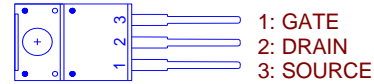
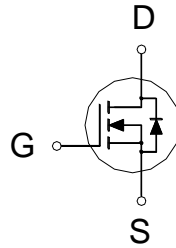


**PRODUCT SUMMARY**

|               |               |       |
|---------------|---------------|-------|
| $V_{(BR)DSS}$ | $R_{DS(ON)}$  | $I_D$ |
| 200V          | 150m $\Omega$ | 18A   |



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

| PARAMETERS/TEST CONDITIONS           |                           | SYMBOL         | LIMITS     | UNITS            |
|--------------------------------------|---------------------------|----------------|------------|------------------|
| Drain-Source Voltage                 |                           | $V_{DS}$       | 200        | V                |
| Gate-Source Voltage                  |                           | $V_{GS}$       | $\pm 20$   | V                |
| Continuous Drain Current             | $T_C = 25^\circ\text{C}$  | $I_D$          | 18         | A                |
|                                      | $T_C = 100^\circ\text{C}$ |                | 7          |                  |
| Pulsed Drain Current <sup>1</sup>    |                           | $I_{DM}$       | 30         |                  |
| Avalanche Current                    |                           | $I_{AS}$       | 11         |                  |
| Avalanche Energy                     | $L = 1\text{mH}$          | $E_{AS}$       | 61         | mJ               |
| Power Dissipation                    | $T_C = 25^\circ\text{C}$  | $P_D$          | 42         | W                |
|                                      | $T_C = 100^\circ\text{C}$ |                | 17         |                  |
| Junction & Storage Temperature Range |                           | $T_J, T_{stg}$ | -55 to 150 | $^\circ\text{C}$ |

**THERMAL RESISTANCE RATINGS**

| THERMAL RESISTANCE  | SYMBOL          | TYPICAL | MAXIMUM | UNITS                       |
|---------------------|-----------------|---------|---------|-----------------------------|
| Junction-to-Ambient | $R_{\theta JA}$ |         | 62.5    | $^\circ\text{C} / \text{W}$ |
| Junction-to-Case    | $R_{\theta JC}$ |         | 3       |                             |

<sup>1</sup>Pulse width limited by maximum junction temperature.

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

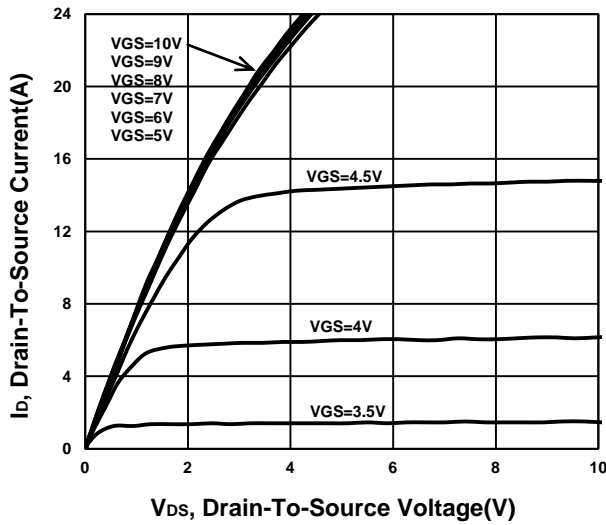
| PARAMETER                                     | SYMBOL        | TEST CONDITIONS   | LIMITS |     |           | UNIT          |
|---|---------------|---|--------|-----|-----------|---------------|
|   |               |   | MIN    | TYP | MAX       |               |
| <b>STATIC</b>                                 |               |   |        |     |           |               |
| Drain-Source Breakdown Voltage                | $V_{(BR)DSS}$ | $V_{GS} = 0\text{V}, I_D = 250\mu\text{A}$                          | 200    |     |           | V             |
| Gate Threshold Voltage                        | $V_{GS(th)}$  | $V_{DS} = V_{GS}, I_D = 250\mu\text{A}$                             | 1      | 2   | 3         |               |
| Gate-Body Leakage                             | $I_{GSS}$     | $V_{DS} = 0\text{V}, V_{GS} = \pm 20\text{V}$                       |        |     | $\pm 100$ | nA            |
| Zero Gate Voltage Drain Current               | $I_{DSS}$     | $V_{DS} = 200\text{V}, V_{GS} = 0\text{V}$                          |        |     | 1         | $\mu\text{A}$ |
|   |               | $V_{DS} = 160\text{V}, V_{GS} = 0\text{V}, T_J = 125^\circ\text{C}$ |        |     | 10        |               |
| Drain-Source On-State Resistance <sup>1</sup> | $R_{DS(ON)}$  | $V_{GS} = 4.5\text{V}, I_D = 9\text{A}$                             |        | 175 | 195       | m $\Omega$    |
|   |               | $V_{GS} = 10\text{V}, I_D = 9\text{A}$                              |        | 117 | 150       |               |
| Forward Transconductance <sup>1</sup>         | $g_{fs}$      | $V_{DS} = 10\text{V}, I_D = 9\text{A}$                              |        | 15  |           | S             |

