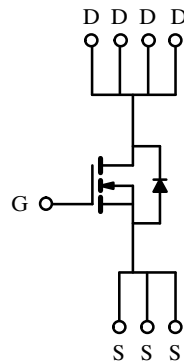
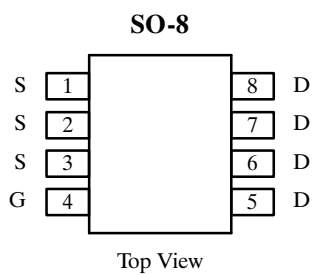


N-Channel Enhancement-Mode MOSFET

Product Summary

| V_{DS} (V) | $r_{DS(on)}$ (Ω) | I_D (A) |
|--------------|---------------------------|-----------|
| 30 | 0.028 @ $V_{GS} = 10$ V | ± 7.0 |
| | 0.042 @ $V_{GS} = 4.5$ V | ± 5.8 |



N-Channel MOSFET

Absolute Maximum Ratings ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter | Symbol | Limit | Unit |
|---------------------------------------------------------------------|----------------|--------------------------|------------------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | |
| Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a | I_D | $T_A = 25^\circ\text{C}$ | A |
| | | $T_A = 70^\circ\text{C}$ | |
| Pulsed Drain Current | I_{DM} | ± 30 | A |
| Continuous Source Current (Diode Conduction) ^a | I_S | 2.3 | |
| Maximum Power Dissipation ^a | P_D | $T_A = 25^\circ\text{C}$ | W |
| | | $T_A = 70^\circ\text{C}$ | |
| Operating Junction and Storage Temperature Range | T_J, T_{stg} | -55 to 150 | $^\circ\text{C}$ |

Thermal Resistance Ratings

| Parameter | Symbol | Limit | Unit |
|------------------------------------------|------------|-------|---------------------------|
| Maximum Junction-to-Ambient ^a | R_{thJA} | 50 | $^\circ\text{C}/\text{W}$ |

Notes

a. Surface Mounted on FR4 Board, $t \leq 10$ sec.

Subsequent updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #1236.

