

**SPECIFICATIONS**  $T_J = 25^\circ\text{C}$ , unless otherwise noted

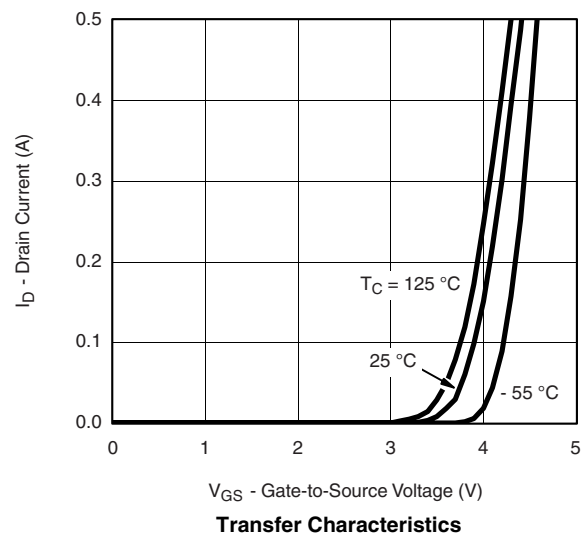
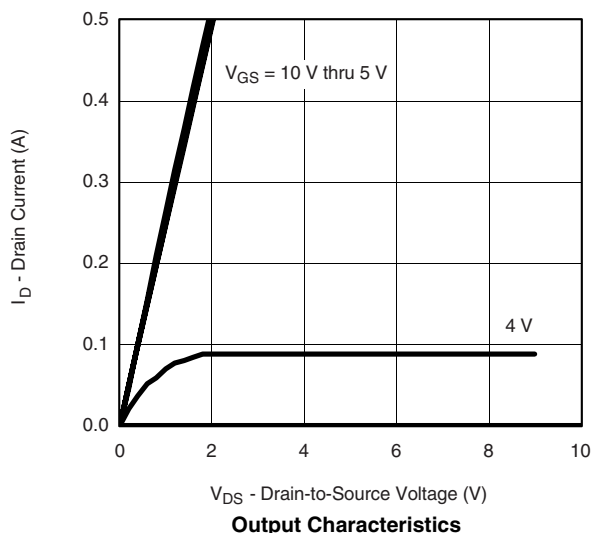
| Parameter                                     | Symbol       | Test Conditions                                                                                                              | Min. | Typ.  | Max.      | Unit          |
|-----------------------------------------------|--------------|------------------------------------------------------------------------------------------------------------------------------|------|-------|-----------|---------------|
| <b>Static</b>                                 |              |                                                                                                                              |      |       |           |               |
| Gate Threshold Voltage                        | $V_{GS(th)}$ | $V_{DS} = V_{GS}$ , $I_D = -100\ \mu\text{A}$                                                                                | -2.5 |       | -4.5      | V             |
| 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        | $\mu\text{A}$ |
|                                               |              | $V_{DS} = -200\ \text{V}$ , $V_{GS} = 0\ \text{V}$ , $T_J = 85^\circ\text{C}$                                                |      |       | -5        |               |
| On-State Drain Current <sup>a</sup>           | $I_{D(on)}$  | $V_{DS} = -15\ \text{V}$ , $V_{GS} = -10\ \text{V}$                                                                          | -0.5 |       |           | A             |
| Drain-Source On-State Resistance <sup>a</sup> | $R_{DS(on)}$ | $V_{GS} = -10\ \text{V}$ , $I_D = -0.4\ \text{A}$                                                                            |      | 3.98  | 5.0       | $\Omega$      |
|                                               |              | $V_{GS} = -6\ \text{V}$ , $I_D = -0.4\ \text{A}$                                                                             |      | 4.06  | 5.1       |               |
| Forward Transconductance <sup>a</sup>         | $g_{fs}$     | $V_{DS} = -10\ \text{V}$ , $I_D = -0.4\ \text{A}$                                                                            |      | 1.0   |           | S             |
| Diode Forward Voltage <sup>a</sup>            | $V_{SD}$     | $I_S = -0.4\ \text{A}$ , $V_{GS} = 0\ \text{V}$                                                                              |      | -0.80 | -1.1      | V             |
| <b>Dynamic<sup>b</sup></b>                    |              |                                                                                                                              |      |       |           |               |
| Total Gate Charge                             | $Q_g$        | $V_{DS} = -100\ \text{V}$ , $V_{GS} = -10\ \text{V}$ , $I_D = -0.4\ \text{A}$                                                |      | 4.1   | 6.2       | nC            |
| Gate-Source Charge                            | $Q_{gs}$     |                                                                                                                              |      | 0.8   |           |               |
| Gate-Drain Charge                             | $Q_{gd}$     |                                                                                                                              |      | 1.3   |           |               |
| Gate Resistance                               | $R_g$        | $f = 1.0\ \text{MHz}$                                                                                                        |      | 17    |           | $\Omega$      |
| Turn-On Delay Time                            | $t_{d(on)}$  | $V_{DD} = -100\ \text{V}$ , $R_L = 100\ \Omega$<br>$I_D \cong -1\ \text{A}$ , $V_{GEN} = -4.5\ \text{V}$ , $R_g = 6\ \Omega$ |      | 6     | 9         | ns            |
| Rise Time                                     | $t_r$        |                                                                                                                              |      | 12    | 18        |               |
| Turn-Off Delay Time                           | $t_{d(off)}$ |                                                                                                                              |      | 12    | 18        |               |
| Fall Time                                     | $t_f$        |                                                                                                                              |      | 12    | 18        |               |
| Reverse Recovery Time                         | $t_{rr}$     | $I_F = -0.4\ \text{A}$ , $dI/dt = 100\ \text{A}/\mu\text{s}$                                                                 |      | 55    | 83        |               |
| Body Diode Reverse Recovery Charge            | $Q_{rr}$     |                                                                                                                              |      | 130   | 200       |               |

