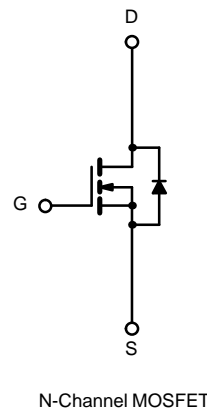
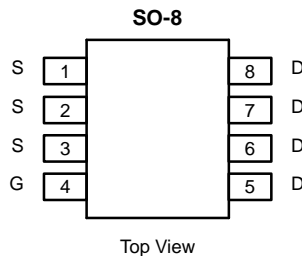




N-Channel Reduced Q_g , Fast Switching MOSFET

High-Efficiency
PWM Optimized

| PRODUCT SUMMARY | | |
|-----------------|---------------------------|-----------|
| V_{DS} (V) | $r_{DS(on)}$ (Ω) | I_D (A) |
| 25 | 0.023 @ $V_{GS} = 4.5$ V | ± 7.8 |
| | 0.030 @ $V_{GS} = 3.0$ V | ± 6.8 |



| ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED) | | | |
|---|----------------|--------------------------|------------------|
| Parameter | Symbol | Limit | Unit |
| Drain-Source Voltage | V_{DS} | 25 | V |
| Gate-Source Voltage | V_{GS} | ± 12 | |
| Continuous Drain Current ($T_J = 150^\circ\text{C}$) ^a | I_D | $T_A = 25^\circ\text{C}$ | ± 7.8 |
| | | $T_A = 70^\circ\text{C}$ | ± 6.2 |
| Pulsed Drain Current (10 μs Pulse Width) | I_{DM} | ± 40 | A |
| Continuous Source Current (Diode Conduction) ^a | I_S | ± 2.1 | |
| Maximum Power Dissipation ^a | P_D | $T_A = 25^\circ\text{C}$ | 2.5 |
| | | $T_A = 70^\circ\text{C}$ | 1.6 |
| 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 | $^\circ\text{C/W}$ |

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

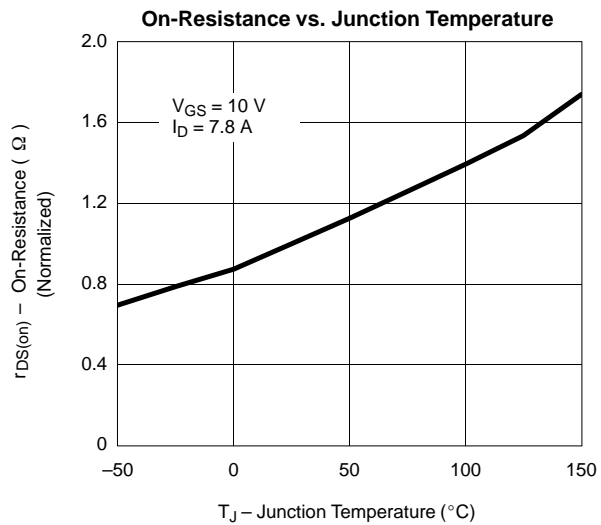
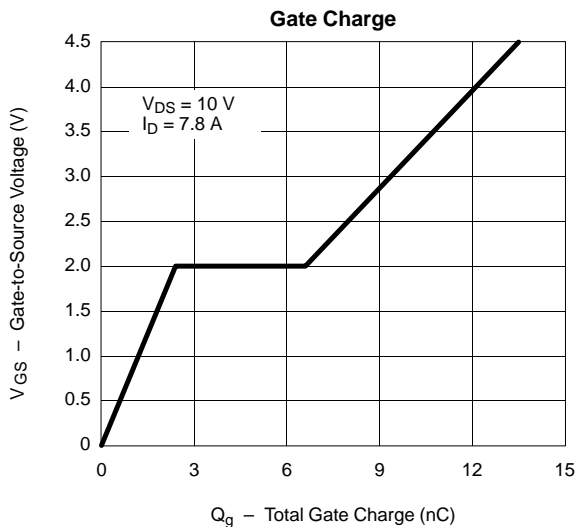
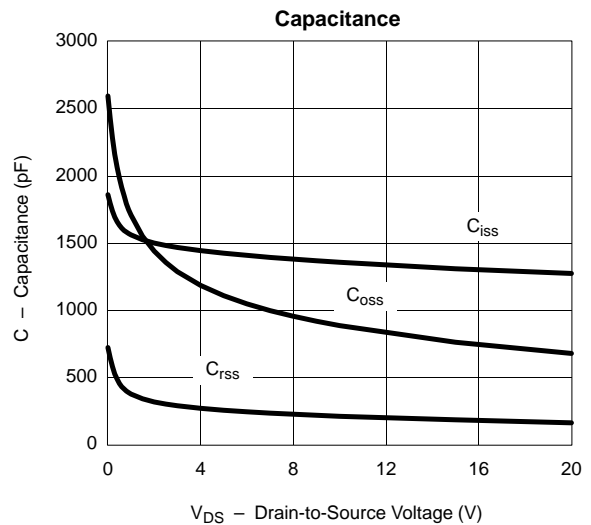
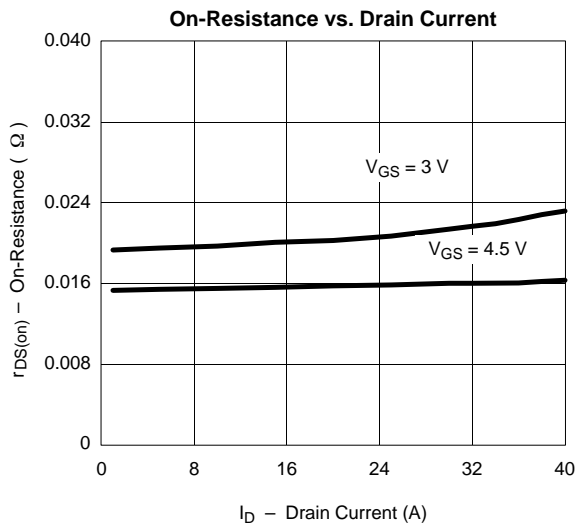
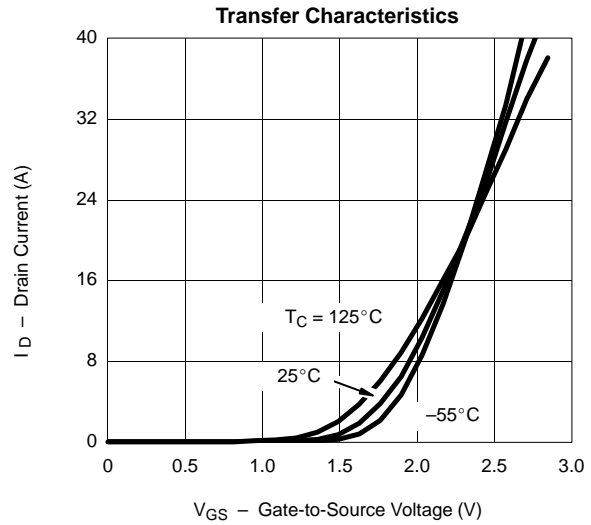
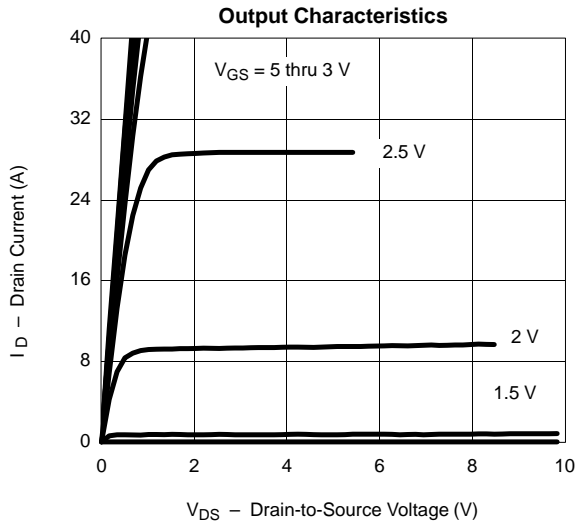