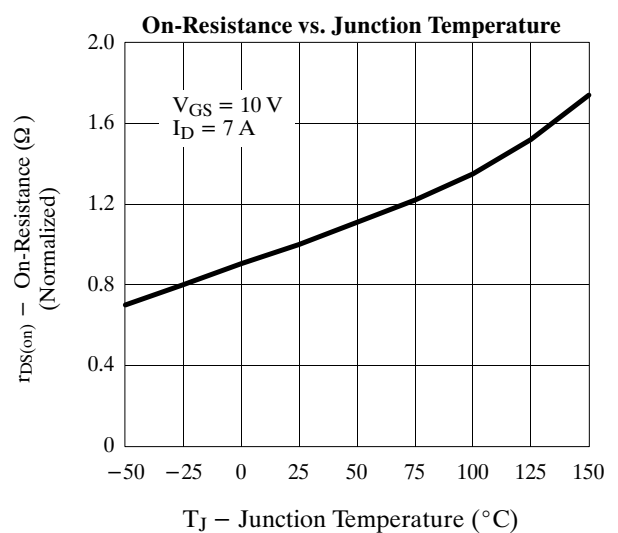
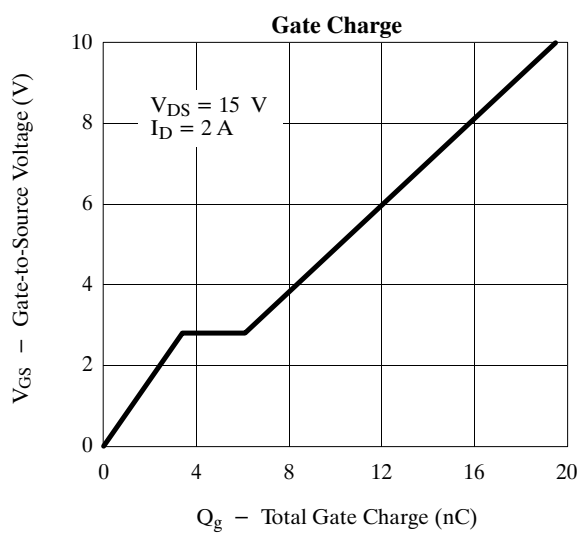
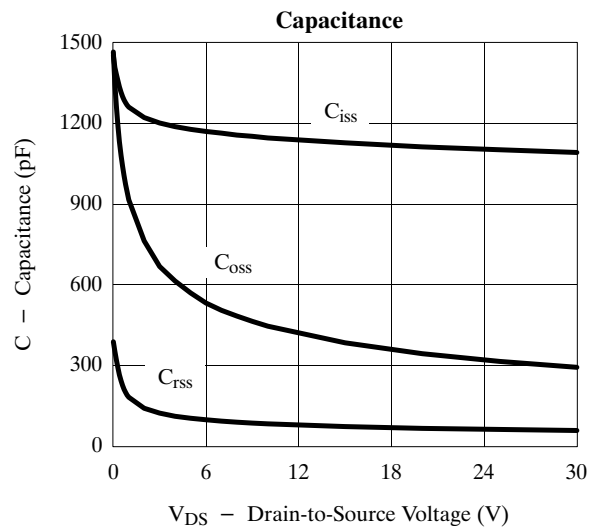
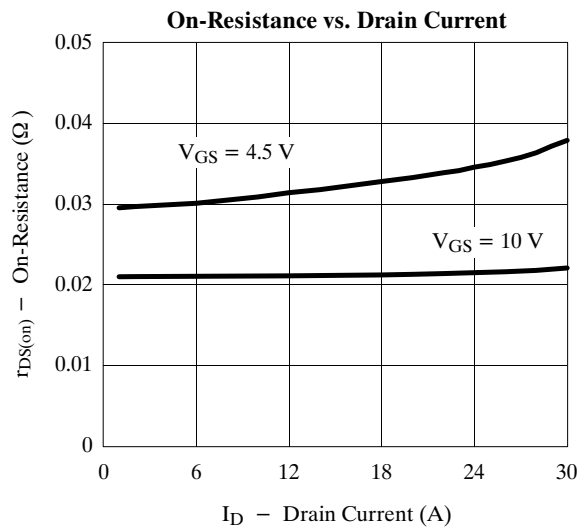
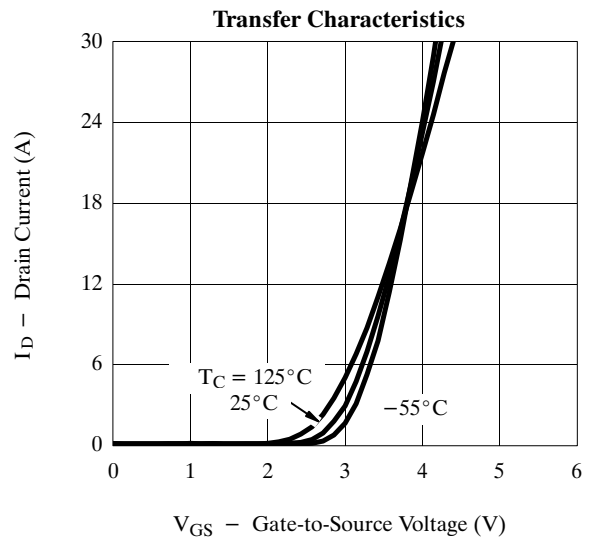
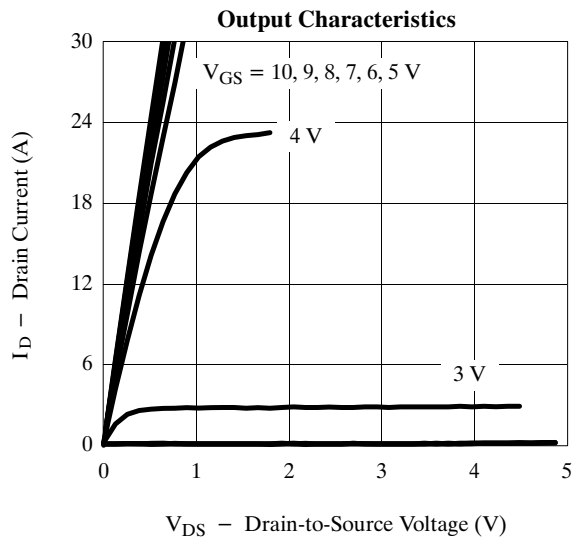
Specifications ($T_J = 25^\circ\text{C}$ Unless Otherwise Noted)

