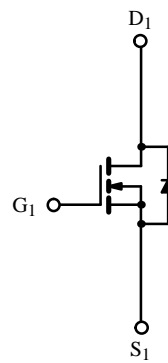
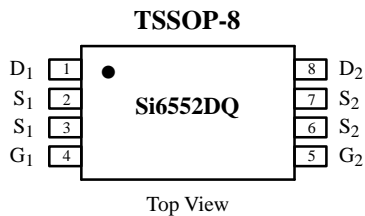


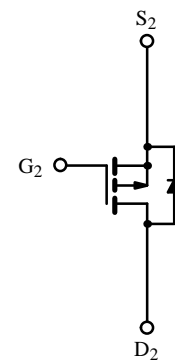
Dual Enhancement-Mode MOSFET (N- and P-Channel)

Product Summary

| | V _{DS} (V) | r _{DS(on)} (Ω) | I _D (A) |
|-----------|---------------------|---------------------------------|--------------------|
| N-Channel | 20 | 0.08 @ V _{GS} = 4.5 V | ± 2.8 |
| | | 0.11 @ V _{GS} = 2.5 V | ± 2.1 |
| P-Channel | -12 | 0.1 @ V _{GS} = -4.5 V | ± 2.5 |
| | | 0.18 @ V _{GS} = -2.5 V | ± 1.9 |



N-Channel MOSFET



P-Channel MOSFET

Absolute Maximum Ratings (T_A = 25° C Unless Otherwise Noted)

| Parameter | Symbol | N-Channel | P-Channel | Unit |
|---|-----------------------------------|------------------------|-----------|-------|
| Drain-Source Voltage | V _{DS} | 20 | -12 | V |
| Gate-Source Voltage | V _{GS} | ± 8 | | |
| Continuous Drain Current (T _J = 150° C) ^a | I _D | T _A = 25° C | ± 2.8 | ± 2.5 |
| | | T _A = 70° C | ± 2.3 | ± 2.0 |
| Pulsed Drain Current | I _{DM} | ± 20 | | A |
| Continuous Source Current (Diode Conduction) ^a | I _S | 1.0 | -1.0 | |
| Maximum Power Dissipation ^a | P _D | T _A = 25° C | 1.0 | |
| | | T _A = 70° C | 0.64 | |
| Operating Junction and Storage Temperature Range | T _J , T _{stg} | -55 to 150 | | °C |

Thermal Resistance Ratings

| Parameter | Symbol | N- or P-Channel | Unit |
|--|-------------------|-----------------|------|
| Maximum Junction-to-Ambient ^a | R _{thJA} | 125 | °C/W |

Notes

a. Surface Mounted on FR4 Board, t ≤ 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 #1808.

Specifications (T_J = 25°C Unless Otherwise Noted)

