



N-Channel Enhancement Mode MOSFET

Electrical Characteristics

V_{DS} (V)
 I_{DM} (A)
 R_{DS(ON)} (mΩ)
 R_{GS(ON)} (mΩ)

Features

• MOSFET technology
 • Low heat dissipation
 • Designed for low R_{DS(ON)}
 • V_{CE0} = 1
 • V₀ Flammability Rating

Applications

Absolute Maximum Ratings (T_A=25°C unless otherwise specified)

| Parameter | Limit | Unit |
|-----------------------------------|--------------------|------|
| Drain-source Voltage | 100 | V |
| Gate-source Voltage | ± 20 | V |
| Drain Current | T _A =25 | 3 |
| | T _A =70 | 2.4 |
| Pulsed Drain Current ^A | I _{DM} | 12 |
| Single Pulse Avalanche Energy | E _{AS} | |



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Electrical Characteristics ($T_J=25$ unless otherwise noted)

| Parameter | Symbol | Conditions | Min | Typ | Max | Units |
|---------------------------------------|--------------|---------------------------------|-----|------|-----------|-------|
| Static Parameter | | | | | | |
| Drain-Source Breakdown Voltage | BV_{DSS} | $V_{GS}=0V, I_D=250$ | 100 | | | V |
| Zero Gate Voltage Drain Current | I_{DSS} | $V_{DS}=100V, V_{GS}=0V$ | | | 1 | |
| Gate-Body Leakage Current | I_{GSS} | $V_{GS}=\pm 20V, V_{DS}=0V$ | | | ± 100 | nA |
| Gate Threshold Voltage | $V_{GS(th)}$ | $V_{DS}=V_{GS}, I_D=250$ | 1.1 | 1.8 | 3.0 | V |
| Static Drain-Source On-Resistance | $R_{DS(ON)}$ | $V_{GS}=10V, I_D=3A$ | | 95 | 120 | m |
| | | $V_{GS}=4.5V, I_D=2.4A$ | | 100 | 140 | |
| Diode Forward Voltage | V_{SD} | $I_S=3A, V_{GS}=0V$ | | 0.8 | 1.2 | V |
| Maximum Body-Diode Continuous Current | I_S | | | | 3 | A |
| Dynamic Parameters | | | | | | |
| Input Capacitance | C_{iss} | $V_{DS}=50V, V_{GS}=0V, f=1MHz$ | | 1070 | | pF |
| Output Capacitance | C_{oss} | | | 33 | | |

