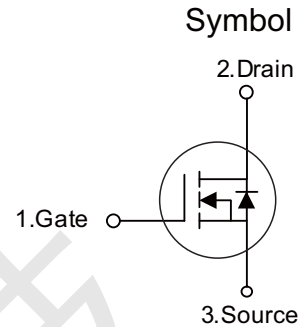




MOT5N50BD N-CHANNEL MOSFET

■ MOT5N50BD PRODUCT CHARACTERISTICS

| | |
|-----------------------------|------|
| VDSS | 500V |
| $R_{DS(on)typ}(V_{GS}=10V)$ | 2.4Ω |
| Qg@type | 18nC |
| ID | 5A |

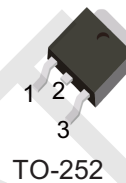


■ MOT5N50BD APPLICATIONS

- High frequency switching mode power supply
- Electronic ballast
- LED power supply

■ MOT5N50BD FEATURES

- * Fast Switching Capability
- * Avalanche Energy Specified
- * Improved dv/dt Capability, High Ruggedness



■ MOT5N50BD ORDER INFORMATION

| Order codes | | Package | Packing |
|--------------|-----------|---------|-------------------|
| Halogen-Free | Halogen | | |
| N/A | MOT5N50BD | TO-252 | 2500 pieces /Reel |

■ MOT5N50BD ABSOLUTE MAXIMUM RATINGS (T_C = 25°C, unless otherwise specified)

| PARAMETER | SYMBOL | RATINGS | UNIT |
|----------------------|------------------|-----------------|------|
| Drain-Source Voltage | V _{DSS} | 500 | V |
| Gate-Source Voltage | V _{GSS} | ±30 | V |
| Drain Current | Continuous | I _D | 5 |
| | Pulse | I _{DM} | 15 |
| Avalanche Energy | Single Pulsed | E _{AS} | 60 |
| Power Dissipation | P _D | 32.9 | W |
| Junction Temperature | T _J | +150 | °C |
| Storage Temperature | T _{STG} | -55~+150 | °C |

■ MOT5N50BD THERMAL DATA

| PARAMETER | SYMBOL | RATINGS | UNIT |
|---------------------|-----------------|---------|------|
| Junction to Ambient | θ _{JA} | 62.5 | °C/W |
| Junction to Case | θ _{JC} | 6.25 | °C/W |



MOT5N50BD N-CHANNEL MOSFET

■ MOT5N50BD ELECTRICAL CHARACTERISTICS (T_c = 25°C, unless otherwise specified)