| Parameter | Symbol | Test Condition | Min | Typ ^a | Max | Unit |
|-----------------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------|-----|------------------|-----------|---------------|
| Static | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS} = V_{GS}, I_D = 250\ \mu\text{A}$ | 1.0 | | | V |
| Gate-Body Leakage | I_{GSS} | $V_{DS} = 0\ \text{V}, V_{GS} = \pm 20\ \text{V}$ | | | ± 100 | nA |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS} = 30\ \text{V}, V_{GS} = 0\ \text{V}$ | | | 2 | μA |
| | | $V_{DS} = 30\ \text{V}, V_{GS} = 0\ \text{V}, T_J = 55^\circ\text{C}$ | | | 25 | |
| On-State Drain Current ^b | $I_{D(on)}$ | $V_{DS} \geq 5\ \text{V}, V_{GS} = 10\ \text{V}$ | 30 | | | A |
| Drain-Source On-State Resistance ^b | $r_{DS(on)}$ | $V_{GS} = 10\ \text{V}, I_D = 7.0\ \text{A}$ | | 0.021 | 0.028 | Ω |
| | | $V_{GS} = 4.5\ \text{V}, I_D = 3.5\ \text{A}$ | | 0.030 | 0.042 | |
| Forward Transconductance ^b | g_{fs} | $V_{DS} = 15\ \text{V}, I_D = 7.0\ \text{A}$ | | 16 | | S |
| Diode Forward Voltage ^b | V_{SD} | $I_S = 2\ \text{A}, V_{GS} = 0\ \text{V}$ | | 0.75 | 1.1 | V |
| Dynamic^a | | | | | | |
| Total Gate Charge | Q_g | $V_{DS} = 15\ \text{V}, V_{GS} = 10\ \text{V}, I_D = 2\ \text{A}$ | | 19.5 | 29 | nC |
| Gate-Source Charge | Q_{gs} | | | 3.4 | | |
| Gate-Drain Charge | Q_{gd} | | | 2.7 | | |
| Turn-On Delay Time | $t_{d(on)}$ | $V_{DD} = 25\ \text{V}, R_L = 25\ \Omega$ $I_D \cong 1\ \text{A}, V_{GEN} = 10\ \text{V}, R_G = 6\ \Omega$ | | 9 | 15 | ns |
| Rise Time | t_r | | | 12 | 20 | |
| Turn-Off Delay Time | $t_{d(off)}$ | | | 38 | 55 | |
| Fall Time | t_f | | | 19 | 28 | |
| Source-Drain Reverse Recovery Time | t_{rr} | $I_F = 2\ \text{A}, di/dt = 100\ \text{A}/\mu\text{s}$ | | 45 | 80 | |

Notes

- a. Guaranteed by design, not subject to production testing.
b. Pulse test; pulse width $\leq 300\ \mu\text{s}$, duty cycle $\leq 2\%$.

Typical Characteristics (25°C Unless Otherwise Noted)



Typical Characteristics (25°C Unless Otherwise Noted)

