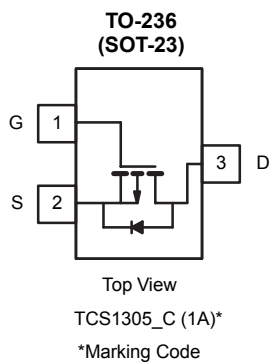


| PRODUCT SUMMARY | | |
|-----------------|---------------------------|------------------------|
| V_{DS} (V) | $r_{DS(on)}$ (Ω) | I_D (A) ^b |
| -20 | 0.130 @ $V_{GS} = -4.5$ V | -2.0 |
| | 0.190 @ $V_{GS} = -2.5$ V | -1.6 |



| ABSOLUTE MAXIMUM RATINGS (T _A = 25 °C UNLESS OTHERWISE NOTED) | | | | | |
|--|------------------------|-----------------------------------|------------|--------------|------|
| Parameter | | Symbol | 5 sec | Steady State | Unit |
| Drain-Source Voltage | | V _{DS} | −20 | | V |
| Gate-Source Voltage | | V _{GS} | ± 8 | | |
| Continuous Drain Current (T _J = 150 °C) ^b | T _A = 25 °C | I _D | −2.0 | −1.75 | A |
| | T _A = 70 °C | | −1.6 | −1.4 | |
| Pulsed Drain Current ^a | | I _{DM} | −10 | | |
| Continuous Source Current (Diode Conduction) ^b | | I _S | −0.75 | −0.6 | W |
| Power Dissipation ^b | T _A = 25 °C | P _D | 0.9 | 0.7 | |
| | T _A = 70 ° | | 0.57 | 0.45 | |
| Operating Junction and Storage Temperature Range | | T _J , T _{stg} | −55 to 150 | | °C |

| THERMAL RESISTANCE RATINGS | | | | |
|--|------------|---------|---------|------|
| Parameter | Symbol | Typical | Maximum | Unit |
| Maximum Junction-to-Ambient ^b | R_{thJA} | 115 | 140 | °C/W |
| Maximum Junction-to-Ambient ^c | | 140 | 175 | |

Notes

- Pulse width limited by maximum junction temperature.
- Surface Mounted on FR4 Board, $t \leq 5$ sec.
- Surface Mounted on FR4 Board.

