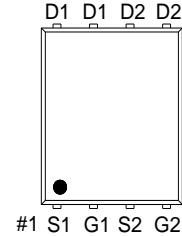
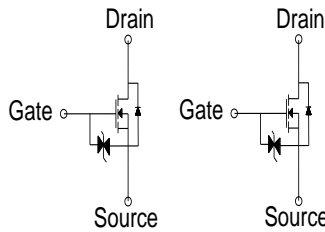


**PRODUCT SUMMARY**

|               |              |       |
|---------------|--------------|-------|
| $V_{(BR)DSS}$ | $R_{DS(ON)}$ | $I_D$ |
| 100V          | 590mΩ        | 2.7A  |



G. GATE  
D. DRAIN  
S. 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                            |                       | $V_{GS}$       | ±16        | V     |
| Continuous Drain Current                       | $T_C = 25\text{ °C}$  | $I_D$          | 2.7        | A     |
|  | $T_C = 100\text{ °C}$ |                | 1.7        |       |
| Pulsed Drain Current <sup>1</sup>              |                       | $I_{DM}$       | 4.5        |       |
| Continuous Drain Current                       | $T_A = 25\text{ °C}$  | $I_D$          | 1.1        |       |
|  | $T_A = 70\text{ °C}$  |                | 0.9        |       |
| Avalanche Current                              |                       | $I_{AS}$       | 1.3        |       |
| Avalanche Energy                               | $L = 1\text{mH}$      | $E_{AS}$       | 0.85       | mJ    |
| Power Dissipation                              | $T_C = 25\text{ °C}$  | $P_D$          | 10.4       | W     |
|  | $T_C = 100\text{ °C}$ |                | 4.1        |       |
| Power Dissipation                              | $T_A = 25\text{ °C}$  | $P_D$          | 1.7        | W     |
|  | $T_A = 70\text{ °C}$  |                | 1          |       |
| Operating Junction & Storage Temperature Range |                       | $T_j, T_{stg}$ | -55 to 150 | °C    |

**THERMAL RESISTANCE RATINGS**

| THERMAL RESISTANCE               | SYMBOL          | TYPICAL | MAXIMUM | UNITS  |
|----------------------------------|-----------------|---------|---------|--------|
| Junction-to-Ambient <sup>2</sup> | $R_{\theta JA}$ |         | 74      | °C / W |
| Junction-to-Case                 | $R_{\theta JC}$ |         | 12      |        |

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

<sup>2</sup>The value of  $R_{\theta JA}$  is measured with the device mounted on 1in<sup>2</sup> FR-4 board with 2oz. Copper, in a still air environment with  $T_A = 25\text{ °C}$ .

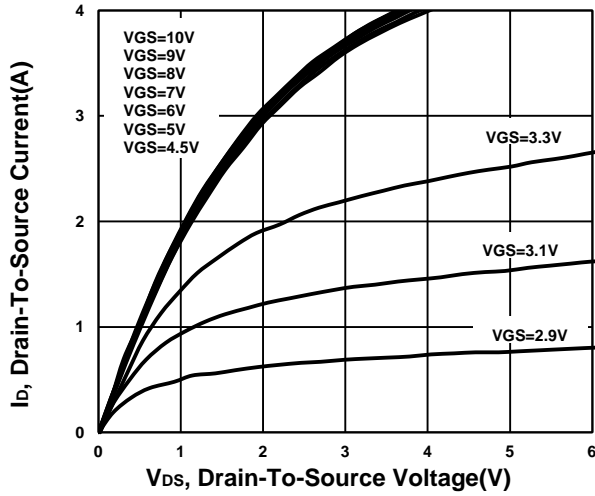
**ELECTRICAL CHARACTERISTICS (T<sub>J</sub> = 25 °C, Unless Otherwise Noted)**

