

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$ unless otherwise stated)

| Parameter | Test Conditions | Min. | Typ. | Max. | Unit |
|---|---|------------|--------|------|-----------------------------|
| STATIC ELECTRICAL RATINGS | | | | | |
| BV_{DSS} Drain – Source Breakdown Voltage | $V_{GS} = 0$ $I_D = -1\text{mA}$ | -100 | | | V |
| ΔBV_{DSS} Temperature Coefficient of Breakdown Voltage | Reference to 25°C $I_D = -1\text{mA}$ | | -0.087 | | $\text{V}/^{\circ}\text{C}$ |
| $R_{DS(on)}$ Static Drain – Source On–State Resistance ¹ | $V_{GS} = -10\text{V}$ $I_D = -9\text{A}$ | | | 0.20 | Ω |
| | $V_{GS} = -10\text{V}$ $I_D = -14\text{A}$ | | | 0.22 | |
| $V_{GS(th)}$ Gate Threshold Voltage | $V_{DS} = V_{GS}$ $I_D = -250\mu\text{A}$ | -2 | | -4 | V |
| g_{fs} Forward Transconductance ¹ | $V_{DS} \geq -15\text{V}$ $I_{DS} = -9\text{A}$ | 6.2 | | | $\text{S}(\bar{v})$ |
| I_{DSS} Zero Gate Voltage Drain Current | $V_{GS} = 0$ $V_{DS} = 0.8BV_{DSS}$ $T_J = 125^{\circ}\text{C}$ | | | -25 | μA |
| | | | | -250 | |
| I_{GSS} Forward Gate – Source Leakage | $V_{GS} = -20\text{V}$ | | | -100 | nA |
| I_{GSS} Reverse Gate – Source Leakage | $V_{GS} = 20\text{V}$ | | | 100 | |
| DYNAMIC CHARACTERISTICS | | | | | |
| C_{iss} Input Capacitance | $V_{GS} = 0$ | | 1400 | | pF |
| C_{oss} Output Capacitance | $V_{DS} = -25\text{V}$ | | 600 | | |
| C_{rss} Reverse Transfer Capacitance | $f = 1\text{MHz}$ | | 200 | | |
| Q_g Total Gate Charge ¹ | $V_{GS} = -10\text{V}$ $I_D = -14\text{A}$ $V_{DS} = 0.5BV_{DSS}$ | 31 | | 60 | nC |
| Q_{gs} Gate – Source Charge ¹ | $I_D = -14\text{A}$ | 3.7 | | 13 | nC |
| Q_{gd} Gate – Drain (“Miller”) Charge ¹ | $V_{DS} = 0.5BV_{DSS}$ | 7 | | 35.2 | |
| $t_{d(on)}$ Turn–On Delay Time | $V_{DD} = -50\text{V}$ $I_D = -14\text{A}$ $R_G = 9.1\Omega$ | | | 35 | ns |
| t_r Rise Time | | | | 85 | |
| $t_{d(off)}$ Turn–Off Delay Time | | | | 85 | |
| t_f Fall Time | | | | 65 | |
| SOURCE – DRAIN DIODE CHARACTERISTICS | | | | | |
| I_S Continuous Source Current | | | | -14 | A |
| I_{SM} Pulse Source Current ² | | | | -56 | |
| V_{SD} Diode Forward Voltage | $I_S = -14\text{A}$ $T_J = 25^{\circ}\text{C}$ $V_{GS} = 0$ | | | -4.2 | V |
| t_{rr} Reverse Recovery Time | $I_F = -14\text{A}$ $T_J = 25^{\circ}\text{C}$ | | | 280 | ns |
| Q_{rr} Reverse Recovery Charge | $d_i / d_t \leq -100\text{A}/\mu\text{s}$ $V_{DD} \leq -50\text{V}$ | | | 3.6 | μC |
| t_{on} Forward Turn–On Time | | negligible | | | |
| PACKAGE CHARACTERISTICS | | | | | |
| L_D Internal Drain Inductance (from centre of drain pad to die) | | | 0.8 | | nH |
| L_S Internal Source Inductance (from centre of source pad to end of source bond wire) | | | 2.8 | | |

Notes

- 1) Pulse Test: Pulse Width $\leq 300\text{ms}$, $\delta \leq 2\%$
- 2) Repetitive Rating – Pulse width limited by maximum junction temperature.