Reverse Transfer Capacitance



Typical Performance Characteristics

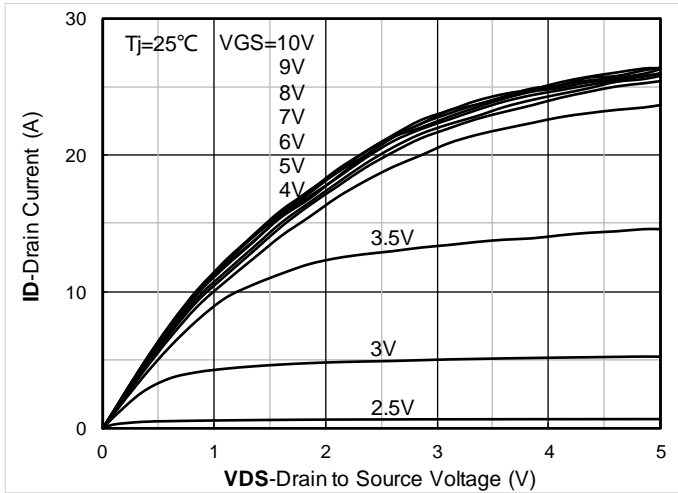


Figure 1. Output Characteristics

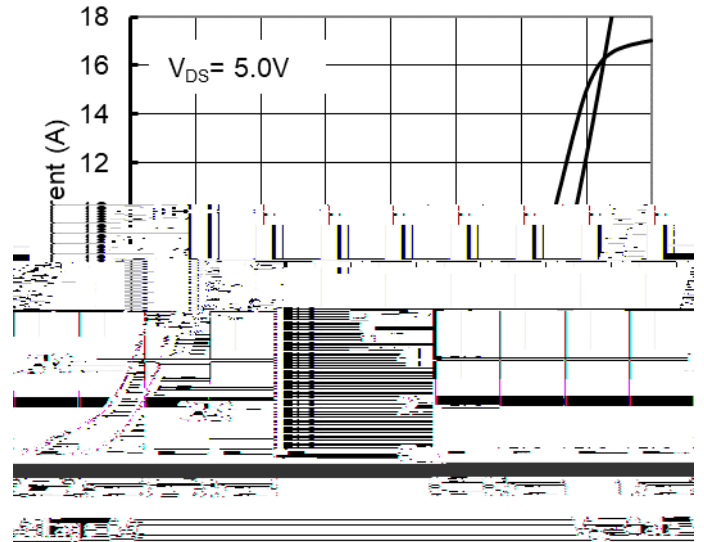


Figure 2. Transfer Characteristics

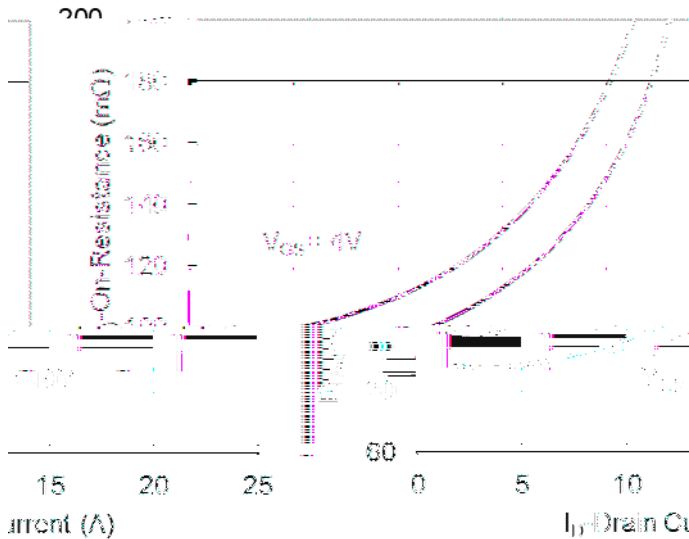


Figure 3. On-Resistance vs. Drain Current and Gate Voltage