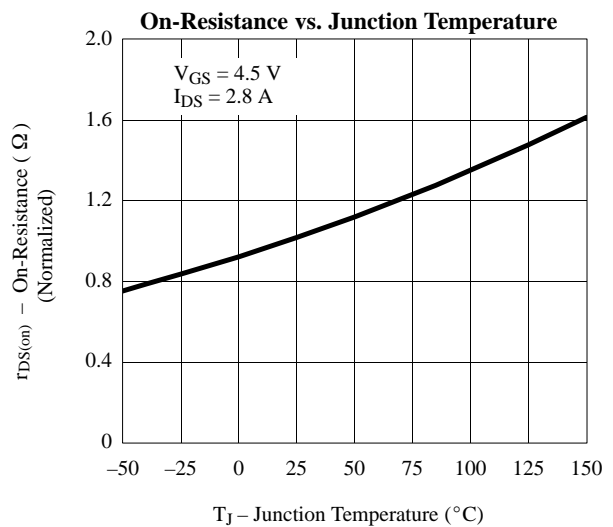
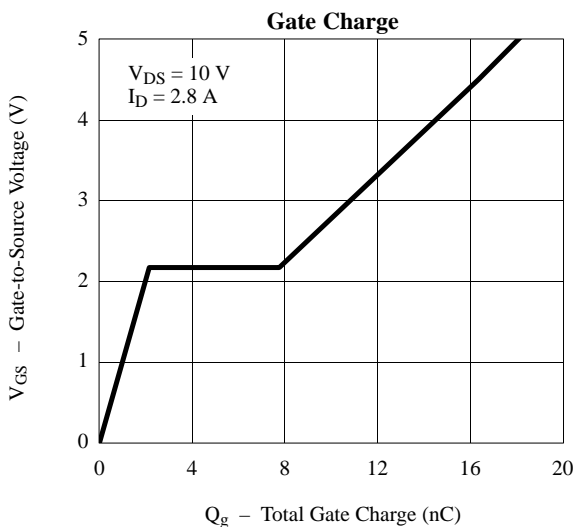
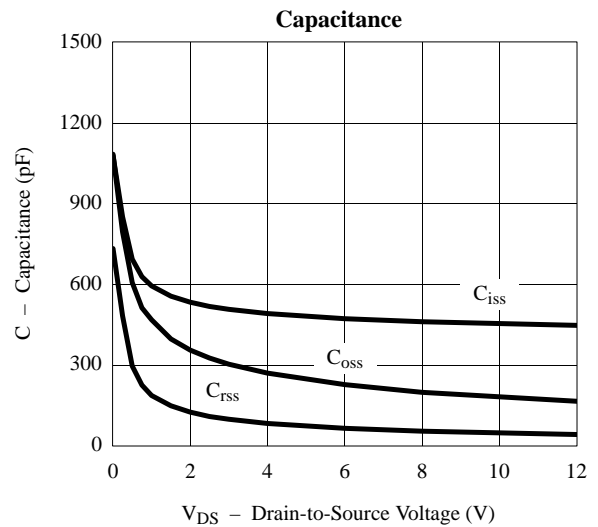
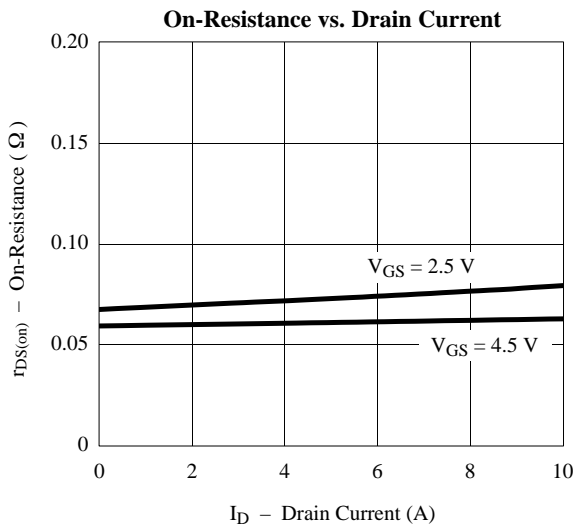
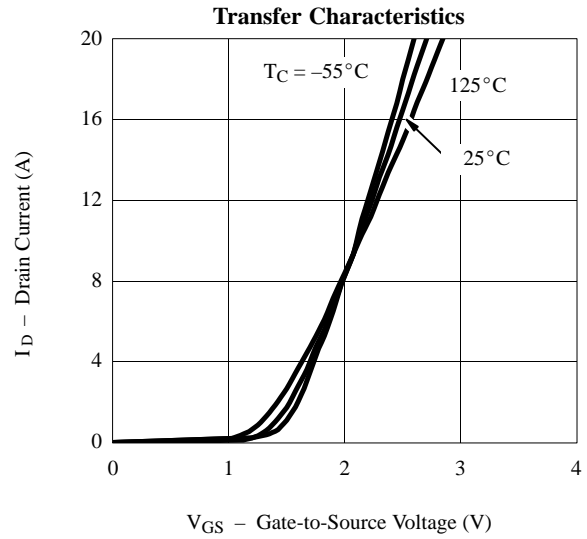
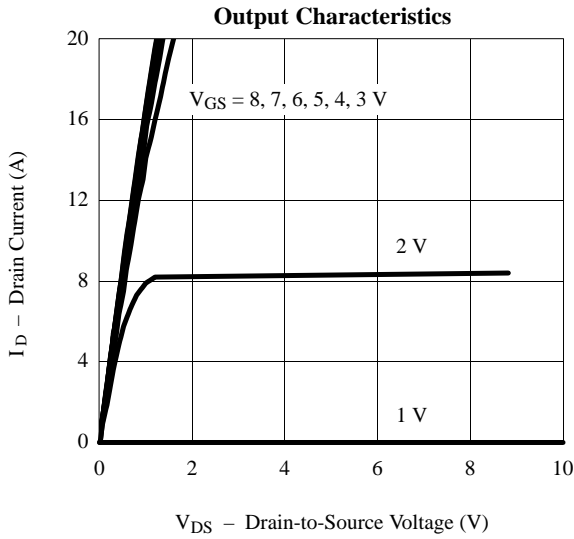
| Parameter | Symbol | Test Condition | Min | Typ | Max | Unit | |
|---|---------------------|---|------|------|------|------|----|
| Static | | | | | | | |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} = V _{GS} , I _D = 250 μA | N-Ch | 0.6 | | V | |
| | | V _{DS} = V _{GS} , I _D = -250 μA | P-Ch | -0.6 | | | |
| Gate-Body Leakage | I _{GSS} | V _{DS} = 0 V, V _{GS} = ±8 V | | | ±100 | nA | |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} = 20 V, V _{GS} = 0 V | N-Ch | | 1 | μA | |
| | | V _{DS} = -12 V, V _{GS} = 0 V | P-Ch | | -1 | | |
| | | V _{DS} = 20 V, V _{GS} = 0 V, T _J = 70°C | N-Ch | | 5 | | |
| | | V _{DS} = -12 V, V _{GS} = 0 V, T _J = 70°C | P-Ch | | -5 | | |
| On-State Drain Current ^a | I _{D(on)} | V _{DS} = 5 V, V _{GS} = 4.5 V | N-Ch | 10 | | A | |
| | | V _{DS} = -5 V, V _{GS} = -4.5 V | P-Ch | -10 | | | |
| | | V _{DS} = 5 V, V _{GS} = 2.5 V | N-Ch | 4 | | | |
| | | V _{DS} = -5 V, V _{GS} = -2.5 V | P-Ch | -4 | | | |
| Drain-Source On-State Resistance ^a | r _{DS(on)} | V _{GS} = 4.5 V, I _D = 2.8 A | N-Ch | | 0.08 | Ω | |
| | | V _{GS} = -4.5 V, I _D = 2.5 A | P-Ch | | 0.1 | | |