| PARAMETER   | SYMBOL               | TEST CONDITIONS   | LIMITS   |     |     | UNIT |    |
|---|----------------------|---|--|-----|-----|------|----|
|   |                      |   | MIN  | TYP | MAX |      |    |
| <b>STATIC</b>   |                      |   |  |     |     |      |    |
| Drain-Source Breakdown Voltage  | V <sub>(BR)DSS</sub> | V <sub>GS</sub> = 0V, I <sub>D</sub> = 250μA  | 100  |     |     | V    |    |
| Gate Threshold Voltage  | V <sub>GS(th)</sub>  | V <sub>DS</sub> = V <sub>GS</sub> , I <sub>D</sub> = 250μA                                  | 1.3  | 1.8 | 2.4 |      |    |
| Gate-Body Leakage   | I <sub>GSS</sub>     | V <sub>DS</sub> = 0V, V <sub>GS</sub> = ±16V  |  |     | ±30 | uA   |    |
| Zero Gate Voltage Drain Current   | I <sub>DSS</sub>     | V <sub>DS</sub> = 80V, V <sub>GS</sub> = 0V   |  |     | 1   | μA   |    |
|   |                      | V <sub>DS</sub> = 80V, V <sub>GS</sub> = 0V, T <sub>J</sub> = 55 °C                         |  |     | 10  |      |    |
| Drain-Source On-State Resistance <sup>1</sup>                                 | R <sub>DS(ON)</sub>  | V <sub>GS</sub> = 4.5V, I <sub>D</sub> = 1A   |  | 491 | 650 | mΩ   |    |
|   |                      | V <sub>GS</sub> = 10V, I <sub>D</sub> = 1A  |  | 455 | 590 |      |    |
| Forward Transconductance <sup>1</sup>   | g <sub>fs</sub>      | V <sub>DS</sub> = 5V, I <sub>D</sub> = 1A   |  | 4.2 |     | S    |    |
| <b>DYNAMIC</b>  |                      |   |  |     |     |      |    |
| Input Capacitance   | C <sub>iss</sub>     | V <sub>GS</sub> = 0V, V <sub>DS</sub> = 25V, f = 1MHz                                       |  | 112 |     | pF   |    |
| Output Capacitance  | C <sub>oss</sub>     |   |  | 20  |     |      |    |
| Reverse Transfer Capacitance  | C <sub>riss</sub>    |   |  | 10  |     |      |    |
| Gate Resistance   | R <sub>g</sub>       | V <sub>GS</sub> = 0V, V <sub>DS</sub> = 0V, f = 1MHz  |  | 4.2 |     | Ω    |    |
| Total Gate Charge <sup>2</sup>  | Q <sub>g</sub>       | V <sub>GS</sub> = 10V   | V <sub>DS</sub> = 50V, V <sub>GS</sub> = 10V,<br>I <sub>D</sub> = 1A | 3.8 |     | nC   |    |
|   |                      | V <sub>GS</sub> = 4.5V  |  | 2.8 |     |      |    |
| Gate-Source Charge <sup>2</sup>   | Q <sub>gs</sub>      | 0.3   |  |     |     |      |    |
| Gate-Drain Charge <sup>2</sup>  | Q <sub>gd</sub>      | 2   |  |     |     |      |    |
| Turn-On Delay Time <sup>2</sup>   | t <sub>d(on)</sub>   | V <sub>DS</sub> = 50V,<br>I <sub>D</sub> ≅ 1A, V <sub>GS</sub> = 10V, R <sub>GEN</sub> = 6Ω |  | 7.1 |     |      | nS |
| Rise Time <sup>2</sup>  | t <sub>r</sub>       |   |  | 6   |     |      |    |
| Turn-Off Delay Time <sup>2</sup>  | t <sub>d(off)</sub>  |   | 13.7   |     |     |      |    |
| Fall Time <sup>2</sup>  | t <sub>f</sub>       |   | 2.5  |     |     |      |    |
| <b>SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS (T<sub>J</sub> = 25 °C)</b> |                      |   |  |     |     |      |    |
| Continuous Current  | I <sub>S</sub>       |   |  |     | 1.7 | A    |    |
| Forward Voltage <sup>1</sup>  | V <sub>SD</sub>      | I <sub>F</sub> = 1A, V <sub>GS</sub> = 0V   |  |     | 1   | V    |    |
| Reverse Recovery Time   | t <sub>rr</sub>      | I <sub>F</sub> = 1A, dI <sub>F</sub> /dt = 100A / μS  |  | 22  |     | nS   |    |
| Reverse Recovery Charge   | Q <sub>rr</sub>      |   |  | 10  |     | nC   |    |