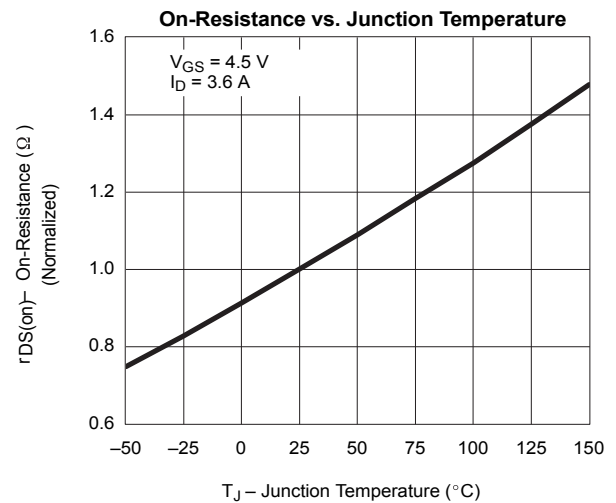
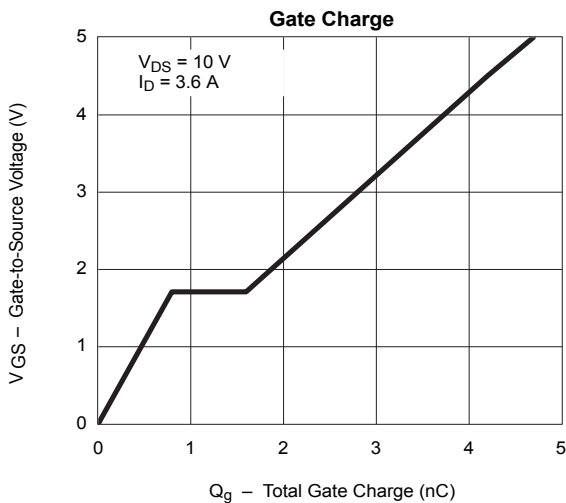
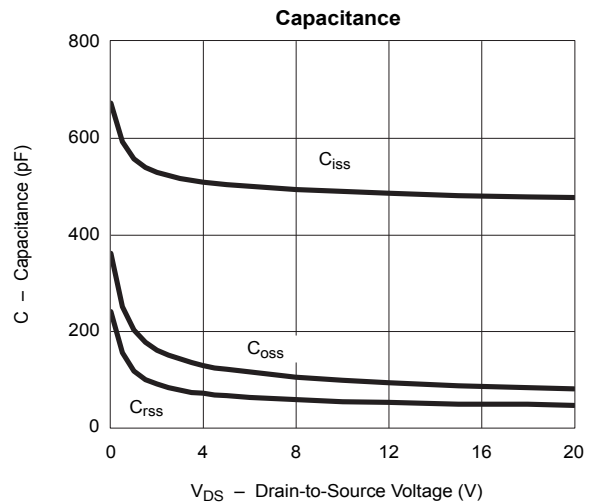
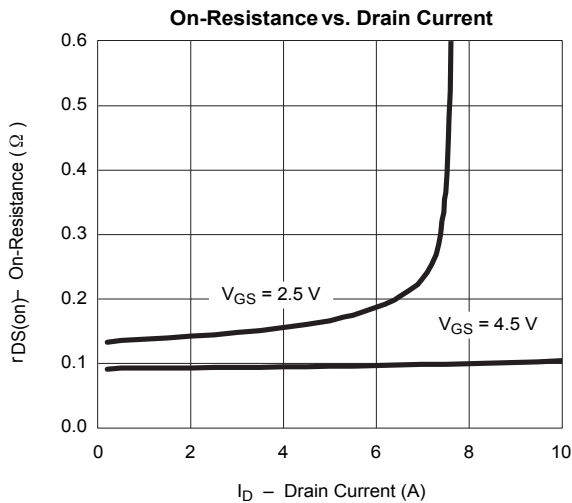
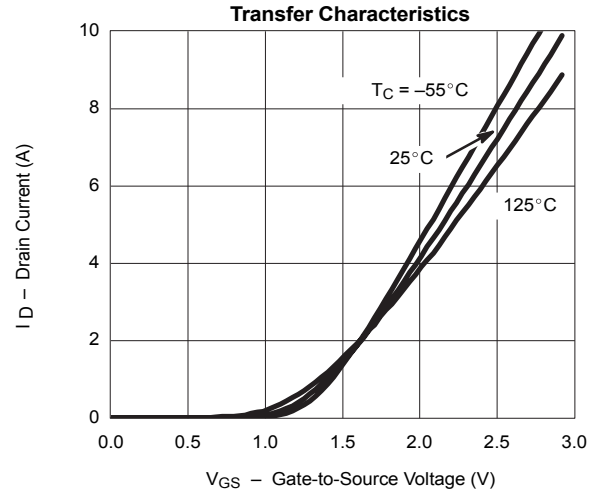
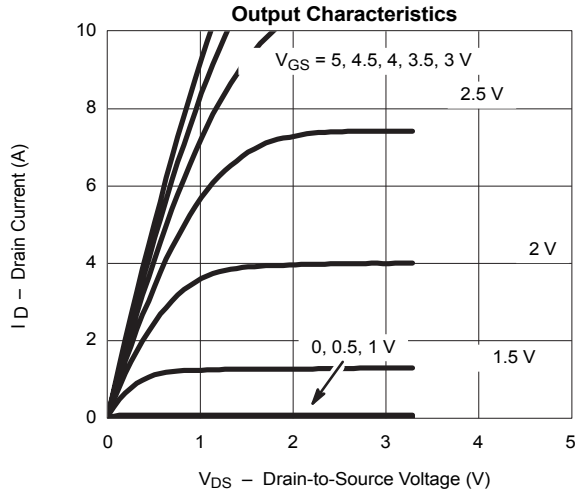
SPECIFICATIONS ($T_J = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