Notes:

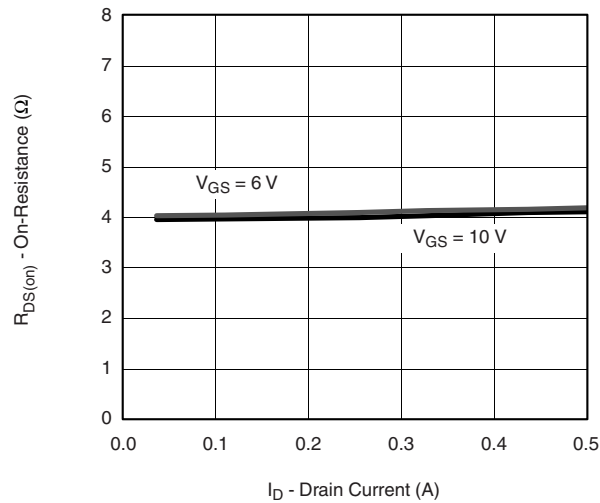
a. Pulse test; pulse width  $\leq 300\ \mu\text{s}$ , duty cycle  $\leq 2\%$ .

b. Guaranteed by design, not subject to production testing.

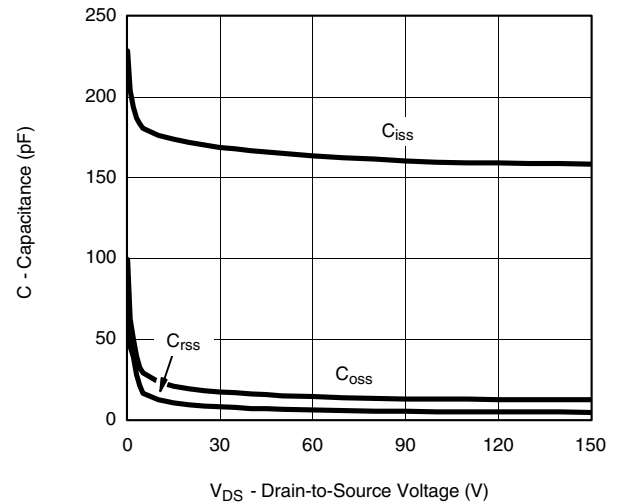
Stresses beyond those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

