

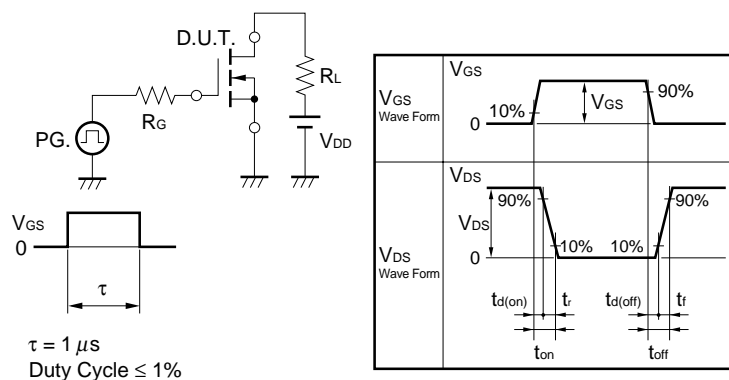


**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C)**

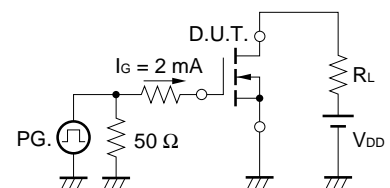
| CHARACTERISTICS                                 | SYMBOL               | TEST CONDITIONS                                   | MIN. | TYP. | MAX.  | UNIT |
|-------------------------------------------------|----------------------|---------------------------------------------------|------|------|-------|------|
| Zero Gate Voltage Drain Current                 | I <sub>DSS</sub>     | V <sub>DS</sub> = 30.0 V, V <sub>GS</sub> = 0 V   |      |      | 1.0   | μA   |
| Gate Leakage Current                            | I <sub>GSS</sub>     | V <sub>GS</sub> = ±12.0 V, V <sub>DS</sub> = 0 V  |      |      | ±10.0 | μA   |
| Gate Cut-off Voltage                            | V <sub>GS(off)</sub> | V <sub>DS</sub> = 10.0 V, I <sub>D</sub> = 1.0 mA | 0.50 | 1.00 | 1.50  | V    |
| Forward Transfer Admittance <b>Note</b>         | y <sub>fs</sub>      | V <sub>DS</sub> = 10.0 V, I <sub>D</sub> = 4.0 A  | 5    |      |       | S    |
| Drain to Source On-state Resistance <b>Note</b> | R <sub>DS(on)1</sub> | V <sub>GS</sub> = 4.5 V, I <sub>D</sub> = 4.0 A   | 9.0  | 11.5 | 14.0  | mΩ   |
|                                                 | R <sub>DS(on)2</sub> | V <sub>GS</sub> = 4.0 V, I <sub>D</sub> = 4.0 A   | 9.5  | 12.0 | 14.5  | mΩ   |
|                                                 | R <sub>DS(on)3</sub> | V <sub>GS</sub> = 3.1 V, I <sub>D</sub> = 4.0 A   | 10.0 | 13.0 | 16.5  | mΩ   |
|                                                 | R <sub>DS(on)4</sub> | V <sub>GS</sub> = 2.5 V, I <sub>D</sub> = 4.0 A   | 11.0 | 15.0 | 19.5  | mΩ   |
| Input Capacitance                               | C <sub>iss</sub>     | V <sub>DS</sub> = 10.0 V                          |      | 930  |       | pF   |
| Output Capacitance                              | C <sub>oss</sub>     | V <sub>GS</sub> = 0 V                             |      | 170  |       | pF   |
| Reverse Transfer Capacitance                    | C <sub>rss</sub>     | f = 1.0 MHz                                       |      | 120  |       | pF   |
| Turn-on Delay Time                              | t <sub>d(on)</sub>   | V <sub>DD</sub> = 10.0 V, I <sub>D</sub> = 4.0 A  |      | 46   |       | ns   |
| Rise Time                                       | t <sub>r</sub>       | V <sub>GS</sub> = 4.0 V                           |      | 230  |       | ns   |
| Turn-off Delay Time                             | t <sub>d(off)</sub>  | R <sub>G</sub> = 10 Ω                             |      | 260  |       | ns   |
| Fall Time                                       | t <sub>f</sub>       |                                                   |      | 250  |       | ns   |
| Total Gate Charge                               | Q <sub>G</sub>       | V <sub>DD</sub> = 24.0 V                          |      | 10.0 |       | nC   |
| Gate to Source Charge                           | Q <sub>GS</sub>      | V <sub>GS</sub> = 4.0 V                           |      | 2.0  |       | nC   |
| Gate to Drain Charge                            | Q <sub>GD</sub>      | I <sub>D</sub> = 8.0 A                            |      | 4.5  |       | nC   |
| Body Diode Forward Voltage <b>Note</b>          | V <sub>F(S-D)</sub>  | I <sub>F</sub> = 8.0 A, V <sub>GS</sub> = 0 V     |      | 0.82 |       | V    |
| Reverse Recovery Time                           | t <sub>rr</sub>      | I <sub>F</sub> = 8.0 A, V <sub>GS</sub> = 0 V     |      | 150  |       | ns   |
| Reverse Recovery Charge                         | Q <sub>rr</sub>      | di/dt = 50 A/μs                                   |      | 80   |       | nC   |

