}$ = 0 V , $T_J$ = 5 5 ℃ | | | 10 | |
| On-state drain current | $I_{D(on)}$ | $V_{DS}$ ≥ 4.5 V, $V_{GS}$ = 1 0 V | 6 | | | A |
| | | $V_{DS}$ ≥ 4.5 V, $V_{GS}$ = 4 . 5 V | 4 | | | |
| Drain-source on-state resistance | $r_{DS(on)}$ | $V_{GS}$ = 1 0 V , $I_D$ = 3.5 A | | 0.046 | 0.057 | Ω |
| | | $V_{GS}$ =4.5 V, $I_D$ =2.8 A | | 0.070 | 0.094 | |
| Forward transconductance | $g_{fs}$ | $V_{DS}$ =4.5 V, $I_D$ = 3.5 A | | 6.9 | | S |
| Diode forward voltage | $V_{SD}$ | $I_S$ = 1 . 2 5 A , $V_{GS}$ = 0 V | | 0 . 8 | 1 . 2 | V |
| gate charge * | $Q_g$ | $V_{DS}$ = 15V ,$V_{GS}$ =5V , $I_D$= 3.5 A | | 4.2 | 7 | nC |
| Total gate charge * | $Q_{gt}$ | $V_{DS}$ = 15V ,$V_{GS}$ = 1 0 V , $I_D$= 3 . 5 A | | 8.5 | 20 | nC |
| Gate-source charge * | $Q_{gs}$ | | | 1.9 | | |
| Gate-drain charge * | $Q_{gd}$ | | | 1.35 | | |
| Gate Resistance | Rg | | 0.5 | | 2.4 | Ω |
| Input capacitance * | $C_{iss}$ | $V_{DS}$ = 15V ,$V_{GS}$ = 0 , f = 1 M H z | | 555 | | pF |
| Output capacitance * | $C_{oss}$ | | | 120 | | |
| Reverse transfer capacitance * | $C_{rss}$ | | | 60 | | |
| Turn-on time | $t_{d(on)}$ | $V_{DD}$ = 1 5 V , $R_L$ = 15Ω , $I_D$ = 1 A , $V_{GEN}$ =-10V , $R_G$ = 6 Ω | | 9 | 02 | ns |
| | $t_r$ | | | 7.5 | 18 | |
| Turn-off time | $t_{d(off)}$ | | | 17 | 35 | |
| | $t_f$ | | | 5.2 | 12 | |

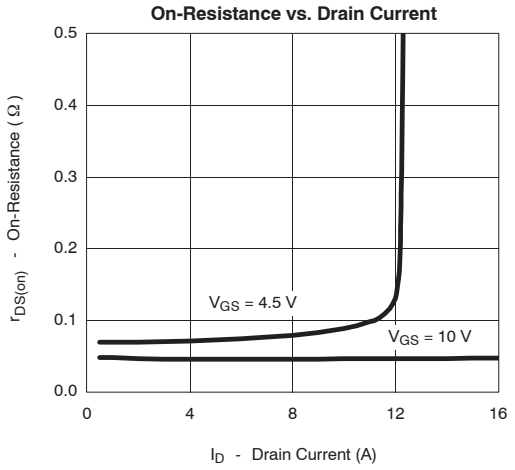
* P u l s e t e s t : P W ≤ 300 μs duty cycle ≤ 2%.

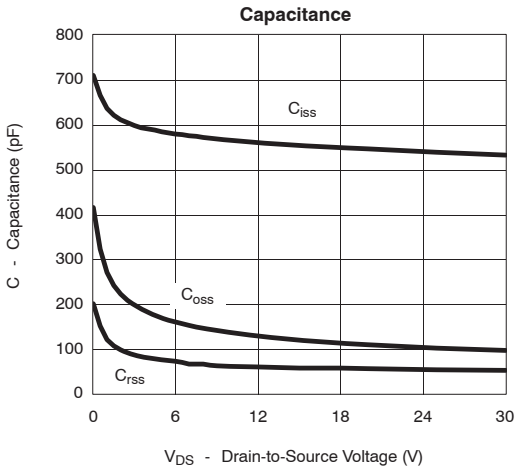
# RATINGS AND CHARACTERISTIC CURVES

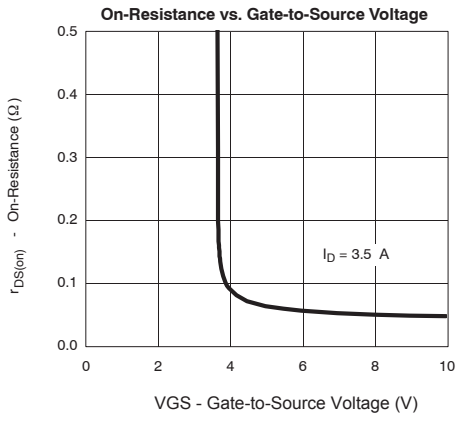
## Typical Characteristics

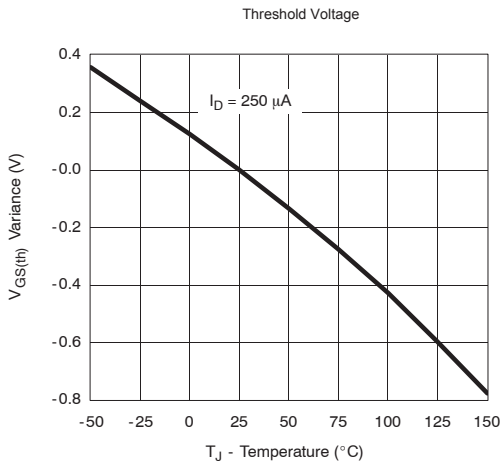


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