| | | V _{GS} = 2.5 V, I _D = 2.1 A | N-Ch | | 0.11 | | |
| | | V _{GS} = -2.5 V, I _D = 1.9 A | P-Ch | | 0.18 | | |
| Forward Transconductance ^a | g _{fs} | V _{DS} = 15 V, I _D = 2.8 A | N-Ch | | | S | |
| | | V _{DS} = -9 V, I _D = -2.5 A | P-Ch | | | | |
| Diode Forward Voltage ^a | V _{SD} | I _S = 1.0 A, V _{GS} = 0 V | N-Ch | | 1.2 | V | |
| | | I _S = -1.0 A, V _{GS} = 0 V | P-Ch | | -1.2 | | |
| Dynamic^b | | | | | | | |
| Total Gate Charge | Q _g | N-Channel V _{DS} = 10 V, V _{GS} = 4.5 V, I _D = 2.8 A P-Channel V _{DS} = -6 V, V _{GS} = -4.5 V, I _D = -2.5 A | N-Ch | | 16 | 40 | nC |
| Gate-Source Charge | Q _{gs} | | N-Ch | | 3 | | |
| Gate-Drain Charge | Q _{gd} | | N-Ch | | 6 | | |
| Turn-On Delay Time | t _{d(on)} | N-Channel V _{DD} = 10 V, R _L = 10 Ω I _D ≅ 1 A, V _{GEN} = 4.5 V, R _G = 6 Ω P-Channel V _{DD} = -6 V, R _L = 6 Ω I _D ≅ -1 A, V _{GEN} = -4.5 V, R _G = 6 Ω | N-Ch | | 37 | 60 | ns |
| Rise Time | t _r | | N-Ch | | 66 | 100 | |
| | | | P-Ch | | 35 | 70 | |
| Turn-Off Delay Time | t _{d(off)} | | N-Ch | | 56 | 100 | |
| | | | P-Ch | | 43 | 80 | |
| Fall Time | t _f | | N-Ch | | 57 | 100 | |
| | | | P-Ch | | 22 | 40 | |
| Source-Drain Reverse Recovery Time | t _{rr} | N-Channel—I _F = 1.0 A, di/dt = 100 A/μs | N-Ch | | 26 | 70 | |
| | | P-Channel—I _F = -1.0 A, di/dt = 100 A/μs | P-Ch | | 35 | 70 | |

