

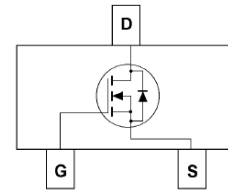
N-Channel Enhancement Mode MOSFET

Feature

- 30V/2.0A, $R_{DS(ON)} = 35m\Omega(MAX) @V_{GS} = 10V$.
 $R_{DS(ON)} = 40m\Omega(MAX) @V_{GS} = 4.5V$.
 $R_{DS(ON)} = 55m\Omega(MAX) @V_{GS} = 2.5V$.
- Super High dense cell design for extremely low $R_{DS(ON)}$.
- Reliable and Rugged.
- SC-59 for Surface Mount Package.



SC-59



Applications

- Power Management
- Portable Equipment and Battery Powered Systems.

Absolute Maximum Ratings TA=25°C Unless Otherwise noted

| Parameter | Symbol | Limit | Units |
|--------------------------|----------|----------|-------|
| Drain-Source Voltage | V_{DS} | 30 | V |
| Gate-Source Voltage | V_{GS} | ± 12 | V |
| Drain Current-Continuous | I_D | 2.0 | A |

Electrical Characteristics TA=25°C Unless Otherwise noted

| Parameter | Symbol | Test Conditions | Min | Typ. | Max | Units |
|---|--------------|-------------------------------|-----|------|------|-----------|
| Off Characteristics | | | | | | |
| Drain to Source Breakdown Voltage | BVDSS | $V_{GS}=0V, I_D=250\mu A$ | 30 | - | - | V |
| Zero-Gate Voltage Drain Current | I_{DSS} | $V_{DS}=30V, V_{GS}=0V$ | - | - | 1 | μA |
| Gate Body Leakage Current, Forward | I_{GSSF} | $V_{GS}=12V, V_{DS}=0V$ | - | - | 100 | nA |
| Gate Body Leakage Current, Reverse | I_{GSSR} | $V_{GS}=-12V, V_{DS}=0V$ | - | - | -100 | nA |
| On Characteristics | | | | | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{GS}=V_{DS}, I_D=250\mu A$ | 0.6 | - | 1.5 | V |
| Static Drain-source On-Resistance | $R_{DS(ON)}$ | $V_{GS}=10V, I_D=5.8A$ | - | 30 | 35 | $m\Omega$ |
| | | $V_{GS}=4.5V, I_D=5A$ | - | 33 | 40 | $m\Omega$ |
| | | $V_{GS}=2.5V, I_D=4A$ | - | 45 | 55 | $m\Omega$ |
| Drain-Source Diode Characteristics and Maximum Ratings | | | | | | |
| Drain-Source Diode Forward Voltage | VSD | $V_{GS}=0V, I_S=1.25A$ | | | 1.2 | V |

| Dynamic | | | | | | |
|----------------|---------------------|---|--|-----|----|----|
| Q_g | Total Gate Charge | $V_{DS}=15V, V_{GS}=10V, I_D=2A$ | | 8.5 | 12 | nC |
| Q_{gs} | Gate-Source Charge | | | 1.1 | | |
| Q_{gd} | Gate-Drain Charge | | | 1.8 | | |
| t_{on} | Turn-on Time | $V_{DD}=15V, I_D=2A, V_{GS}=10V, R_G=6\Omega$ | | | 40 | ns |
| $t_{d(ON)}$ | Turn-on Delay time | | | 11 | | |
| t_r | Turn-on Rise Time | | | 17 | | |
| $T_{d(off)}$ | Turn-off Delay Time | | | 37 | | |
| t_f | Turn-off Fall Time | | | 20 | | |
| t_{off} | Turn-off Time | | | | 60 | |

Typical Characteristics

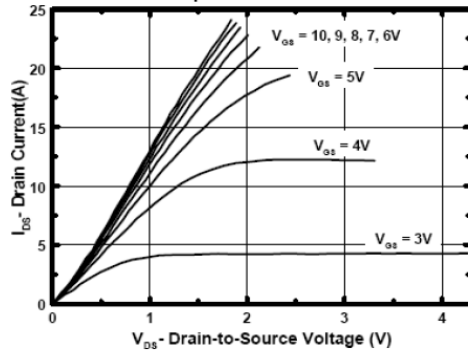


Figure 1. Output Characteristics

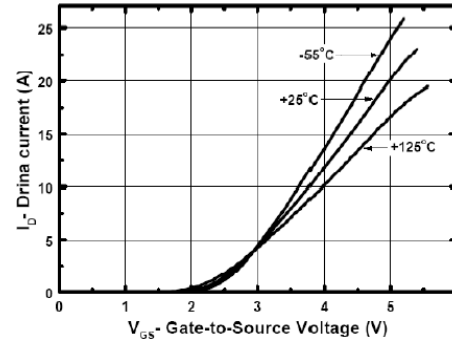


Figure 2. Transfer Characteristics

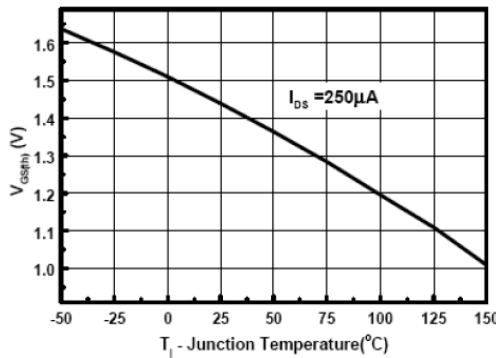


Figure 3. Gate Threshold Variation with Temperature

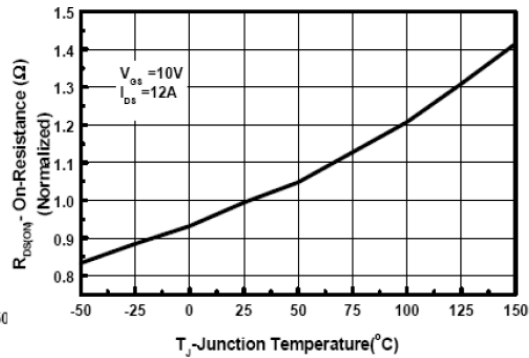


Figure 4. On-Resistance Variation with Temperature

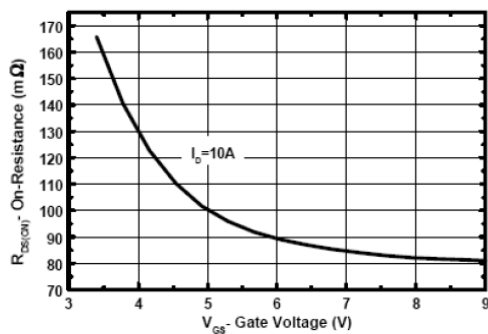


Figure 5. On-Resistance vs. Gate-to-Source Voltage

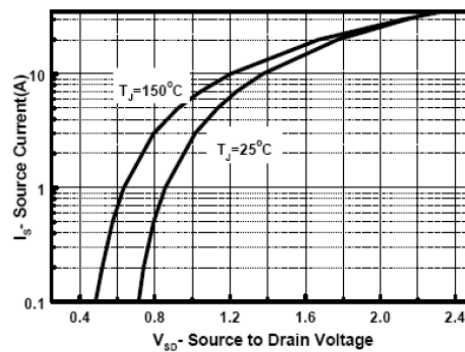


Figure 6. Source-Drain Diode Forward Voltage

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