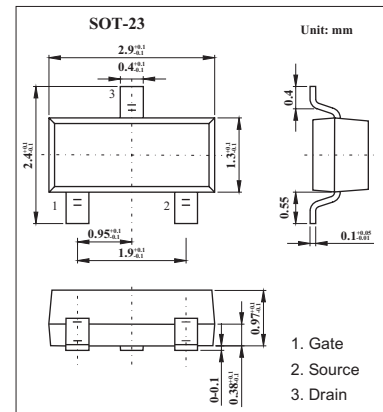
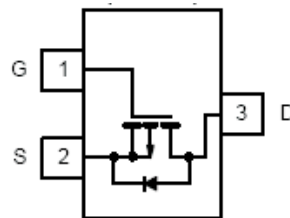


P-Channel 1.25-W, 1.8-V (G-S) Mosfet

KI2305DS

■ Features

- P-Channel 1.25-W, 1.8-V (G-S) MOSFET.

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter | Symbol | Rating | Unit |
|--|----------------|-------------|--------------------|
| Drain-source voltage | V_{DS} | -8 | V |
| Gate-source voltage | V_{GS} | ± 8 | V |
| Continuous drain current ($T_J = 150^\circ\text{C}$) | I_D | ± 3.5 | A |
| $T_A = 25^\circ\text{C}$ | | ± 2.8 | |
| $T_A = 70^\circ\text{C}$ | | | |
| Pulsed drain current | I_{DM} | ± 12 | A |
| Continuous source current (diode conduction) * | I_S | -1.6 | A |
| Power dissipation * | P_D | 1.25 | W |
| $T_A = 25^\circ\text{C}$ | | 0.8 | |
| $T_A = 70^\circ\text{C}$ | | | |
| Operating junction and storage temperature range | T_J, T_{stg} | -55 to +150 | $^\circ\text{C}$ |
| Junction-to-ambient * | R_{thJA} | 100 | $^\circ\text{C/W}$ |
| $t \leq 5 \text{ sec}$ | | | |
| Steady State | | 130 | |

* Surface mounted on FR4 board, $t \leq 5 \text{ sec}$.

KI2305DS

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditions | Min | Typ | Max | Unit |
|----------------------------------|---------------|---|-------|-------|-----------|---------------|
| Drain-source breakdown voltage | $V_{(BR)DSS}$ | $V_{GS} = 0\text{ V}, I_D = -10\ \mu\text{A}$ | -8 | | | V |
| Gate threshold voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\ \mu\text{A}$ | -0.45 | | | |
| Gate-body leakage | I_{GSS} | $V_{DS} = 0\text{ V}, V_{GS} = \pm 8\text{ V}$ | | | ± 100 | nA |
| Zero gate voltage drain current | I_{DSS} | $V_{DS} = -6.4\text{ V}, V_{GS} = 0\text{ V}$ | | | -1 | μA |
| | | $V_{DS} = -6.4\text{ V}, V_{GS} = 0\text{ V}, T_J = 55\text{ }^\circ\text{C}$ | | | -10 | |
| On-state drain current | $I_{D(on)}$ | $V_{DS} \leq -5\text{ V}, V_{GS} = -4.5\text{ V}$ | -6 | | | A |
| | | $V_{DS} \leq -5\text{ V}, V_{GS} = -2.5\text{ V}$ | -3 | | | |
| Drain-source on-state resistance | $r_{DS(on)}$ | $V_{GS} = -4.5\text{ V}, I_D = -3.5\text{ A}$ | | 0.044 | 0.052 | Ω |
| | | $V_{GS} = -2.5\text{ V}, I_D = -3.0\text{ A}$ | | 0.060 | 0.071 | |
| | | $V_{GS} = -1.8\text{ V}, I_D = -2.0\text{ A}$ | | 0.087 | 0.108 | |
| Forward transconductance | g_{fs} | $V_{DS} = -5\text{ V}, I_D = -3.5\text{ A}$ | | 8.5 | | S |
| Diode forward voltage | V_{SD} | $I_S = -1.6\text{ A}, V_{GS} = 0\text{ V}$ | | | -1.2 | V |
| Total gate charge * | Q_g | $V_{DS} = -4\text{ V}, V_{GS} = -4.5\text{ V}, I_D = -3.5\text{ A}$ | | 10 | 15 | nC |
| Gate-source charge * | Q_{gs} | | | 2 | | |
| Gate-drain charge * | Q_{gd} | | | 2 | | |
| Input capacitance * | C_{iss} | $V_{DS} = -4\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$ | | 1245 | | pF |
| Output capacitance * | C_{oss} | | | 375 | | |
| Reverse transfer capacitance * | C_{rss} | | | 210 | | |
| Turn-on time | $t_{d(on)}$ | $V_{DD} = -4\text{ V}, R_L = 4\ \Omega,$ $I_D = -1\text{ A}, V_{GEN} = -4.5\text{ V}, R_G = 6\ \Omega$ | | 13 | 20 | ns |
| | t_r | | | 25 | 40 | |
| Turn-off time | $t_{d(off)}$ | | | 55 | 80 | |
| | t_f | | | 19 | 35 | |

* Pulse test: $PW \leq 300\ \mu\text{s}$ duty cycle $\leq 2\%$.

■ Marking

| | |
|---------|----|
| Marking | A5 |
|---------|----|