| DYNAMIC   |                   |                                       |   |      |    |    |
|---|-------------------|---------------------------------------|---|------|----|----|
| Input Capacitance   | $C_{iss}$         | $V_{GS} = 0V, V_{DS} = 25V, f = 1MHz$ |   | 811  |    | pF |
| Output Capacitance  | $C_{oss}$         |                                       |   | 137  |    |    |
| Reverse Transfer Capacitance  | $C_{rss}$         |                                       |   | 19   |    |    |
| Total Gate Charge <sup>2</sup>  | $Q_{g(VGS=10V)}$  | $V_{DS} = 160V, I_D = 18A$            |   | 25   |    | nC |
|   | $Q_{g(VGS=4.5V)}$ |                                       |   | 13   |    |    |
| Gate-Source Charge <sup>2</sup>                                       | $Q_{gs}$          |                                       |   | 3    |    |    |
| Gate-Drain Charge <sup>2</sup>  | $Q_{gd}$          |                                       |   | 10   |    |    |
| Turn-On Delay Time <sup>2</sup>                                       | $t_{d(on)}$       |                                       | $V_{DS} = 100V, I_D \cong 18A,$<br>$V_{GS} = 10V, R_{GEN} = 25\Omega$ |      | 21 |    |
| Rise Time <sup>2</sup>  | $t_r$             |                                       |   | 140  |    |    |
| Turn-Off Delay Time <sup>2</sup>                                      | $t_{d(off)}$      |                                       |   | 183  |    |    |
| Fall Time <sup>2</sup>  | $t_f$             |                                       |   | 133  |    |    |
| SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS ( $T_J = 25^\circ C$ ) |                   |                                       |   |      |    |    |
| Continuous Current  | $I_S$             |                                       |   | 18   |    | A  |
| Forward Voltage <sup>1</sup>  | $V_{SD}$          | $I_F = 18A, V_{GS} = 0V$              |   |      | 1  | V  |
| Diode Reverse Recovery Time   | $t_{rr}$          | $I_F = 18A, di/dt = 100A/\mu s$       |   | 130  |    | nS |
| Diode Reverse Recovery Charge   | $Q_{rr}$          |                                       |   | 0.67 |    | uC |

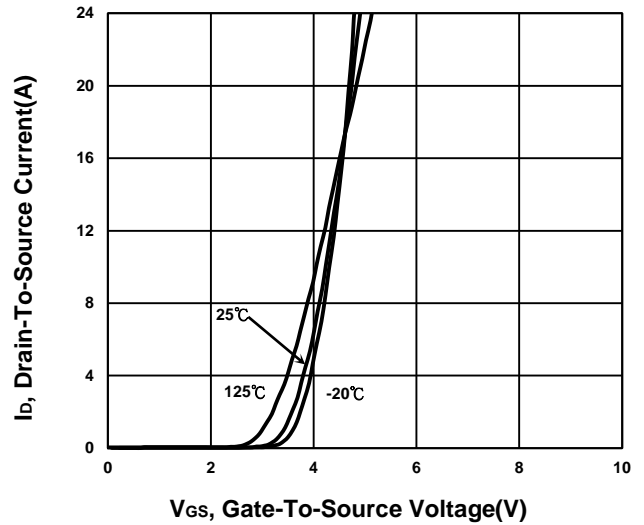
<sup>1</sup>Pulse test : Pulse Width  $\leq 300 \mu sec$ , Duty Cycle  $\leq 2\%$ .

<sup>2</sup>Independent of operating temperature.