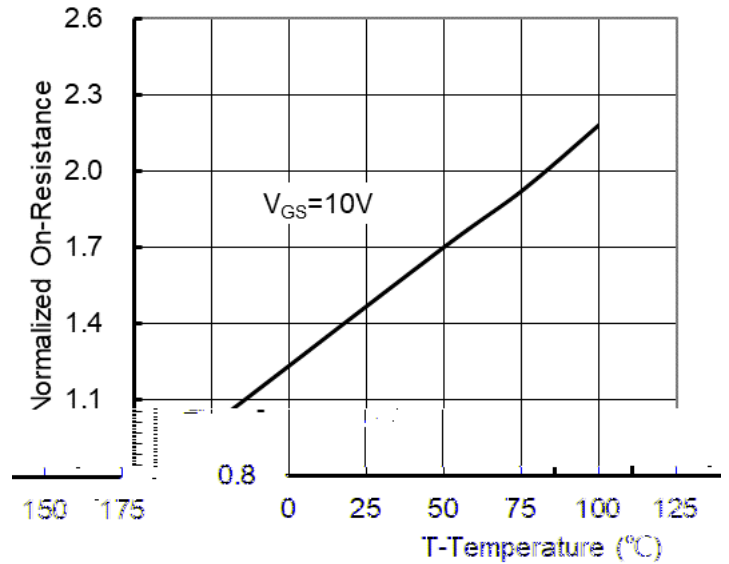


Figure 4. On-Resistance vs. Junction Temperature

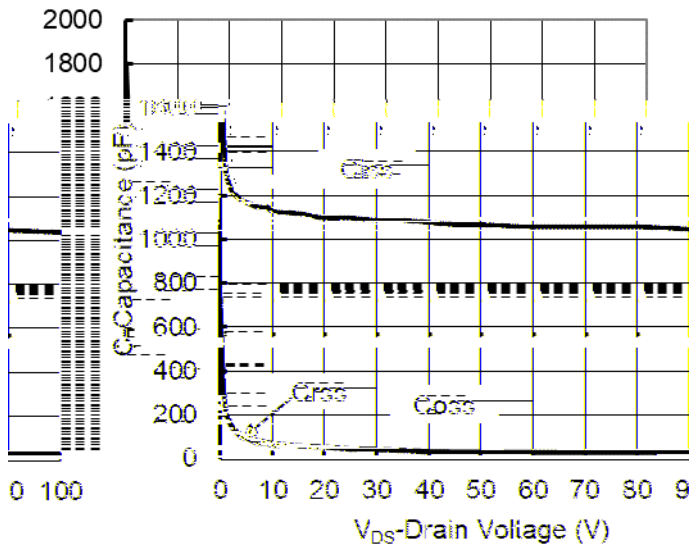


Figure 5. Capacitance Characteristics

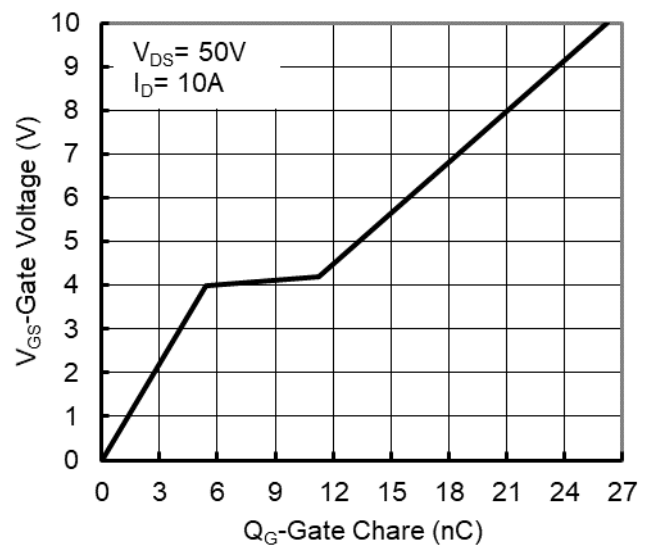


Figure 6. Gate Charge



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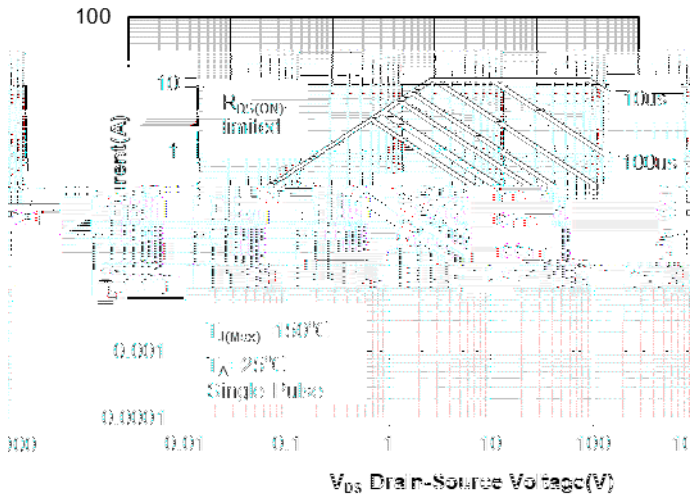


