

|           |                                    |      |   |
|-----------|------------------------------------|------|---|
|           |                                    | 7 7  |   |
| $V_{DSS}$ | Drain-Source Voltage               | 600  | V |
| $I_D$     | Drain Current -continuous (Tc=25 ) | 5.5* | A |
|           | -continuous (Tc=100 )              | 2.2* | A |

| Symbol  | Parameter   | Test Condition                                    | Min | Typ | Max  | Units    |
|---|---|---|-----|-----|------|----------|
| <b>Off Characteristics</b>                                    |   |   |     |     |      |          |
| $BV_{DSS}$  | Drain-Source Breakdown Voltage  | $I_D=250\text{ A}$ $V_{GS}=0$                     | 600 | --  | --   | V        |
| $BV_{DSS}/$   | Breakdown Voltage Temperature Coefficient   | $I_D=250\text{ A}$ , Reference to 25              | --  | 0.6 | --   | V/       |
| $I_{DSS}$   | Zero Gate Voltage Drain Current   | $V_{ds}=600V, V_{gs}=0V$                          | --  | --  | 1    | A        |
|   |   | $V_{ds}=480V, T_c=125$                            |     |     | 10   | A        |
| $I_{GSSF}$  | Gate-body leakage Current, Forward  | $V_{gs}=+30V, V_{ds}=0V$                          | --  | --  | 100  | nA       |
| $I_{GSSR}$  | Gate-body leakage Current, Reverse  | $V_{gs}=-30V, V_{ds}=0V$                          | --  | --  | -100 | nA       |
| <b>On Characteristics</b>                                     |   |   |     |     |      |          |
| $V_{GS(th)}$  | Gate Threshold Voltage  | $I_d=250\mu A, V_{ds}=V_{gs}$                     | 2   | --  | 4    | V        |
| $R_{DS(on)}$  | Static Drain-Source On-Resistance   | $I_d=2.75A, V_{gs}=10V$                           | --  | --  | 2.0  | $\Omega$ |
| <b>Dynamic Characteristics</b>                                |   |   |     |     |      |          |
| $C_{iss}$   | Input Capacitance   | $V_{DS}=25V$ $V_{GS}=0$<br>$f=1.0MHz$             | --  | 620 | 810  | pF       |
| $C_{oss}$   | Output Capacitance  |   | --  | 65  | 85   | pF       |
| $C_{rss}$   | Reverse Transfer Capacitance  |   | --  | 7   | 10   | pF       |
| <b>Switching Characteristics</b>                              |   |   |     |     |      |          |
| $T_d(on)$   | On Delay Time   | $V_{DD}=300V$ $I_D=5.5A$<br>$R_G=25$ (Note 3,4)   | --  | 15  | 40   | nS       |
| $T_r$   | Turn-On Rise Time   |   | --  | 45  | 100  | nS       |
| $T_d(off)$  | Turn-Off Delay Time   |   | --  | 45  | 100  | nS       |
| $T_f$   | Turn-Off Time   |   | --  | 45  | 100  | nS       |
| $Q_g$   | Total Gate Charge   | $V_{DS}=480, V_{GS}=10V$<br>$I_D=5.5A$ (Note 3,4) | --  | 16  | 20   | nC       |
| $Q_{gs}$  | Gate-Source Charge  |   | --  | 3.5 | --   | nC       |
| $Q_{gd}$  | Gate-Drain Charge   |   |     | 6.5 | --   | nC       |
| <b>Drain-Source Diode Characteristics and Maximum Ratings</b> |   |   |     |     |      |          |
| $I_S$   | Maximum Continuous Drain-Source Diode Forward Current   |   | --  | --  | 5.5  | A        |
| $I_{SM}$  | Maximum Pulsed Drain-Source Diode Forward Current   |   | --  | --  | 22   | A        |
| $V_{SD}$  | Drain-Source Diode Forward Voltage  | $I_d=5.5A$  | --  | --  | 1.4  | V        |
| $t_{rr}$  | Reverse Recovery Time   | $I_S=5.5A, V_{GS}=0V$                             | --  | 310 | --   | nS       |
| $Q_{rr}$  | Reverse Recovery Charge   | $di_f/dt=100A/\mu s$ (Note3)                      | --  | 2.1 | --   | C        |
| *Notes  | 1, $L=18.2mH, I_{AS}=5.5A, V_{DD}=50V, R_G=25\Omega$ , Starting $T_J=25^\circ C$<br>2, Repetitive Rating : Pulse width limited by maximum junction temperature<br>3, Pulse Test : Pulse Width $\leq 300\mu s$ |   |     |     |      |          |