Notes

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

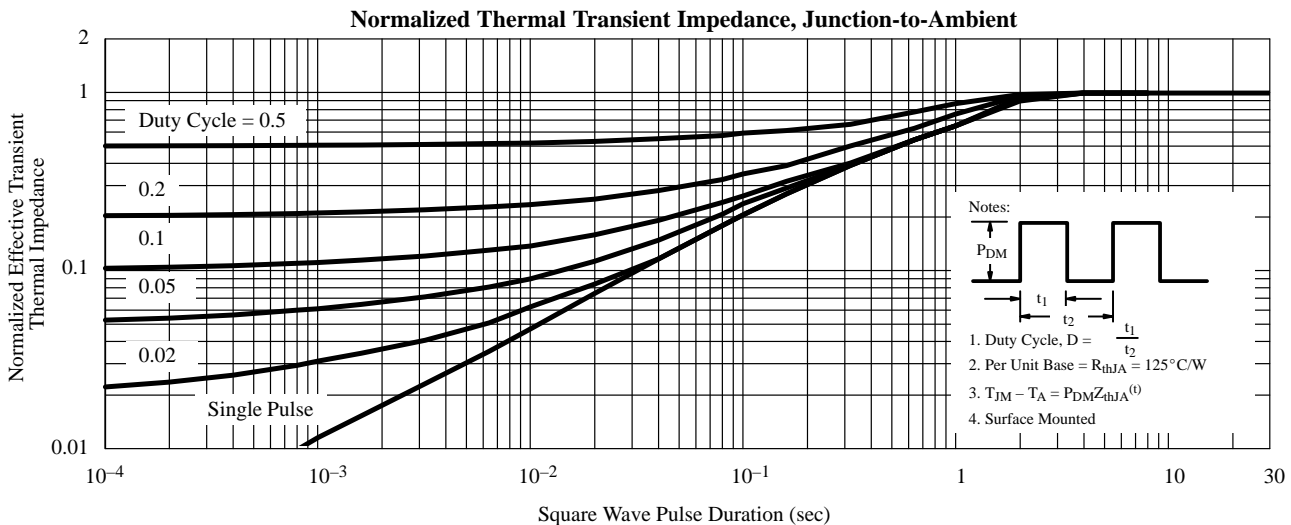
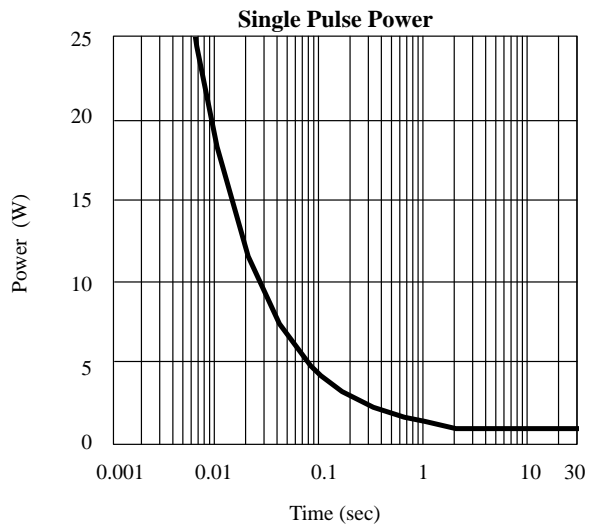