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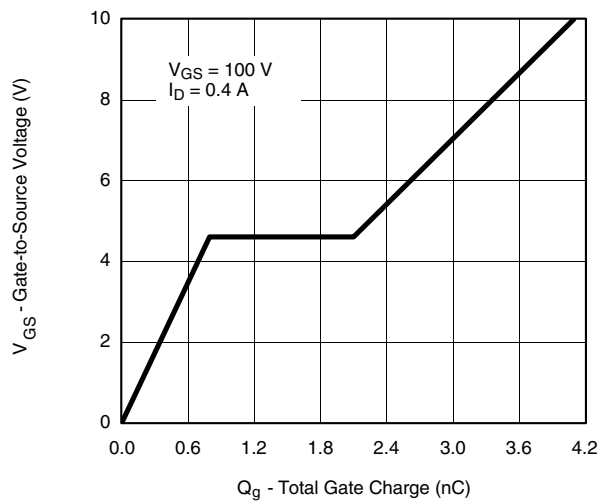
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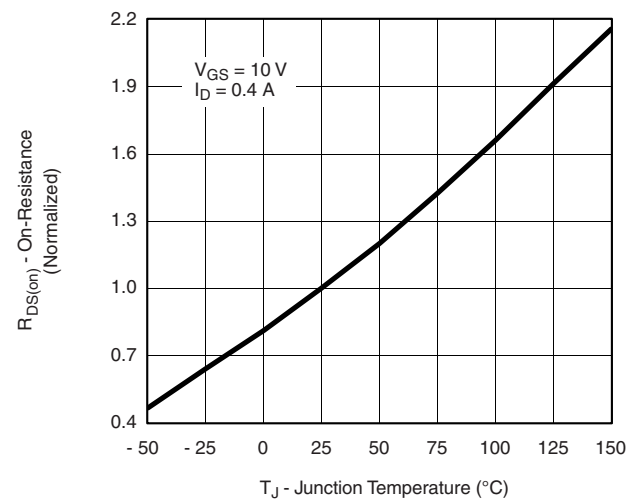
On-Resistance vs. Drain Current