**Note** Pulsed: PW ≤ 350 μs, Duty Cycle ≤ 2%

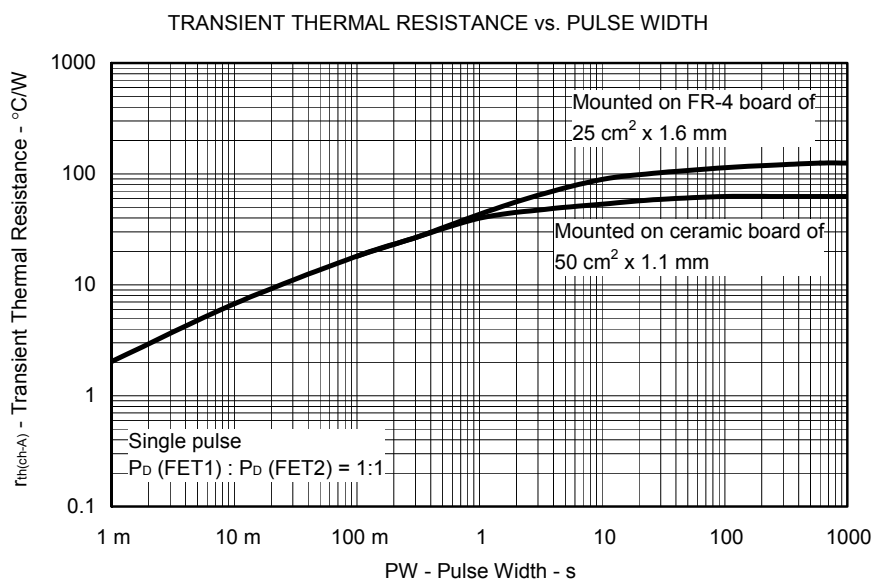
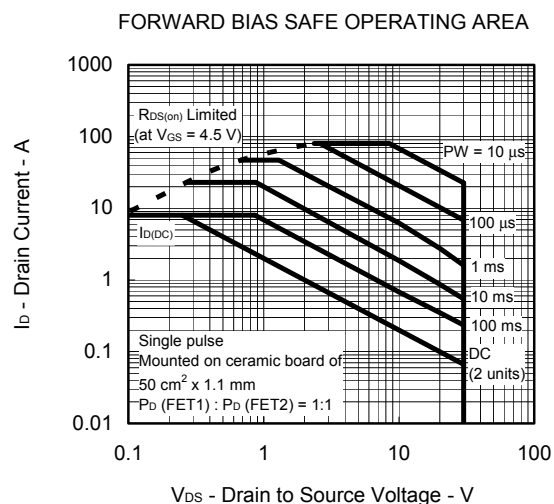
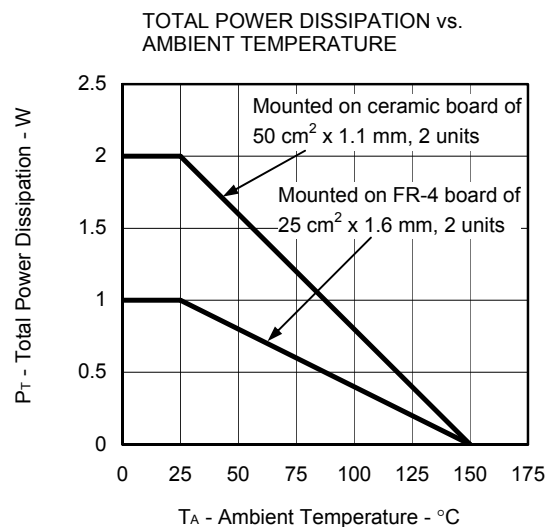
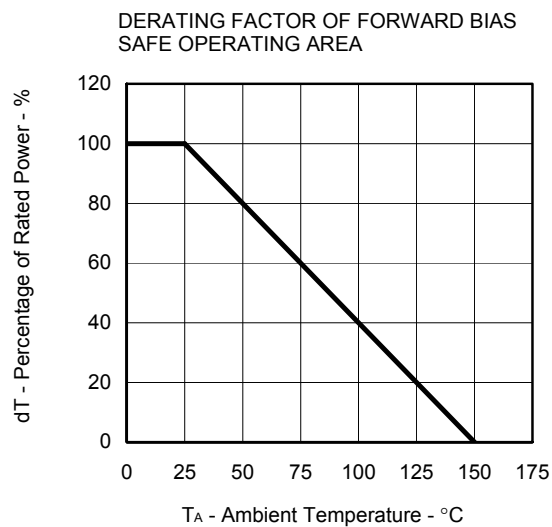
**TEST CIRCUIT 1 SWITCHING TIME**