Figure 7. Safe Operation Area

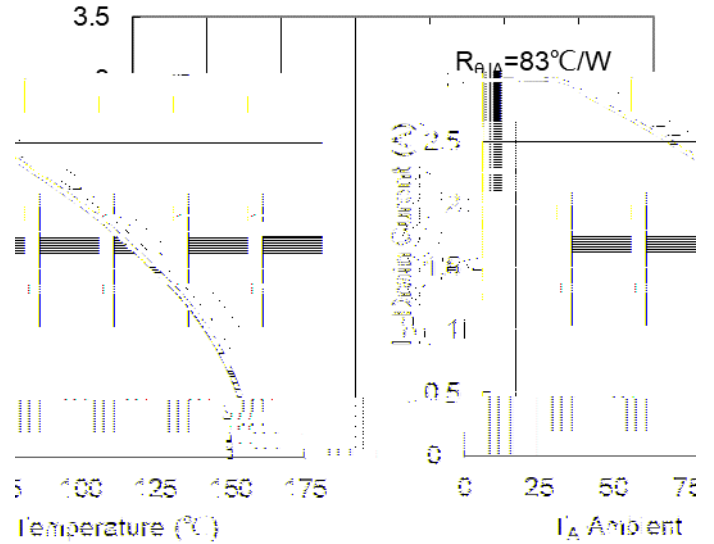


Figure 8. Maximum Continuous Drain Current vs Ambient Temperature

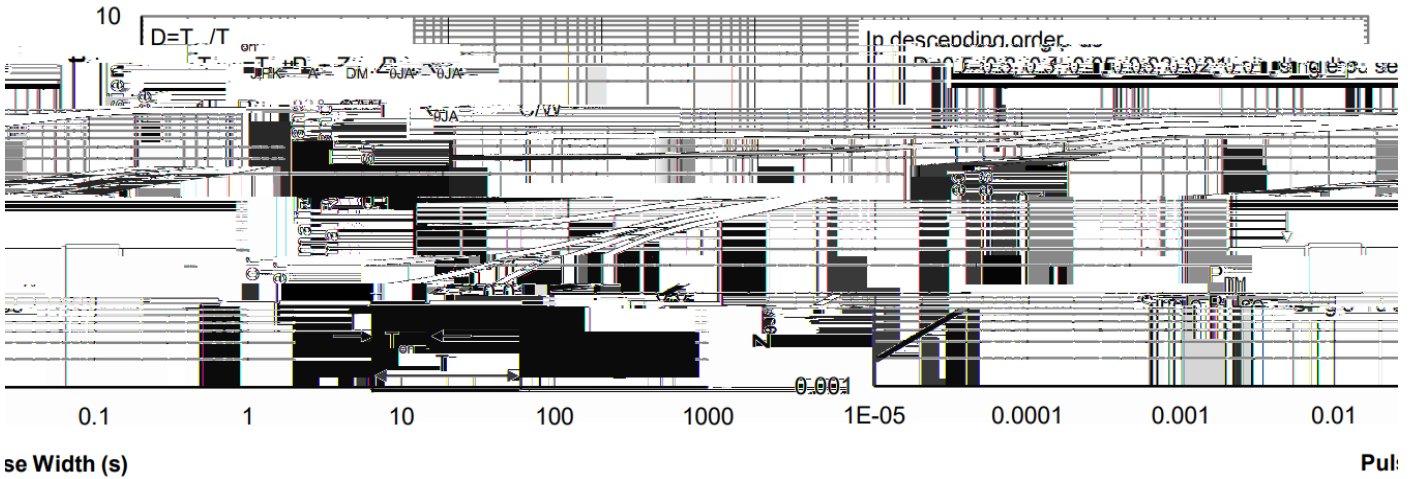


Figure 9. Normalized Maximum Transient Thermal Impedance

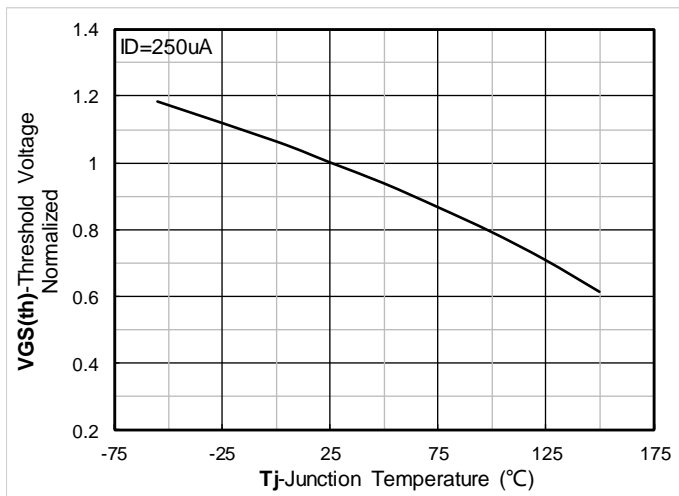
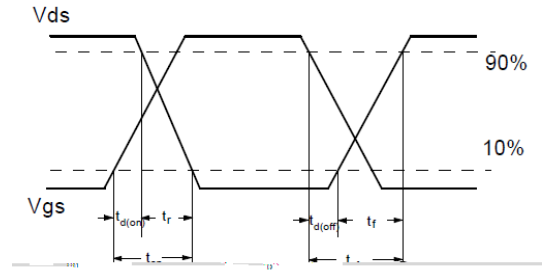
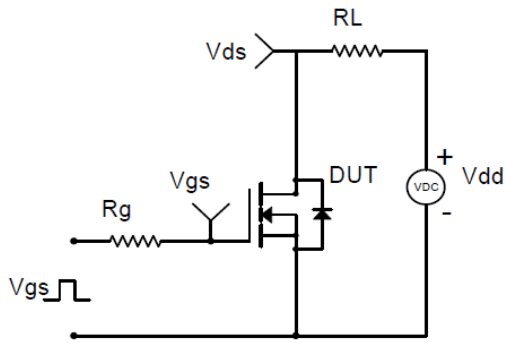
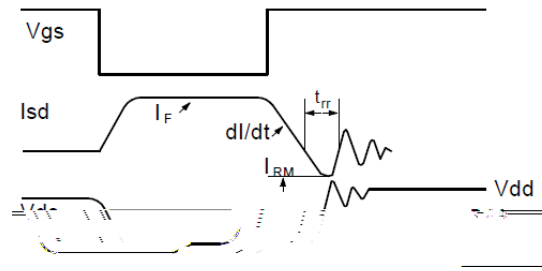
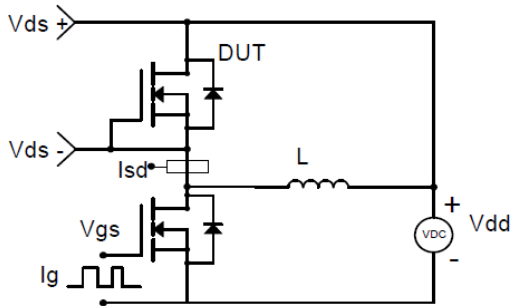