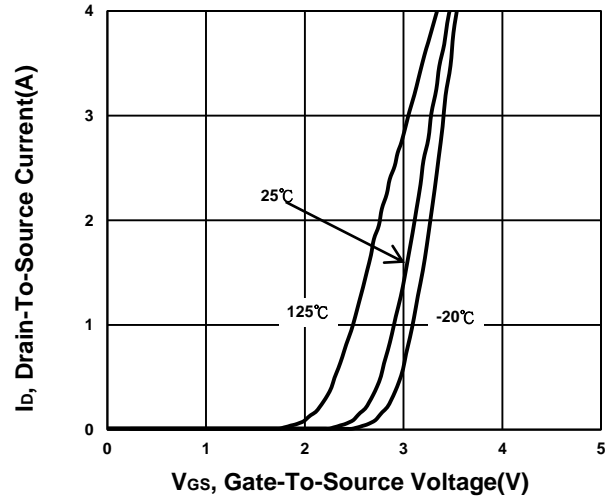
<sup>1</sup>Pulse test : Pulse Width ≤ 300 μsec, Duty Cycle ≤ 2%.

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

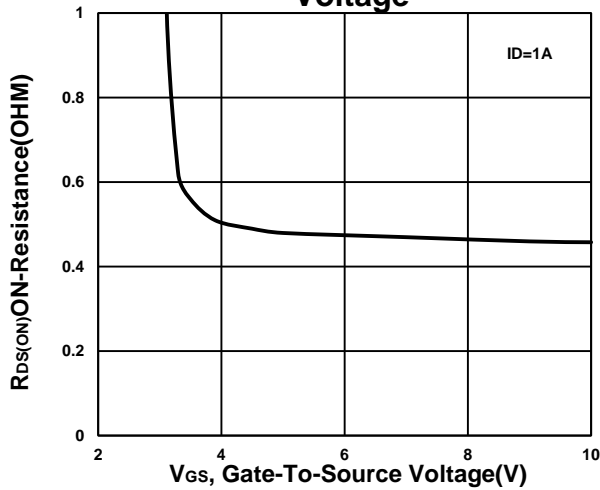
**Output Characteristics**



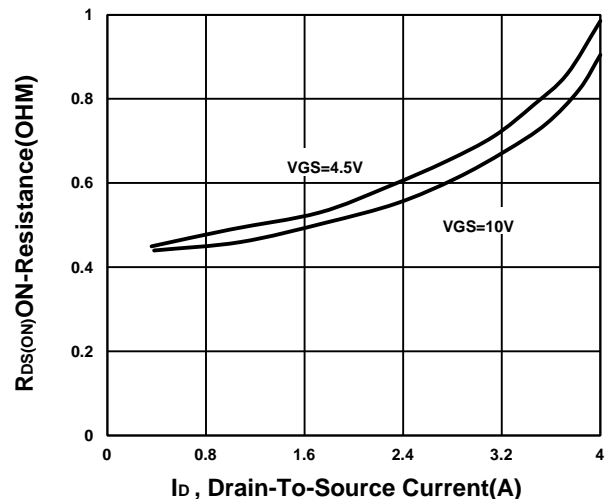
**Transfer Characteristics**



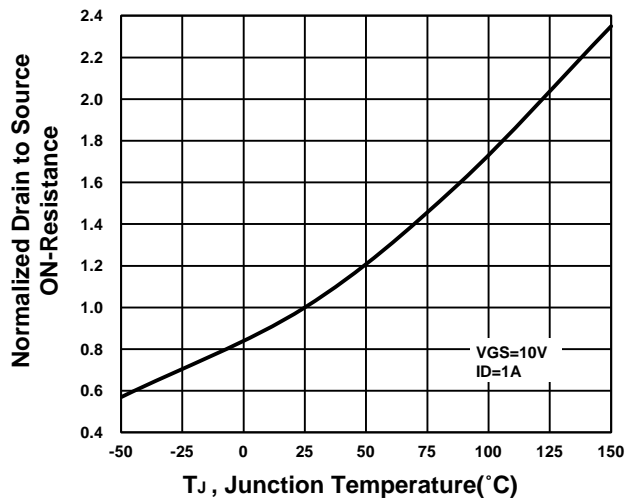
**On-Resistance VS Gate-To-Source Voltage**