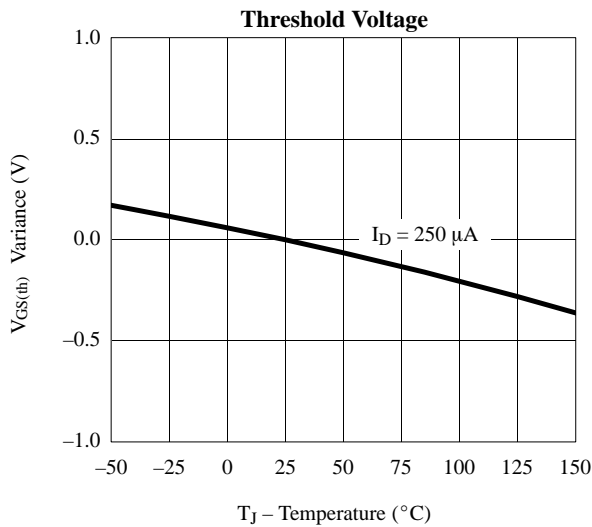
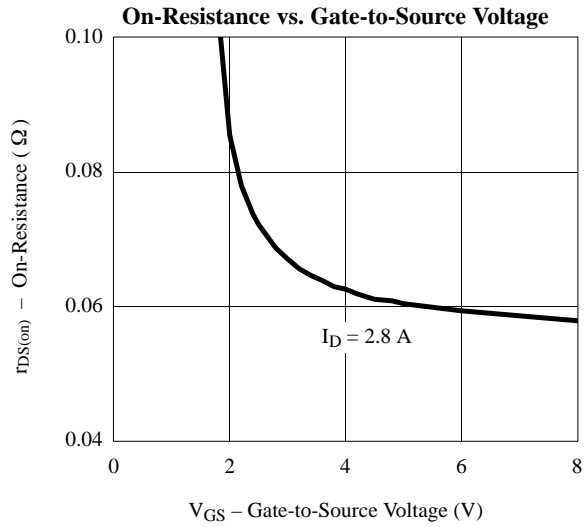
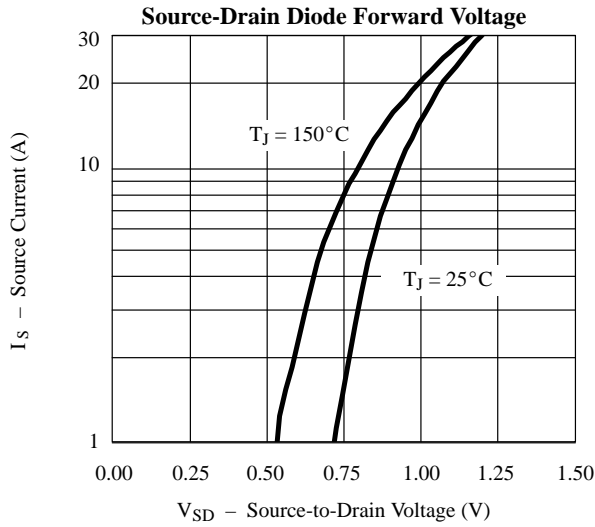
Typical Characteristics (25°C Unless Noted)