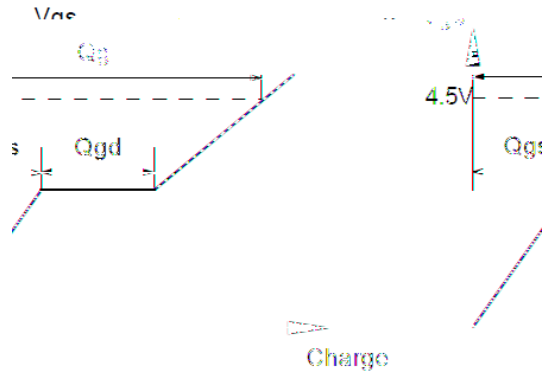
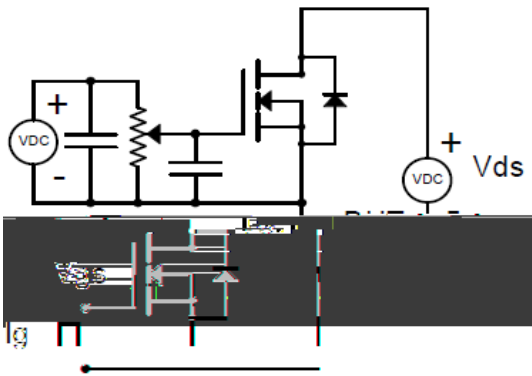
Figure 10. Normalized Threshold voltage



Resistive Switching Test Circuit & Waveforms



Diode Recovery Test Circuit & Waveforms

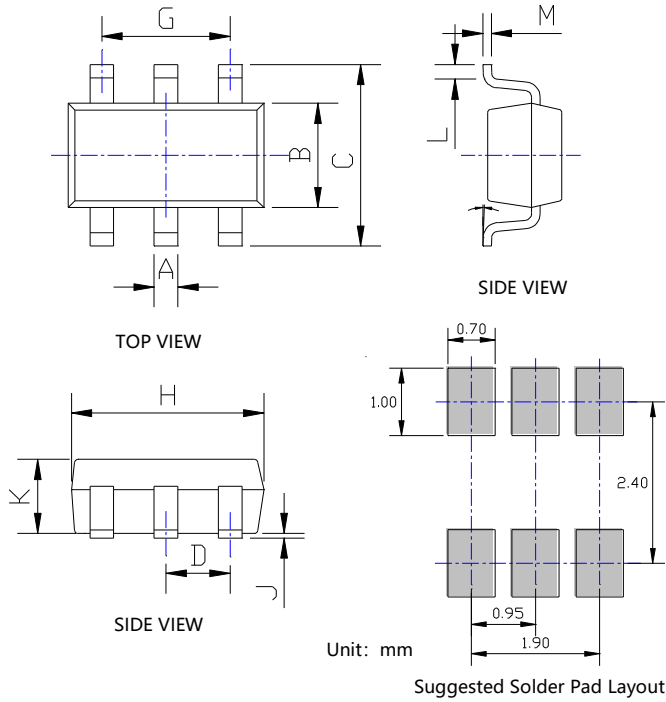


Gate Charge Test Circuit & Waveform



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SOT-23-6L Package information



| SYMBOL | DIMENSIONS | | | |
|--------|------------|-------|------------|-------|
| | INCHES | | Millimeter | |
| | MIN. | MAX. | MIN. | MAX. |
| A | 0.012 | 0.020 | 0.300 | 0.500 |
| B | 0.059 | 0.067 | 1.500 | 1.700 |
| C | 0.104 | 0.116 | 2.650 | 2.950 |
| D | 0.037BSC | | 0.950BSC | |
| G | 0.075BSC | | 1.900BSC | |
| H | 0.111 | 0.119 | 2.820 | 3.020 |
| J | 0.000 | 0.004 | 0.000 | 0.100 |
| K | 0.041 | 0.045 | 1.050 | 1.150 |
| L | 0.012 | 0.024 | 0.300 | 0.600 |
| M | 0.004 | 0.008 | 0.100 | 0.200 |
| | 0° | 8° | 0° | 8° |

Note:

1. Controlling dimension: in millimeters.
2. General tolerance: $\pm 0.05\text{mm}$.
3. The pad layout is for reference purposes only.



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