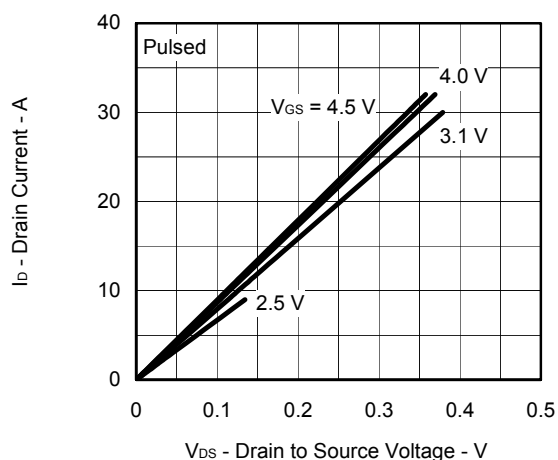
**TEST CIRCUIT 2 GATE CHARGE**



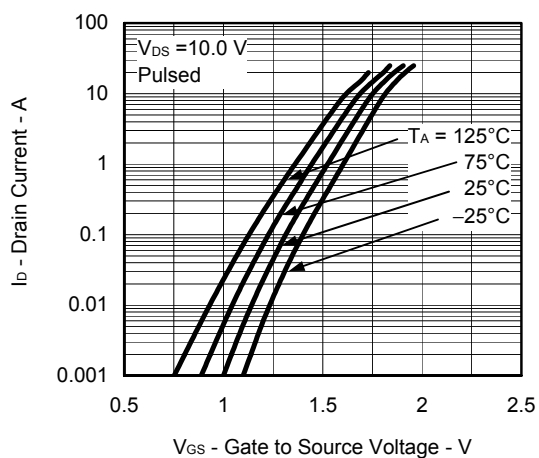
TYPICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ )



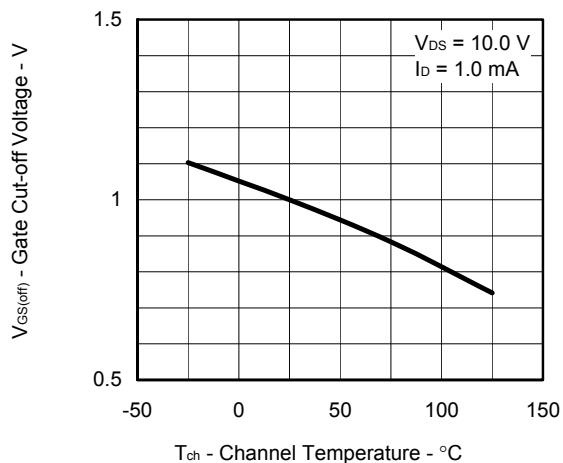
DRAIN CURRENT vs.  
DRAIN TO SOURCE VOLTAGE



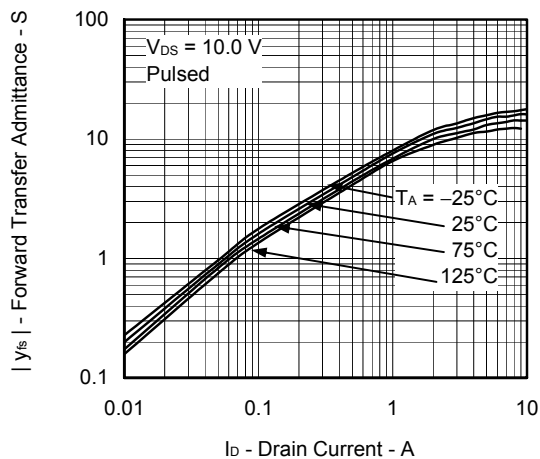
FORWARD TRANSFER CHARACTERISTICS



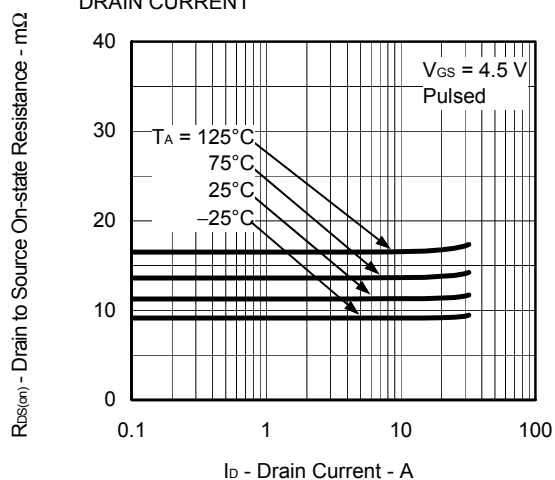
GATE CUT-OFF VOLTAGE vs.  
CHANNEL TEMPERATURE



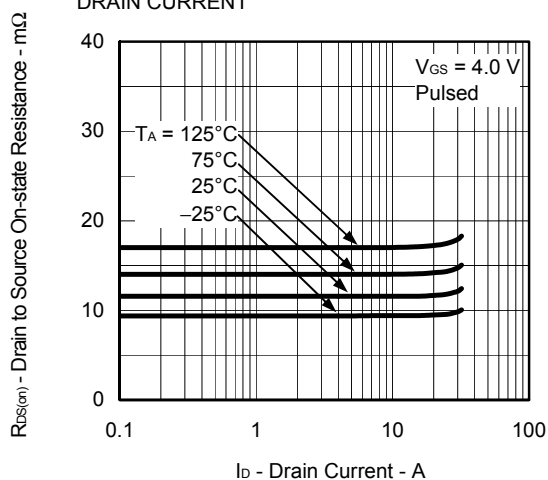
FORWARD TRANSFER ADMITTANCE vs.  
DRAIN CURRENT

