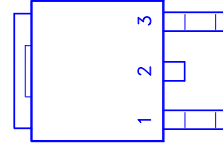
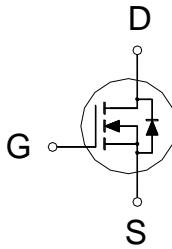




PRODUCT SUMMARY

| | | |
|---------------|--------------|-------|
| $V_{(BR)DSS}$ | $R_{DS(ON)}$ | I_D |
| 100V | 7.4mΩ | 81A |



GATE
DRAIN
SOURCE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ °C}$ Unless Otherwise Noted)

| PARAMETERS/TEST CONDITIONS | | SYMBOL | LIMITS | UNITS |
|---------------------------------------|-----------------------|----------------|------------|-------|
| Drain-Source Voltage | | V_{DS} | 100 | V |
| Gate-Source Voltage | | V_{GS} | ±20 | V |
| Continuous Drain Current ² | $T_C = 25\text{ °C}$ | I_D | 81 | A |
| | $T_C = 100\text{ °C}$ | | 57 | |
| Pulsed Drain Current ¹ | | I_{DM} | 300 | |
| Avalanche Current | | I_{AS} | 13.9 | |
| Avalanche Energy | $L = 1\text{mH}$ | E_{AS} | 96.6 | mJ |
| Power Dissipation | $T_C = 25\text{ °C}$ | P_D | 115 | W |
| | $T_C = 100\text{ °C}$ | | 57 | |
| Junction & Storage Temperature Range | | T_J, T_{stg} | -55 to 175 | °C |

THERMAL RESISTANCE RATINGS

| THERMAL RESISTANCE | SYMBOL | TYPICAL | MAXIMUM | UNITS |
|---------------------|-----------------|---------|---------|--------|
| Junction-to-Case | $R_{\theta JC}$ | | 1.3 | °C / W |
| Junction-to-Ambient | $R_{\theta JA}$ | | 62.5 | |

¹Pulse width limited by maximum junction temperature.

²Package limitation current is 55A.

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ °C}$, Unless Otherwise Noted)

| PARAMETER | SYMBOL | TEST CONDITIONS | LIMITS | | | UNIT |
|---------------------------------|---------------|--|--------|-----|------|------|
| | | | MIN | TYP | MAX | |
| STATIC | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS} = 0V, I_D = 250\mu A$ | 100 | | | V |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\mu A$ | 1.4 | 2 | 3 | |
| Gate-Body Leakage | I_{GSS} | $V_{DS} = 0V, V_{GS} = \pm 20V$ | | | ±100 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 100V, V_{GS} = 0V$ | | | 1 | μA |
| | | $V_{DS} = 100V, V_{GS} = 0V, T_J = 55\text{ °C}$ | | | 10 | |

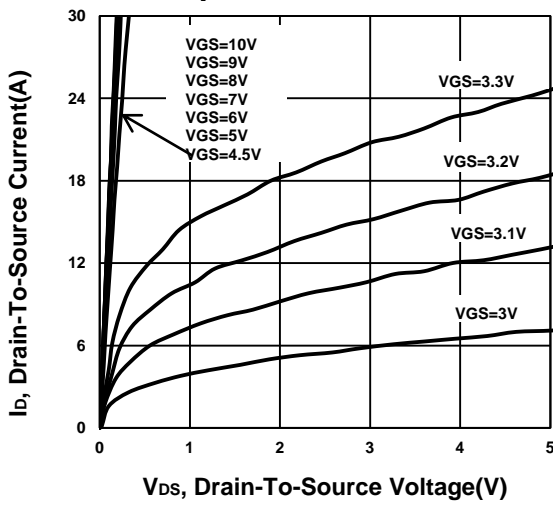
| | | | | | |
|---|--------------|---|------|------|----|
| Drain-Source On-State Resistance ¹ | $R_{DS(ON)}$ | $V_{GS} = 10V, I_D = 14A$ | 5.7 | 7.4 | mΩ |
| | | $V_{GS} = 4.5V, I_D = 10A$ | 7.6 | 10.4 | |
| Forward Transconductance ¹ | g_{fs} | $V_{DS} = 5V, I_D = 14A$ | 51 | | S |
| DYNAMIC | | | | | |
| Input Capacitance | C_{iss} | $V_{GS} = 0V, V_{DS} = 50V, f = 1MHz$ | 3255 | | pF |
| Output Capacitance | C_{oss} | | 285 | | |
| Reverse Transfer Capacitance | C_{rss} | | 14 | | |
| Gate Resistance | R_g | $V_{GS} = 0V, V_{DS} = 0V, f = 1MHz$ | 1.6 | | Ω |
| Total Gate Charge ² | Q_g | $V_{DS} = 50V, I_D = 14A,$ $V_{GS} = 10V$ | 59 | | nC |
| Gate-Source Charge ² | Q_{gs} | | 10 | | |
| Gate-Drain Charge ² | Q_{gd} | | 16 | | |
| Turn-On Delay Time ² | $t_{d(on)}$ | $V_{DD} = 50V$ $I_D \cong 14A, V_{GS} = 10V, R_{GS} = 6\Omega$ | 14 | | nS |
| Rise Time ² | t_r | | 42 | | |
| Turn-Off Delay Time ² | $t_{d(off)}$ | | 55 | | |
| Fall Time ² | t_f | | 72 | | |
| SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T_J = 25 °C) | | | | | |
| Continuous Current ³ | I_S | | | 81 | A |
| Forward Voltage ¹ | V_{SD} | $I_F = 14A, V_{GS} = 0V$ | | 1.2 | V |
| Reverse Recovery Time | t_{rr} | $I_F = 14A, di_F/dt = 100A / \mu S$ | 37 | | nS |
| Reverse Recovery Charge | Q_{rr} | | 47 | | nC |