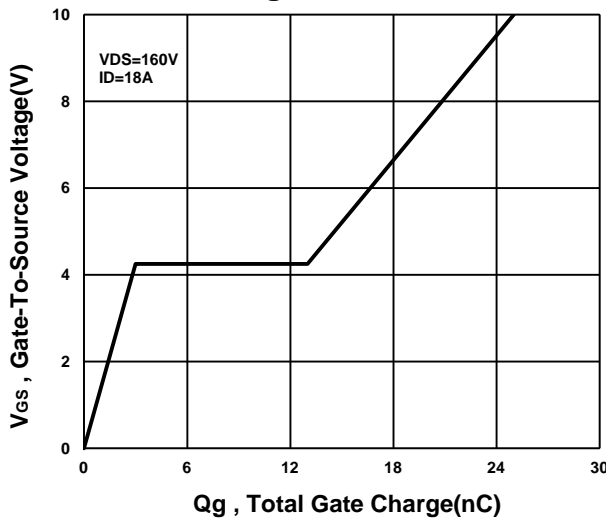
**Output Characteristics**



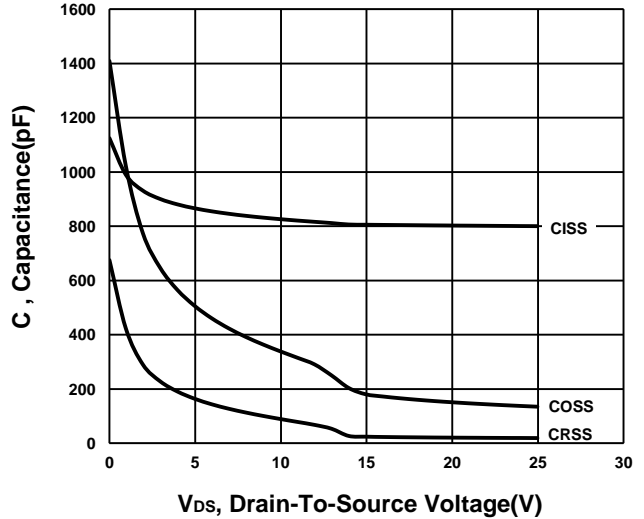
**Transfer Characteristics**



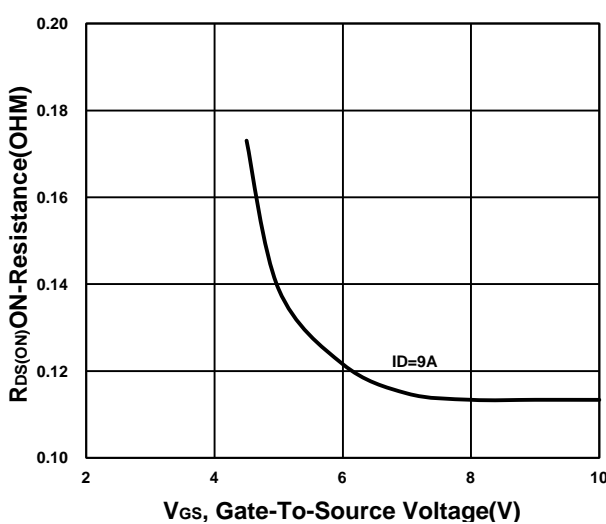
**Gate charge Characteristics**



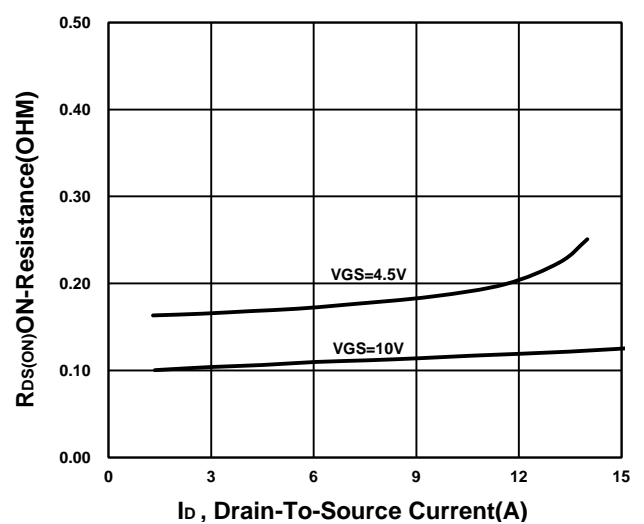
**Capacitance Characteristic**



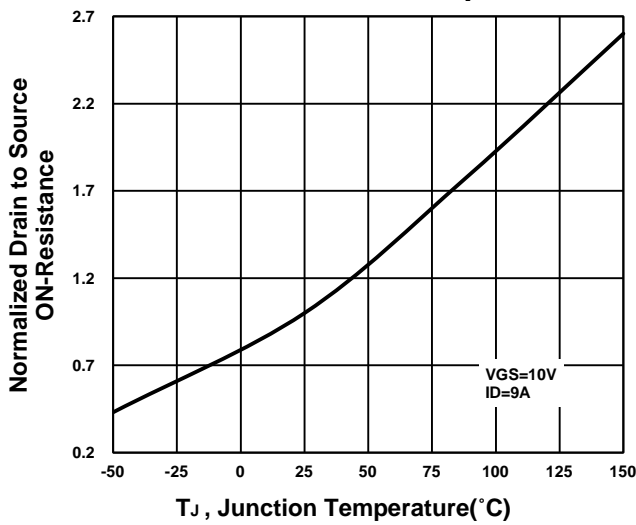
