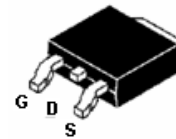
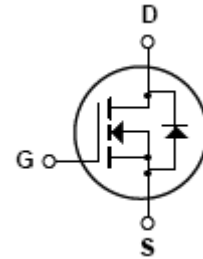


N-Channel MOSFET

FEATURES

- $R_{DS(ON)}$ (Max 1.5Ω) @ $V_{GS}=10V$
- Gate Charge (Typical $18.5nC$)
- Improved dv/dt Capability
- 100% Avalanche Tested


TO-252

MAXIMUM RATING operating temperature range applies unless otherwise specified

| Symbol | Parameter | Value | Units |
|----------------|-----------------------------------------------------------------------------|------------|---------------|
| V_{DSS} | Drain-Source voltage($V_{GS}=0$) | 500 | V |
| V_{GSS} | Gate -Source voltage | ± 30 | V |
| I_D | Drain current (continuous) at $T_C = 25^\circ C$ | 5.0 | A |
| I_D | Drain peak current(continuous) at $T_C = 100^\circ C$ | 3.4 | A |
| I_{DM} | Drain Current (pulsed) | 21.2 | A |
| V_{GSS} | Gate -Source voltage | ± 20 | V |
| P_D | Total Power Dissipation at $T_C = 25^\circ C$ | 98.4 | W |
| | Derating Factor above $25^\circ C$ | 0.78 | W/ $^\circ C$ |
| E_{AS} | Single Pulsed Acalanche Energy | 390 | mJ |
| E_{AR} | Peperitive Acalanche Energy | 9.84 | mJ |
| dv/dt | Peak Diode Recovery dv/dt | 4.5 | V/ns |
| T_{STG}, T_j | Storage Temperature and Operating Junction Temperature | -55 ~ +150 | $^\circ C$ |
| T_L | Maximum Lead Temperature for soldering purpose, 1/8 from Case for 5 seconds | 300 | $^\circ C$ |

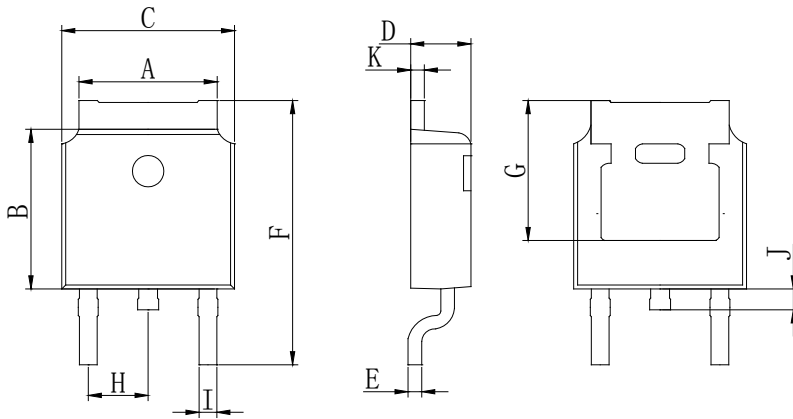
ELECTRICAL CHARACTERISTICS @ Ta=25°C unless otherwise specified

| Parameter | Symbol | Test conditions | MIN | TYP | MAX | UNIT |
|-------------------------------------------------------|------------------------------|---------------------------------------|-----|------|------|----------|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V, I_D=250\mu A$ | 500 | - | - | V |
| Breakdown Voltage Temperature Coefficient | $\Delta BV_{DSS}/\Delta T_J$ | $I_D=250\mu A$ | - | 0.47 | - | V/°C |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=500V, V_{GS}=0V$ | - | - | 1 | μA |
| Gate-body Leakage | Forward | $V_{DS}=0V, V_{GS}=30V$ | - | - | 100 | nA |
| | Reverse | $V_{DS}=0V, V_{GS}=-30V$ | - | - | -100 | nA |
| ON CHARACTERISTICS | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250\mu A$ | 2.0 | - | 3.5 | |
| Static drain-Source on-resistance | $R_{DS(on)}$ | $V_{GS}=10V, I_D=2.65A,$ | 1.3 | - | 1.5 | Ω |
| DYNAMIC CHARACTERISTICS | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS}=25V, V_{GS}=0V, f=1.0MHz$ | - | 608 | - | pF |
| Output Capacitance | C_{oss} | | - | 75 | - | pF |
| Reverse Transfer Capacitance | C_{rss} | | - | 25 | - | pF |
| SWITCHING CHARACTERISTICS | | | | | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD}=250V, I_D=5.0A, R_G=25\Omega$ | - | 60 | 42 | ns |
| Turn-On Rise Time | t_R | | - | 49 | 108 | ns |
| Turn-Off Delay Time | $t_{d(off)}$ | | - | 60 | 130 | ns |
| Turn-Off Fall Time | t_f | | - | 49 | 108 | ns |
| Total Gate Charge | Q_g | $V_{DS}=400V, I_D=5.3A, V_{GS}=10V$ | - | 18.5 | 23 | nC |
| Gate-Source Charge | Q_{gs} | | - | 4 | - | nC |
| Gate-Drain Charge | Q_{gd} | | - | 8 | - | nC |
| DRAIN-SOURCE DIODE CHARACTERISTICS | | | | | | |
| Maximum Continuous Drain-Source Diode Forward Current | I_S | | - | - | 5.3 | A |
| Maximum Pulsed Drain-Source Diode Forward Current | I_{SM} | | - | - | 21.2 | A |
| Drain-Source Recovery Charge | V_{SD} | $V_{GS}=0V, I_S=5.3A$ | - | - | 1.5 | V |
| Reverse Recovery Time | t_{rr} | $V_{GS}=0V, I_S=5.3A,$ | - | 302 | - | ns |
| Reverse Recovery Charge | Q_{rr} | $di_F/dt=100A/us$ | - | 1.8 | - | μC |

PACKAGE OUTLINE

Plastic surface mounted package

TO-252



| TO-252 | | |
|----------------------|------|-------|
| A | 5.05 | 5.65 |
| B | 5.80 | 6.40 |
| C | 6.25 | 6.85 |
| D | 2.20 | 2.40 |
| E | 0.40 | 0.60 |
| F | 9.71 | 10.31 |
| G | 5.05 | 5.65 |
| H | 2.10 | 2.50 |
| I | 0.70 | 0.90 |
| J | 0.50 | 0.7 |
| K | 0.40 | 0.60 |
| All Dimensions in mm | | |