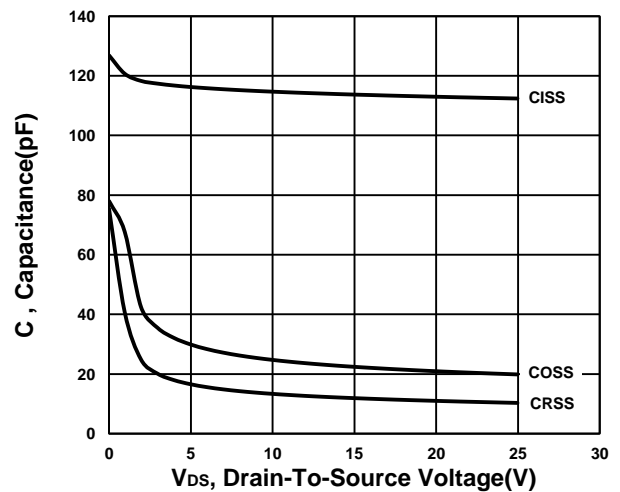
**On-Resistance VS Drain Current**



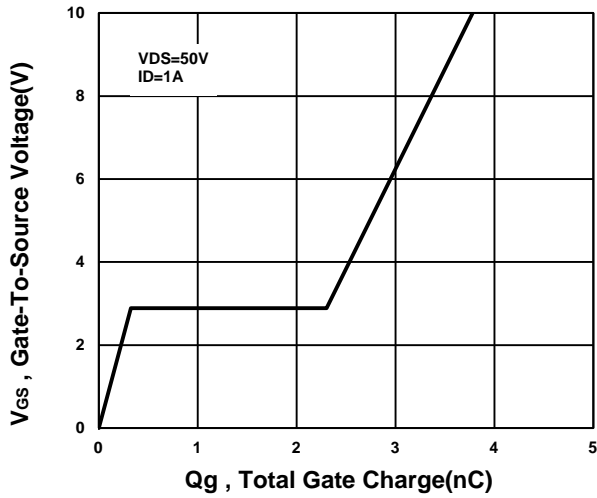
**On-Resistance VS Temperature**



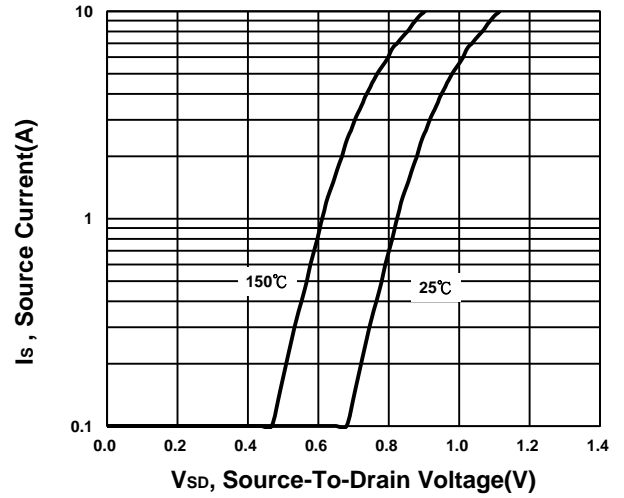
**Capacitance Characteristic**



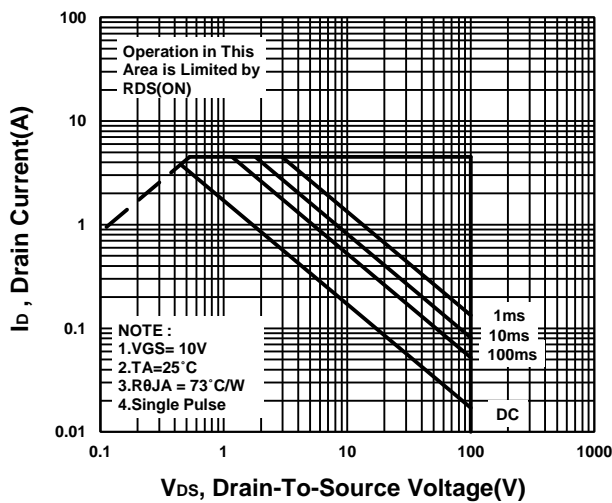