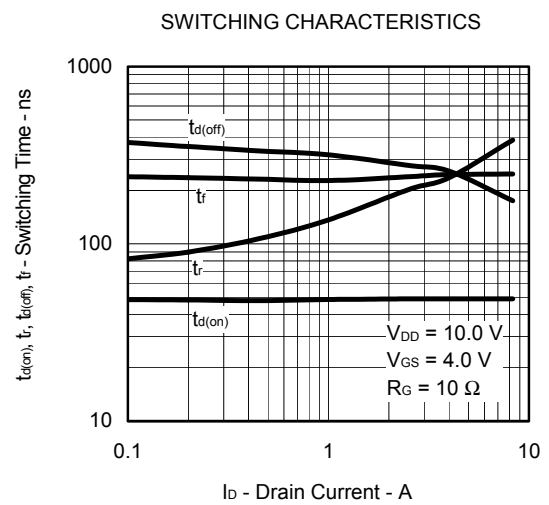
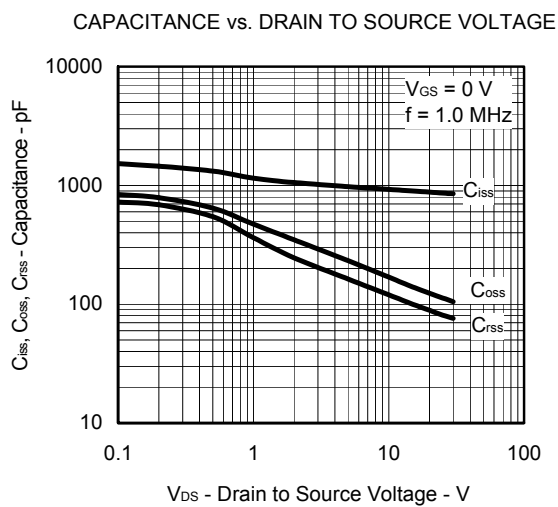
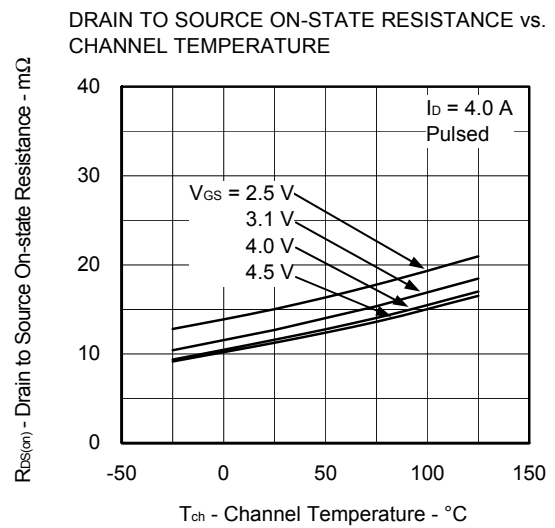
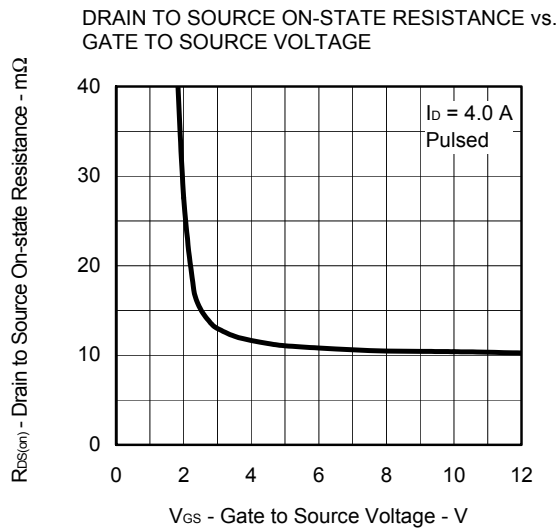
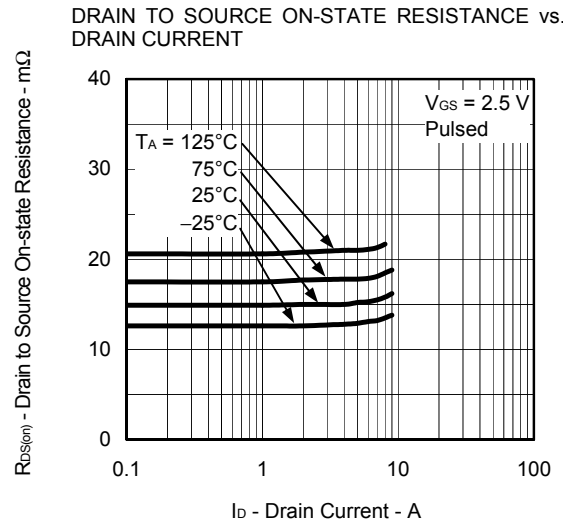
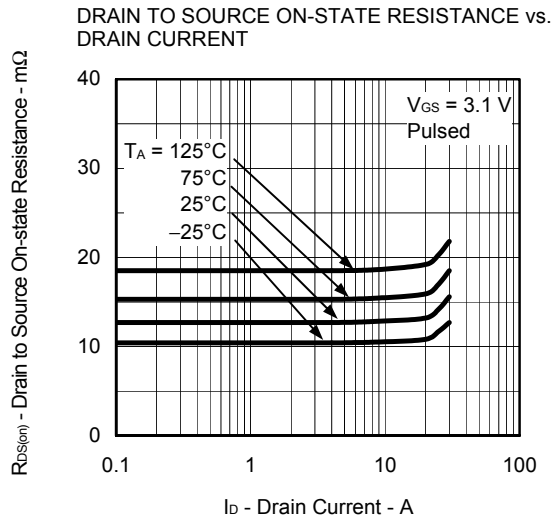