¹Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

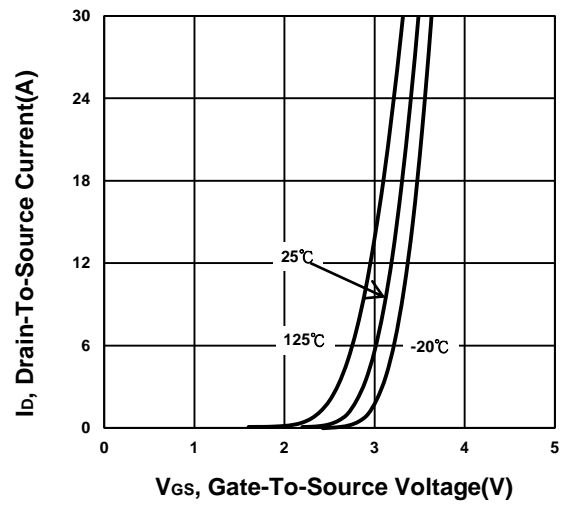
²Independent of operating temperature.

³Package limitation current is 55A.

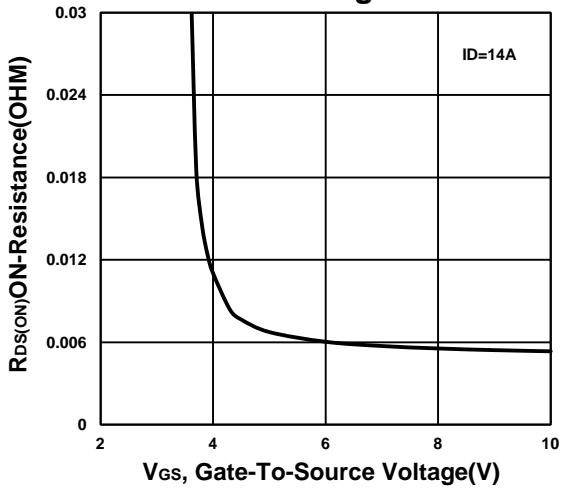
Output Characteristics



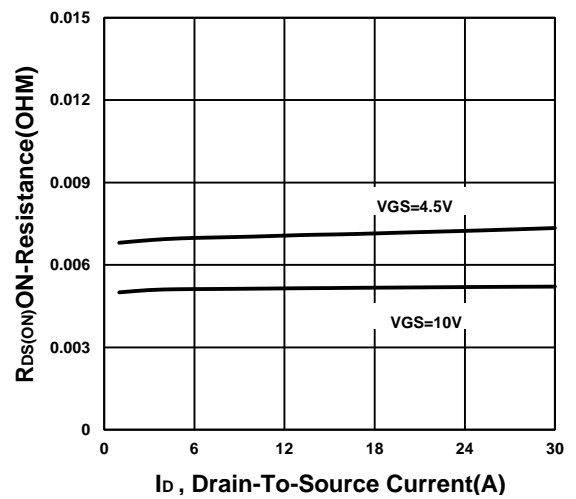
Transfer Characteristics



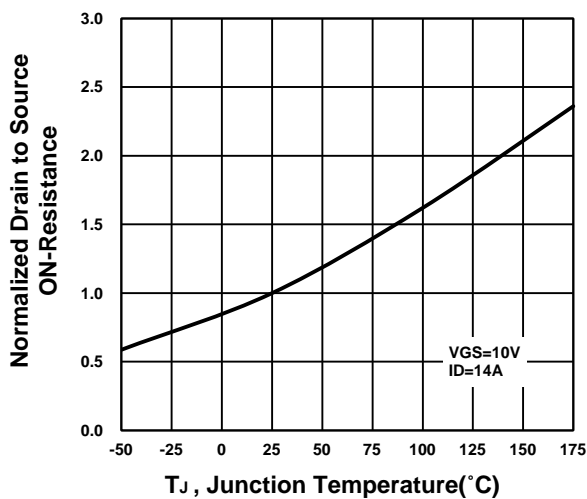
On-Resistance VS Gate-To-Source Voltage



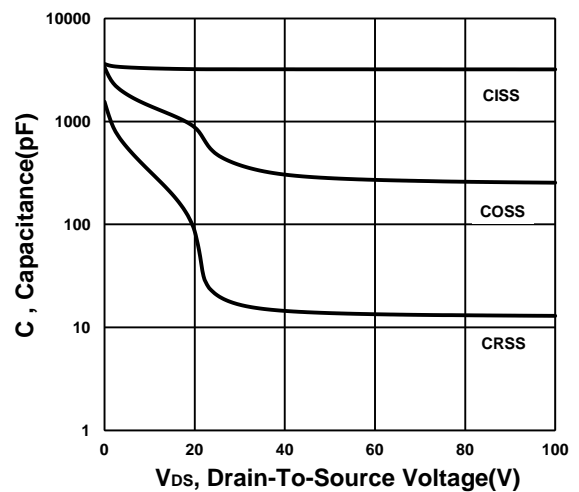