**Gate charge Characteristics**



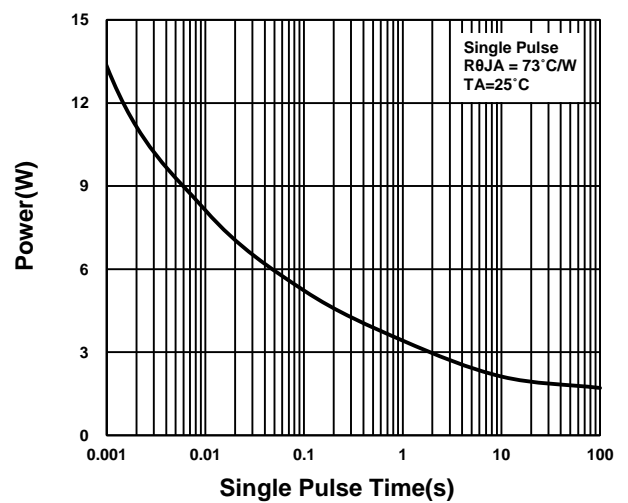
**Source-Drain Diode Forward Voltage**



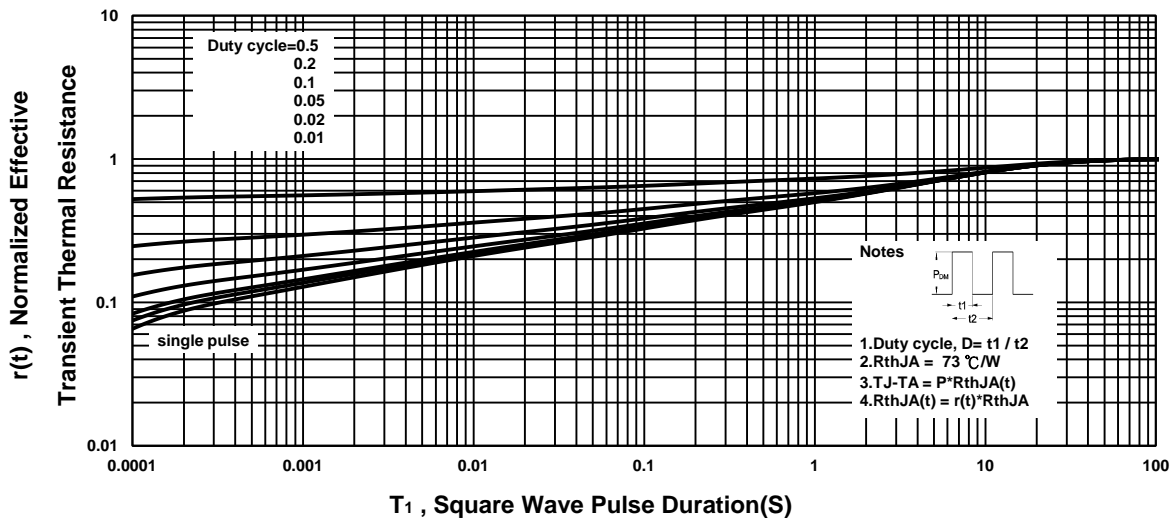
**Safe Operating Area**



**Single Pulse Maximum Power Dissipation**



**Transient Thermal Response Curve**



**Transient Thermal Response Curve**