| Parameter | Symbol | Test Conditions | Limits | | | Unit |
|---|---------------|--|--------|-------|-----------|---------------|
| | | | Min | Typ | Max | |
| Static | | | | | | |
| Drain-Source Breakdown Voltage | $V_{(BR)DSS}$ | $V_{GS} = 0\text{ V}, I_D = -250\text{ }\mu\text{A}$ | -20 | | | V |
| Gate-Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = -250\text{ }\mu\text{A}$ | -0.45 | | -0.95 | |
| Gate-Body Leakage | I_{GSS} | $V_{DS} = 0\text{ V}, V_{GS} = \pm 8\text{ V}$ | | | ± 100 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = -16\text{ V}, V_{GS} = 0\text{ V}$ | | | -1 | μA |
| | | $V_{DS} = -16\text{ V}, V_{GS} = 0\text{ V}, T_J = 55^\circ\text{C}$ | | | -10 | |
| On-State Drain Current ^a | $I_{D(on)}$ | $V_{DS} \leq -5\text{ V}, V_{GS} = -4.5\text{ V}$ | -6 | | | A |
| | | $V_{DS} \leq -5\text{ V}, V_{GS} = -2.5\text{ V}$ | -3 | | | |
| Drain-Source On-Resistance ^a | $r_{DS(on)}$ | $V_{GS} = -4.5\text{ V}, I_D = -2.8\text{ A}$ | | 0.093 | 0.130 | Ω |
| | | $V_{GS} = -2.5\text{ V}, I_D = -2.0\text{ A}$ | | 0.140 | 0.190 | |
| Forward Transconductance ^a | g_{fs} | $V_{DS} = -5\text{ V}, I_D = -2.8\text{ A}$ | | 6.5 | | S |
| Diode Forward Voltage | V_{SD} | $I_S = -0.75\text{ A}, V_{GS} = 0\text{ V}$ | | -0.80 | -1.2 | V |
| Dynamic ^b | | | | | | |
| Total Gate Charge | Q_g | $V_{DS} = -6\text{ V}, V_{GS} = -4.5\text{ V}$ $I_D \cong -2.8\text{ A}$ | | 4.2 | 10 | nC |
| Gate-Source Charge | Q_{gs} | | | 0.8 | | |
| Gate-Drain Charge | Q_{gd} | | | 0.8 | | |
| Input Capacitance | C_{iss} | $V_{DS} = -6\text{ V}, V_{GS} = 0, f = 1\text{ MHz}$ | | 500 | | pF |
| Output Capacitance | C_{oss} | | | 115 | | |
| Reverse Transfer Capacitance | C_{rss} | | | 62 | | |
| Switching ^c | | | | | | |
| Turn-On Time | $t_{d(on)}$ | $V_{DD} = -6\text{ V}, R_L = 6\text{ }\Omega$ $I_D \cong -1.0\text{ A}, V_{GEN} = -4.5\text{ V}$ $R_G = 6\text{ }\Omega$ | | 6 | 25 | ns |
| | t_r | | | 30 | 60 | |
| Turn-Off Time | $t_{d(off)}$ | | | 25 | 70 | |
| | t_f | | | 10 | 60 | |

Notes

- Pulse test: $PW \leq 300\text{ }\mu\text{s}$ duty cycle $\leq 2\%$.
- For DESIGN AID ONLY, not subject to production testing.
- Switching time is essentially independent of operating temperature.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25 °C UNLESS NOTED)