| SPECIFICATIONS (T_J = 25 °C UNLESS OTHERWISE NOTED) | | | | | | |
|--|---------------------|---|-----|-------|-------|------|
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit |
| Static | | | | | | |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250 μA | 0.6 | | | V |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0 V, V _{GS} = ± 12 V | | | ± 100 | nA |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 25 V, V _{GS} = 0 V | | | 1 | μA |
| | | V _{DS} = 25 V, V _{GS} = 0 V, T _J = 55 °C | | | 5 | |
| On-State Drain Current ^a | I _{D(on)} | V _{DS} ≥ 5 V, V _{GS} = 4.5 V | 40 | | | A |
| Drain-Source On-State Resistance ^a | r _{DS(on)} | V _{GS} = 4.5 V, I _D = 7.8 A | | 0.018 | 0.023 | Ω |
| | | V _{GS} = 3.0 V, I _D = 6.8 A | | 0.022 | 0.030 | |
| Forward Transconductance ^a | g _{fs} | V _{DS} = 10 V, I _D = 7.8 A | | 25 | | S |
| Diode Forward Voltage ^a | V _{SD} | I _S = 2.1 A, V _{GS} = 0 V | | 0.71 | 1.2 | V |
| Dynamic^b | | | | | | |
| Total Gate Charge | Q _g | V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 7.8 A | | 13.5 | 20 | nC |
| Gate-Source Charge | Q _{gs} | | | 2.4 | | |
| Gate-Drain Charge | Q _{gd} | | | 4.2 | | |
| Turn-On Delay Time | t _{d(on)} | V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω | | 16 | 30 | ns |
| Rise Time | t _r | | | 30 | 60 | |
| Turn-Off Delay Time | t _{d(off)} | | | 46 | 90 | |
| Fall Time | t _f | | | 18 | 35 | |
| Source-Drain Reverse Recovery Time | t _{rr} | I _F = 2.1 A, di/dt = 100 A/μs | | 80 | 120 | |

Notes

- a. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
- b. Guaranteed by design, not subject to production testing.

TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)



TYPICAL CHARACTERISTICS (25°C UNLESS NOTED)