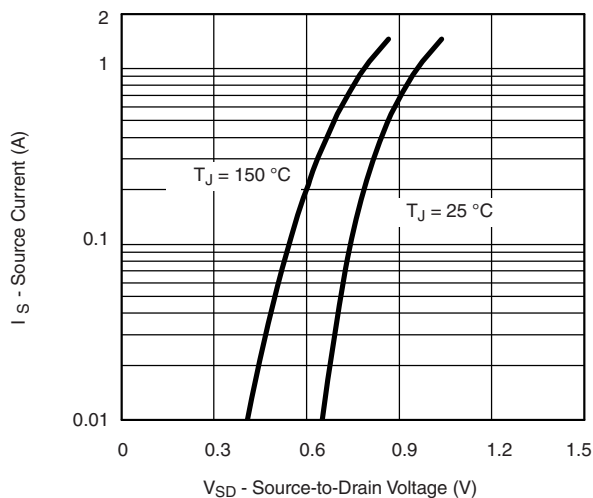
Capacitance



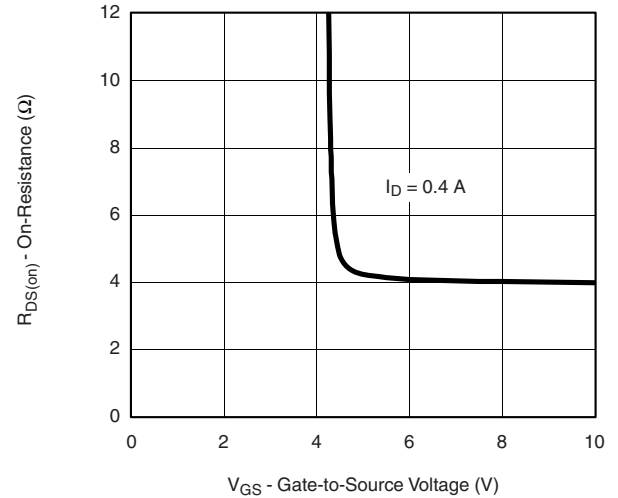
Gate Charge



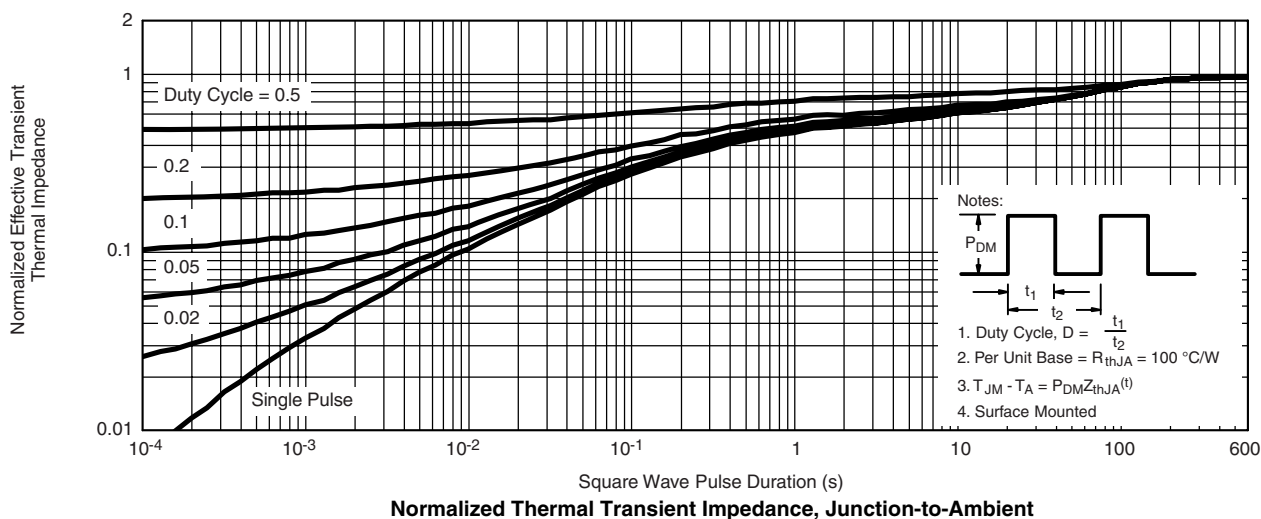
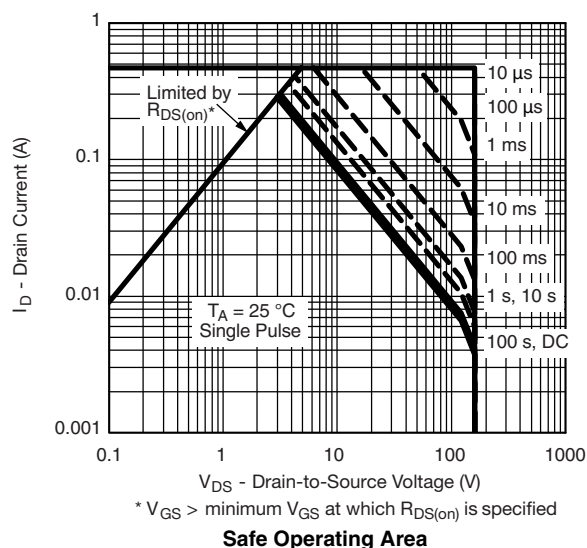
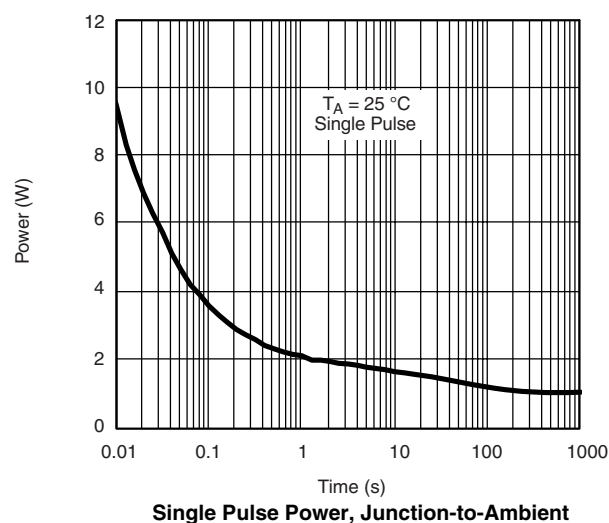
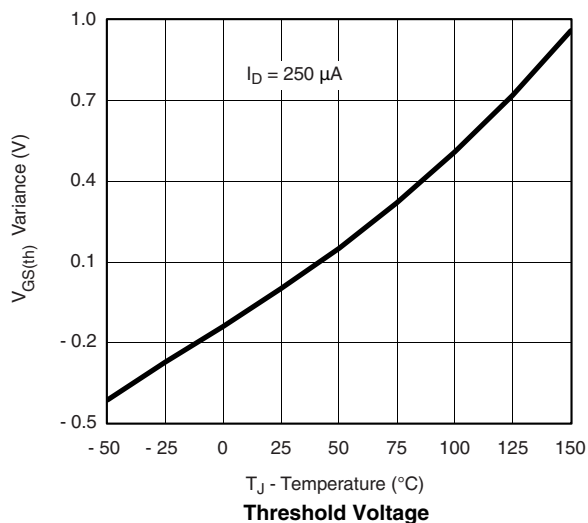
On-Resistance vs. Junction Temperature



