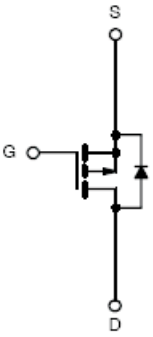
# P-Channel 20-V (D-S) MOSFET

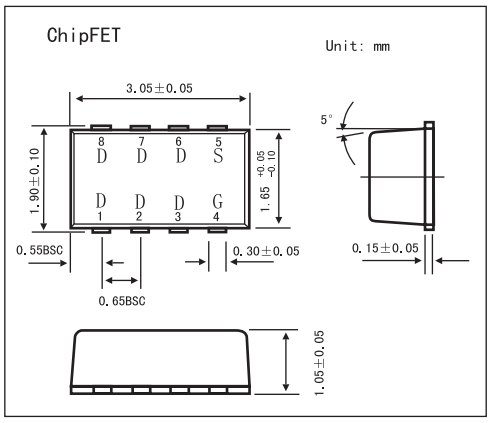
# KI5433DC

■ Features

●




P-Channel MOSFET




■ Absolute Maximum Ratings Ta = 25℃

| Parameter | | Symbol | 5 secs | Steady State | Unit |
|---|---|---|---|---|---|
| Drain-Source Voltage | | $V_{DS}$ | -20 | | V |
| Gate-Source Voltage | | $V_{GS}$ | ±8 | | |
| Continuous Drain Current ($T_J$ = 150 ℃) * | $T_A$ = 25℃ | $I_D$ | -6.7 | -4.8 | A |
| | $T_A$ = 85℃ | | -4.8 | -3.5 | |
| Pulsed Drain Current | | $I_{DM}$ | -20 | | |
| Continuous Source Current * | | $I_S$ | -2.1 | -1.1 | |
| Maximum Power Dissipation * | $T_A$ = 25℃ | $P_D$ | 2.5 | 1.3 | W |
| | $T_A$ = 85℃ | | 1.3 | 0.7 | |
| Operating Junction and Storage Temperature Range | | $T_J$, $T_{stg}$ | -55 to 150 | | ℃ |
| Soldering Recommendations (Peak Temperature) | | | 260 | | ℃ |
| Parameter | | Symbol | Typ | Max | Unit |
| Maximum Junction-to-Ambient* | t ≤ 5 sec | $R_{thJA}$ | 40 | 50 | ℃/W |
| | Steady-State | | 80 | 95 | |
| Maximum Junction-to-Foot (Drain) | Steady-State | $R_{thJF}$ | 15 | 20 | |

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

# KI5433DC

■ Electrical Characteristics Ta = 25℃

| Parameter | Symbol | Testconditons | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}$ = $V_{GS}$, $I_D$ = -250μA | -0.45 | | | V |
| Gate-Body Leakage | $I_{GSS}$ | $V_{DS}$ = 0 V, $V_{GS}$ = ±8 V | | | ±100 | nA |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$ = -16V, $V_{GS}$ = 0 V | | | -1 | μA |
| | | $V_{DS}$ = -16V, $V_{GS}$ = 0 V, $T_J$ = 85℃ | | | -5 | μA |
| On-State Drain Current* | $I_{D(on)}$ | $V_{DS}$ ≤- 5 V, $V_{GS}$ = -4.5 V | -20 | | | A |
| Drain-Source On-State Resistance* | $r_{DS(on)}$ | $V_{GS}$ = -4.5 V, $I_D$ = -4.8A | | 0.036 | 0.028 | Ω |
| | | $V_{GS}$ = -2.5 V, $I_D$ = -4.2A | | 0.045 | 0.039 | Ω |
| | | $V_{GS}$ = -1.8 V, $I_D$ = -1A | | 0.062 | | Ω |
| Forward Transconductance* | $g_{fs}$ | $V_{DS}$ = -10 V, $I_D$ = -4.8A | | 15 | | S |
| Schottky Diode Forward Voltage* | $V_{SD}$ | $I_S$ = -1.1 A, $V_{GS}$ = 0 V | | -0.8 | -1.2 | V |
| Total Gate Charge | $Q_g$ | $V_{DS}$ = -10V, $V_{GS}$ = -4.5 V, $I_D$ = -4.8 A | | 15 | 22 | nC |
| Gate-Source Charge | $Q_{gs}$ | | | 3.6 | | nC |
| Gate-Drain Charge | $Q_{gd}$ | | | 2.5 | | nC |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD}$ = -10 V, $R_L$ = 10 Ω, $I_D$ = -1 A, $V_{GEN}$ = -4.5V, $R_G$ = 6 Ω | | 22 | 35 | ns |
| Rise Time | $t_r$ | | | 29 | 45 | ns |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 94 | 140 | ns |
| Fall Time | $t_f$ | | | 54 | 80 | ns |
| Source-Drain Reverse Recovery Time | $t_{rr}$ | $I_F$ = -1.1 A, di/dt = 100 A/μs | | 30 | 60 | ns |

* Pulse test; pulse width≤ 300μs, duty cycle ≤ 2%.