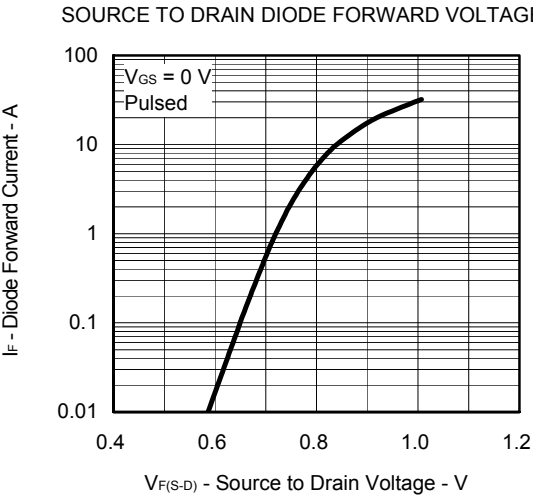
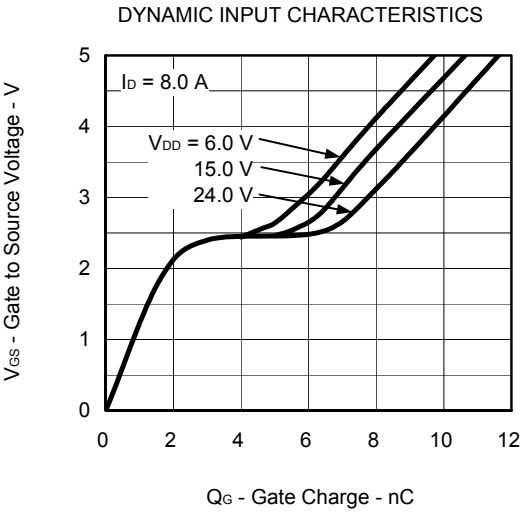
DRAIN TO SOURCE ON-STATE RESISTANCE vs.  
DRAIN CURRENT



DRAIN TO SOURCE ON-STATE RESISTANCE vs.  
DRAIN CURRENT







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