# Dual P-Channel 2.5-V (G-S) MOSFET

# KI1903DL

■ Features

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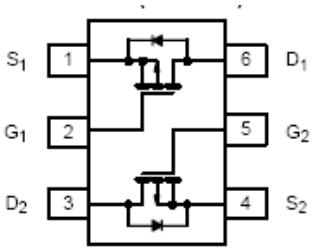


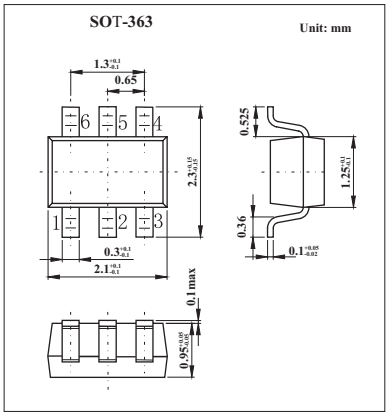


■ Absolute Maximum Ratings Ta = 25℃

| Parameter | Symbol | 5 secs | Steady State | Unit |
|---|---|---|---|---|
| Drain-source voltage | $V_{DS}$ | -20 | | V |
| Gate-source voltage | $V_{GS}$ | ±12 | | V |
| Continuous drain current ($T_J$ = 150℃)* $T_A$=25℃<br>$T_A$=85℃ | $I_D$ | ± 0.44<br>± 0.31 | ±0.41<br>± 0.30 | A |
| Pulsed drain current | $I_{DM}$ | ±1.0 | | A |
| Continuous source current (diode conduction) * | $I_S$ | -0.25 | -0.23 | A |
| Power dissipation * $T_A$=25℃<br>$T_A$=85℃ | $P_D$ | 0.30<br>0.16 | 0.27<br>0.14 | W |
| Operating junction and storage temperature range | $T_J$,$T_{stg}$ | -55 to +150 | | ℃ |

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

■ Thermal Resistance Ratings Ta = 25℃

| Parameter | | Symbol | Typical | Maximum | Unit |
|---|---|---|---|---|---|
| Maximum Junction-to-Ambient* | t≤5 sec | $R_{thJA}$ | 360 | 415 | ℃/W |
| | Steady State | | 400 | 460 | |
| Maximum Junction-to-Foot (Drain) | Steady State | $R_{thJF}$ | 300 | 350 | |

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

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## ■ Electrical Characteristics Ta = 25℃

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS}$ = $V_{GS}$, $I_D$ = -250μA | -0.6 | | | V |
| Gate-body leakage | $I_{GSS}$ | $V_{DS}$ = 0 V, $V_{GS}$ = ±12 V | | | ±100 | nA |
| Zero gate voltage drain current | $I_{DSS}$ | $V_{DS}$ = -16 V, $V_{GS}$ = 0 V | | | -1 | μA |
| | | $V_{DS}$ =-16 V, $V_{GS}$ = 0 V, $T_J$ = 85 ℃ | | | -5 | |
| On-state drain current | $I_{D(on)}$ | $V_{DS}$ =-5 V, $V_{GS}$ = -4.5 V | -1.0 | | | A |
| Drain-source on-state resistance | $r_{DS(on)}$ | $V_{GS}$ = -4.5 V, $I_D$ = -0.41 A | | 0.850 | 0.995 | Ω |
| | | $V_{GS}$ = -3.6 V, $I_D$ = -0.38 A | | 1.0 | 1.190 | |
| | | $V_{GS}$ = -2.5V, $I_D$ =-0.25A | | 1.4 | 1.80 | |
| Forward transconductance | $g_{fs}$ | $V_{DS}$ = -10 V, $I_D$ = -0.41 A | | 0.8 | | S |
| Diode forward voltage | $V_{SD}$ | $I_S$ = -0.23 A, $V_{GS}$ = 0 V | | -0.8 | -1.2 | V |
| Total gate charge * | $Q_g$ | $V_{DS}$ =-10V ,$V_{GS}$ = -4.5 V , $I_D$= -0.41A | | 1.2 | 1.8 | nC |
| Gate-source charge * | $Q_{gs}$ | | | 0.45 | | |
| Gate-drain charge * | $Q_{gd}$ | | | 0.25 | | |
| Turn-on time | $t_{d(on)}$ | $V_{DD}$ = -10V , $R_L$ = 20Ω , $I_D$ =-0.5A , $V_{GEN}$ =-4.5V , $R_G$ = 6Ω | | 7.5 | 15 | ns |
| | $t_r$ | | | 20 | 40 | |
| Turn-off time | $t_{d(off)}$ | | | 8.5 | 17 | |
| | $t_f$ | | | 12 | 24 | |
| Source-Drain Reverse Recovery Time | trr | $I_F$ = -0.23 A, $d_i/d_t$ = 100 A/μs | | 25 | 40 | |

* Pulse test: PW ≤ 300 μs duty cycle ≤ 2%.

## ■ Marking

| Marking | QA |
|---|---|