On-Resistance VS Drain Current



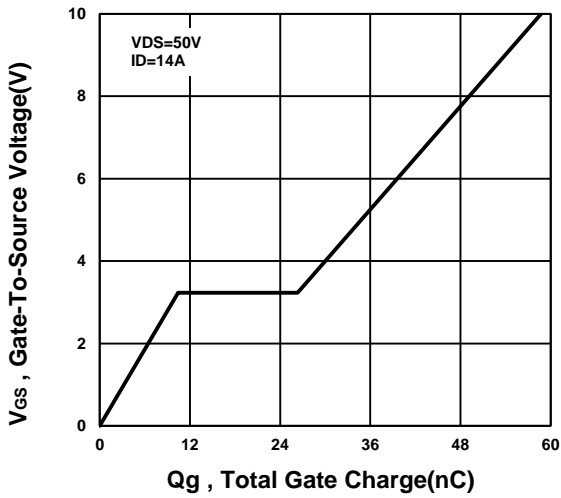
On-Resistance VS Temperature



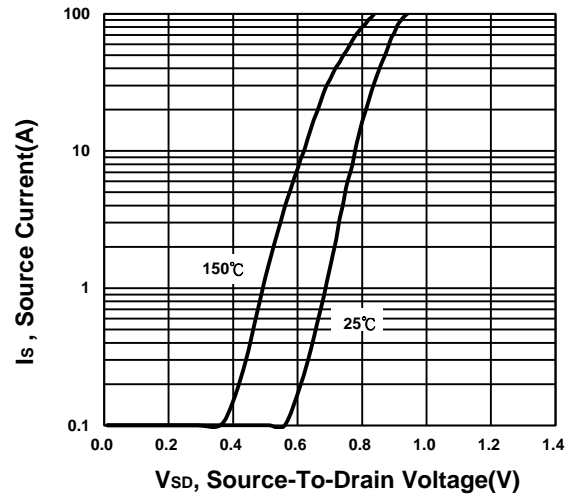
Capacitance Characteristic



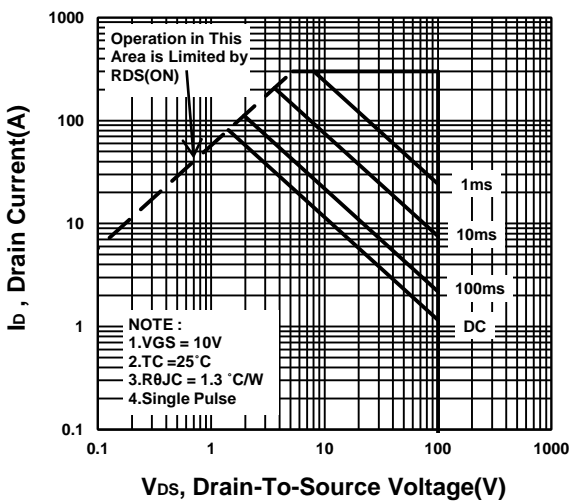
Gate charge Characteristics



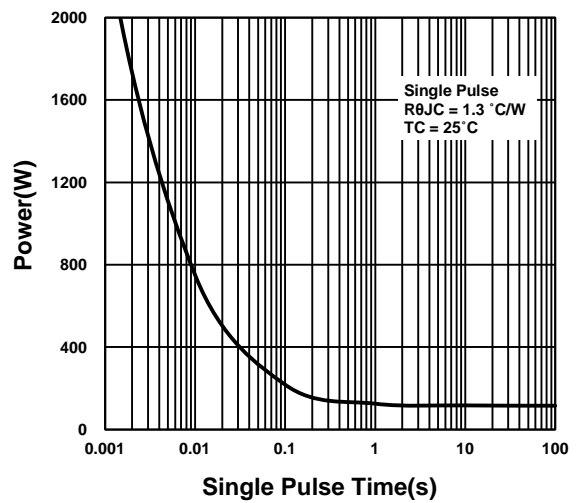
Source-Drain Diode Forward Voltage



Safe Operating Area



Single Pulse Maximum Power Dissipation



Transient Thermal Response Curve