**On-Resistance VS Gate-To-Source**



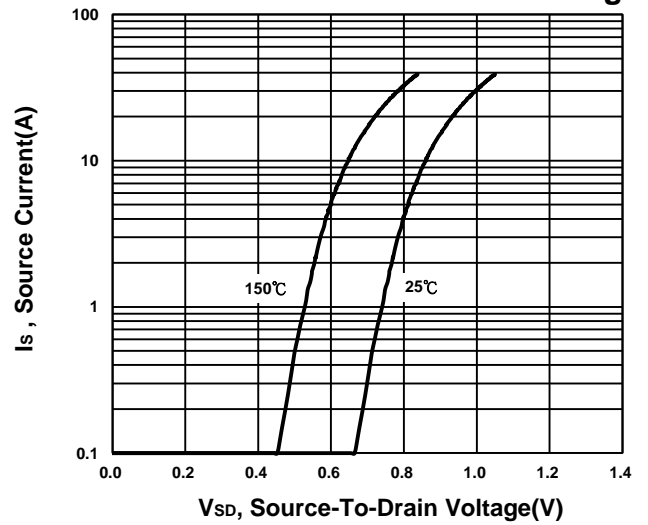
**On-Resistance VS Drain Current**



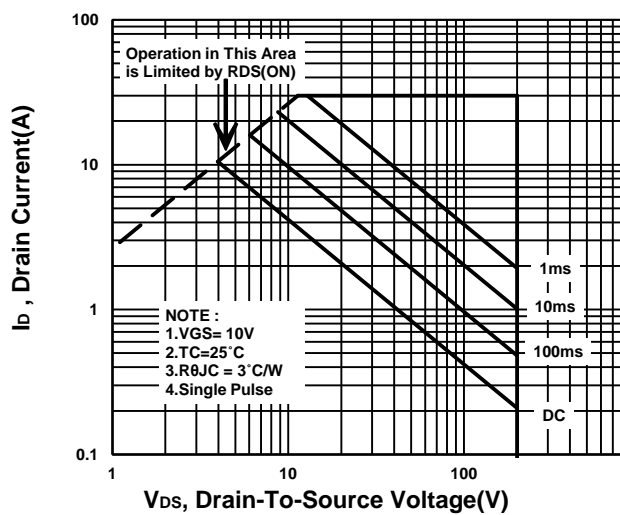
**On-Resistance VS Temperature**



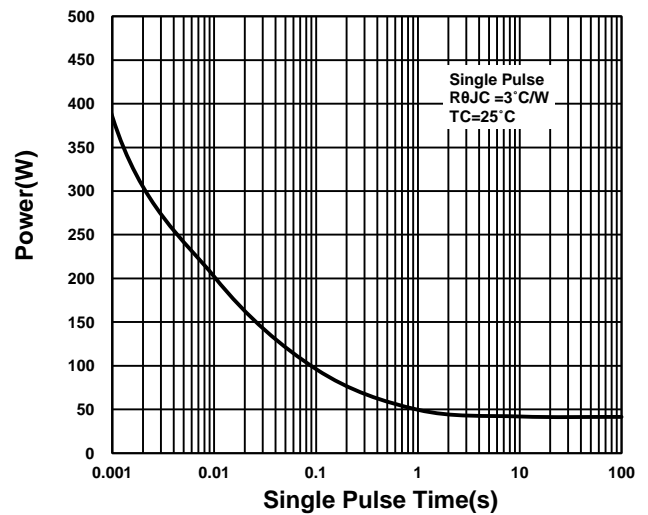
**Source-Drain Diode Forward Voltage**



**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**