N-Channel



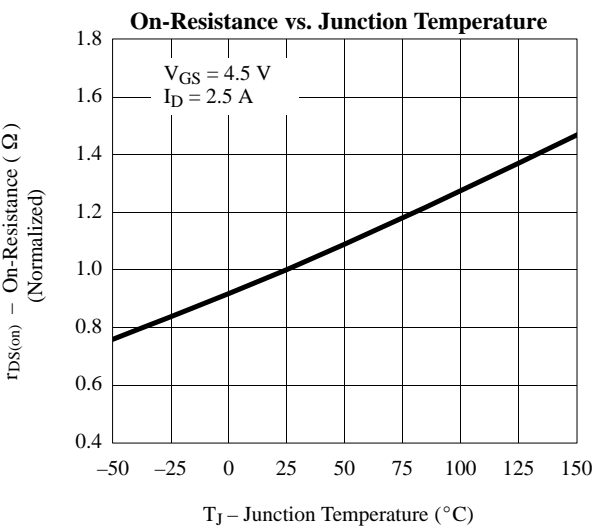
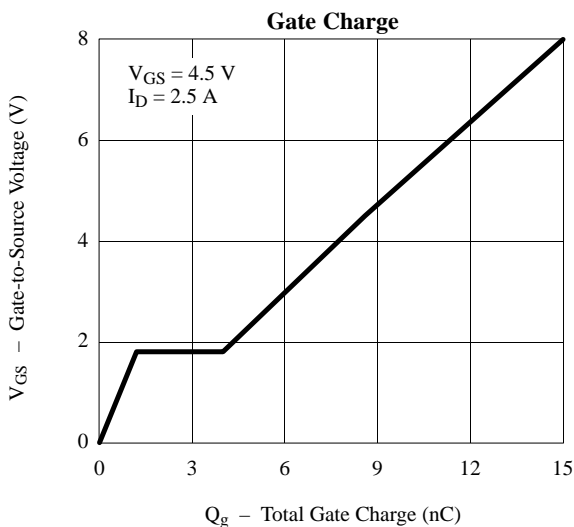
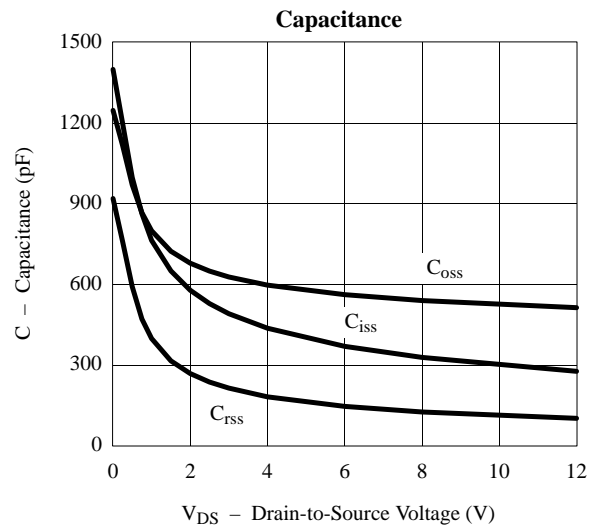
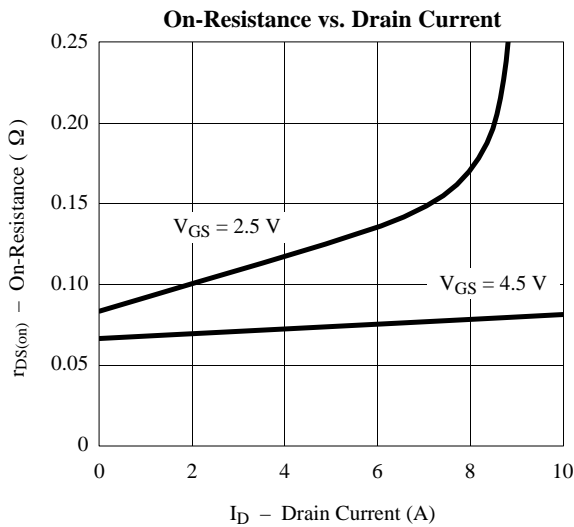
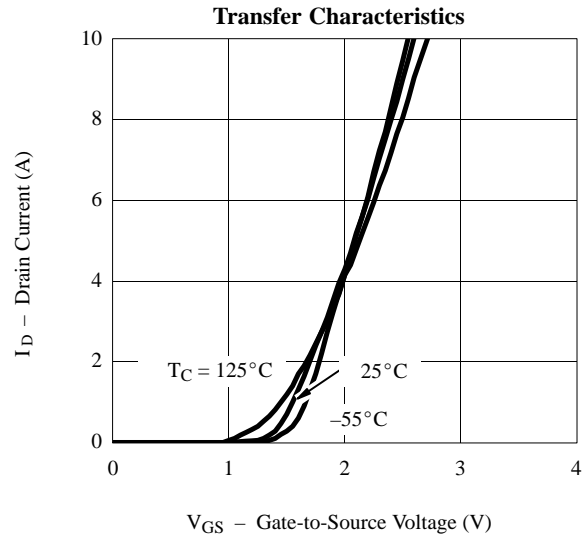
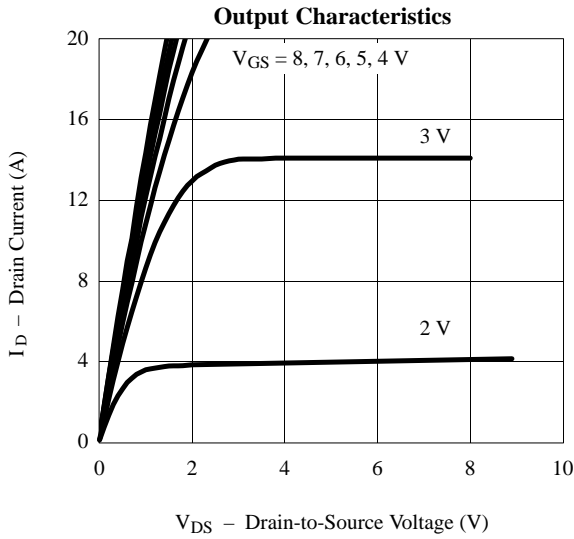
Typical Characteristics (25°C Unless Noted)

N-Channel



Typical Characteristics (25°C Unless Noted)

P-Channel



Typical Characteristics (25°C Unless Noted)

P-Channel