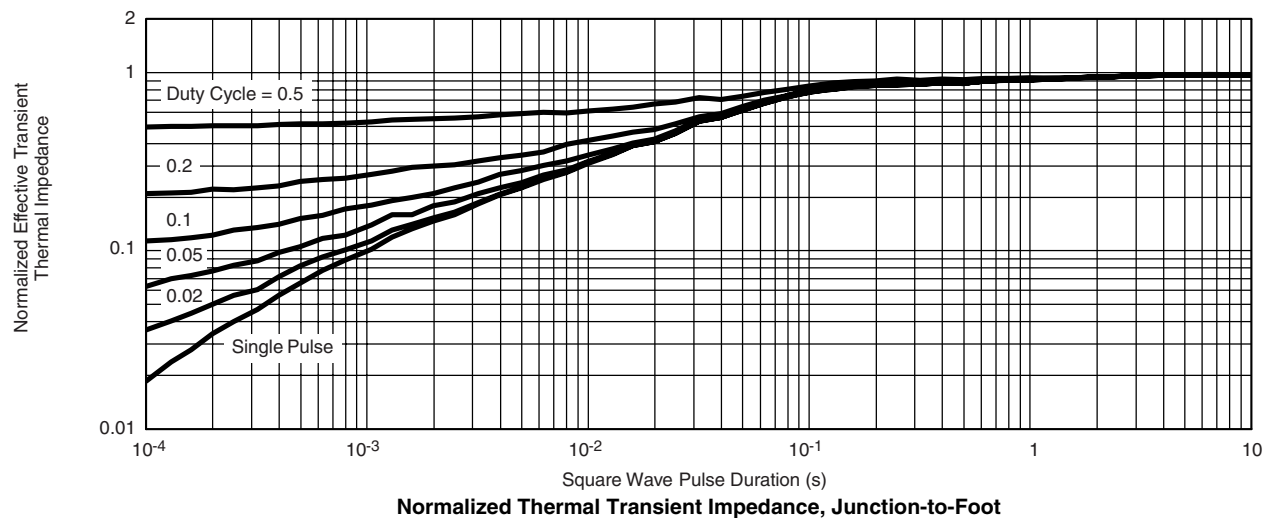
Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage

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