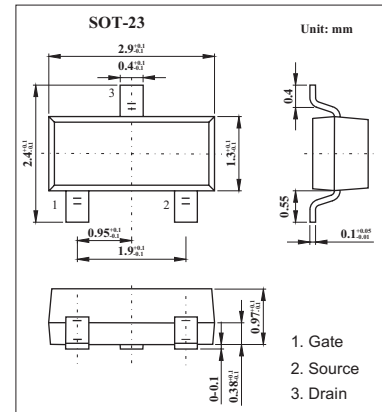
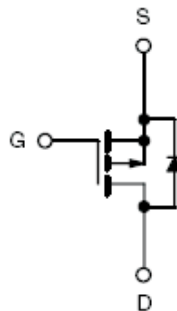
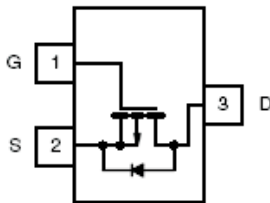


P-Channel 12-V (D-S) MOSFET

KI2337DS

■ Features

- TrenchFET Power MOSFET

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

| Parameter | Symbol | 5 sec | Unit |
|---|-----------|---------------|------------------|
| Drain-Source Voltage | V_{DS} | -80 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | V |
| Continuous Drain Current ($T_J=150^\circ\text{C}$) $T_C=25^\circ\text{C}$ $T_C=70^\circ\text{C}$ | I_D | -2.2 -1.75 | A |
| Continuous Drain Current ($T_J=150^\circ\text{C}$) *1,2 $T_A=25^\circ\text{C}$ $T_A=70^\circ\text{C}$ | I_D | -1.2 -0.96 | A |
| Pulsed Drain Current | I_{DM} | -7 | A |
| Continuous Source Drain Diode Current $T_C=25^\circ\text{C}$ | I_S | -2.1 | |
| Continuous Source Drain Diode Current *1,2 $T_A=25^\circ\text{C}$ | I_S | -0.63 | |
| Avalanche Current $L = 0.1 \text{ mH}$ | I_{AS} | 11 | mJ |
| Single-Pulse Avalanche Energy $L = 0.1 \text{ mH}$ | E_{AS} | 6.0 | |
| Power Dissipation $T_C=25^\circ\text{C}$ $T_C=70^\circ\text{C}$ | P_D | 2.5 1.6 | W |
| Power Dissipation *1,2 $T_A=25^\circ\text{C}$ $T_A=70^\circ\text{C}$ | P_D | 0.76 0.48 | |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{stg} | -55 to +150 | $^\circ\text{C}$ |
| Soldering Recommendations (Peak Temperature)*3 | | 260 | $^\circ\text{C}$ |

*1 Surface mounted on 1" x 1" FR4 Board.

*2 $t = 10 \text{ sec}$

*3 Maximum under steady state conditions is $166^\circ\text{C}/\text{W}$.

KI2337DS

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---------------------------------------|--------------------------------------|---|------|-------|-------|-------|
| Drain-Source Breakdown Voltage | V _{DS} | V _{GS} = 0 V, I _D = -250 μA | -80 | | | V |
| VDS Temperature Coefficient | ΔV _{DS} /T _J | I _D = -250 μA | | -35.8 | | mV/°C |
| VGS(th) Temperature Coefficient | ΔV _{GS(th)} /T _J | | 5.45 | | | |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = -250 μA | -2 | | -4 | V |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0 V, V _{GS} = ±20 V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = -80V, V _{GS} = 0 V | | | -1 | μA |
| | | V _{DS} = -80 V, V _{GS} = 0 V, T _J = 55 °C | | | -10 | |
| On-State Drain Current | I _{D(on)} | V _{DS} ≥ -5V, V _{GS} = -10V | -7 | | | A |
| Drain-Source On-State Resistance * | r _{DS(on)} | V _{GS} = -10V, I _D = -1.2A | | 0.216 | 0.270 | Ω |
| | | V _{GS} = -6V, I _D = -1.1 A | | 0.242 | 0.303 | |
| Forward Transconductance * | g _{fs} | V _{DS} = -15 V, I _D = -1.2A | | 4.3 | | S |
| Input Capacitance | C _{iss} | V _{DS} = -40 V, V _{GS} = 0, f = 1 MHz | | 500 | | pF |
| Output Capacitance | C _{oss} | | 40 | | | |
| Reverse Transfer Capacitance | C _{rss} | | 25 | | | |
| Total Gate Charge | Q _g | V _{DS} = -40 V, V _{GS} = -10 V, I _D = -1.2 A | | 11 | 17.0 | |
| Total Gate Charge | Q _g | V _{DS} = -40V, V _{GS} = -6 V, I _D = -1.2A | | 7 | 11.0 | nC |
| Gate-Source Charge | Q _{gs} | | 2.1 | | | |
| Gate-Drain Charge | Q _{gd} | | 3.2 | | | |
| Gate Resistance | R _g | f = 1 MHz | | 4.8 | | Ω |
| Turn-On Delay Time | t _{d(on)} | V _{DD} = -40V, R _L = 42 Ω, I _D = -0.96A, V _{GEN} = -10V, R _G = 1 Ω | | 10 | 15 | ns |
| Rise Time | t _r | | 15 | 23 | | |
| Turn-Off Delay Time | t _{d(off)} | | 20 | 30 | | |
| Fall Time | t _f | | 15 | 23 | | |
| Turn-On Delay Time | t _{d(on)} | V _{DD} = -40V, R _L = 42 Ω, I _D = -0.96A, V _{GEN} = -6V, R _G = 1 Ω | | 15 | 23 | ns |
| Rise Time | t _r | | 18 | 27 | | |
| Turn-Off Delay Time | t _{d(off)} | | 20 | 30 | | |
| Fall Time | t _f | | 12 | 18 | | |
| Continuous Source-Drain Diode Current | I _S | T _C = 25°C | | | -2.1 | A |
| Pulse Diode Forward Current* | I _{SM} | | | | -7 | |
| Body Diode Voltage | V _S | I _S = 0.63 A | | -0.8 | -1.2 | V |
| Body Diode Reverse Recovery Time | t _{rr} | I _F = 0.63 A, di/dt = 100 A/μs, T _J = 25°C | | 30 | 45 | ns |
| Body Diode Reverse Recovery Charge | Q _{rr} | | 45 | 70 | nC | |
| Reverse Recovery Fall Time | t _a | | 25 | | ns | |
| Reverse Recovery Rise Time | t _b | | 5 | | | |

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

■ Marking

| | |
|---------|----|
| Marking | E7 |
|---------|----|