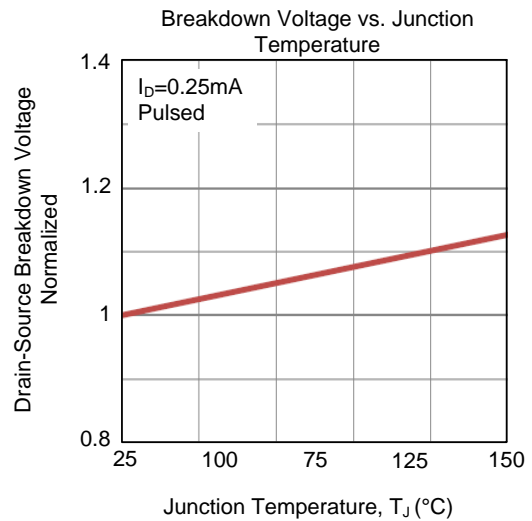
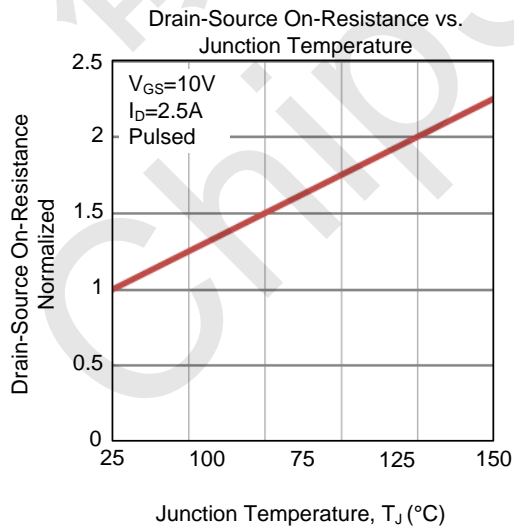
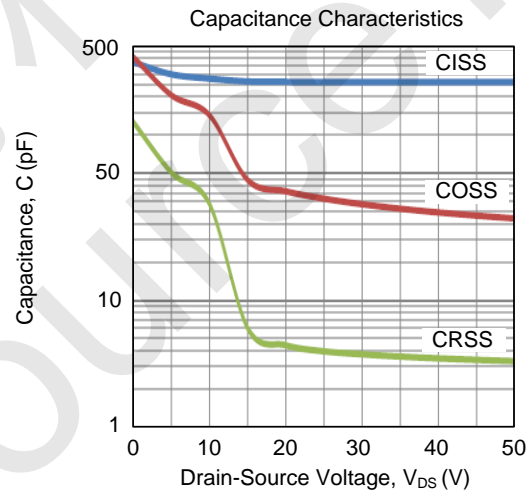
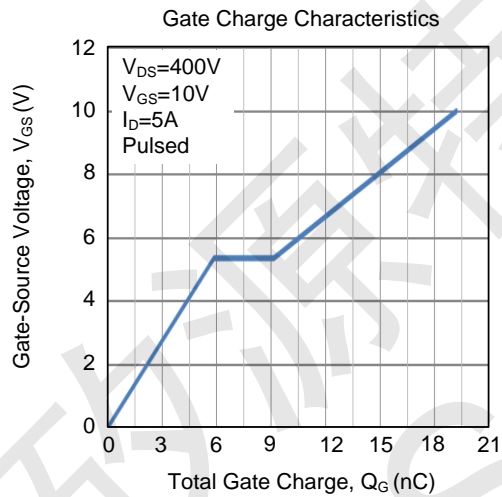
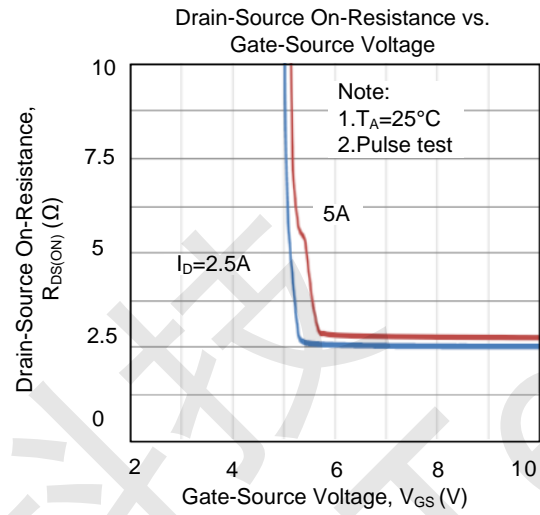
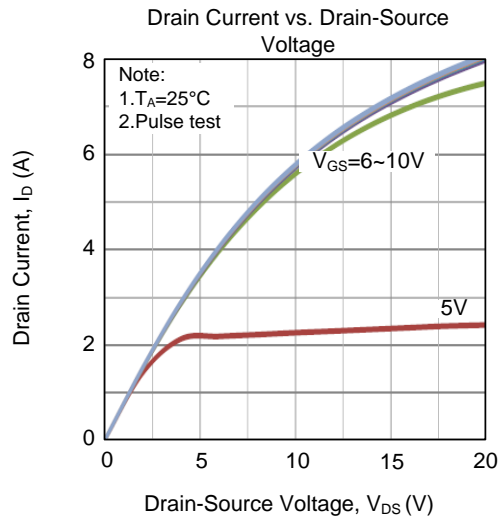
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|-------------------------------------|--|-----|------|------|------|
| OFF CHARACTERISTICS | | | | | | |
| Drain-Source Breakdown Voltage | BV _{DSS} | I _D =250μA, V _{GS} =0V | 500 | - | - | V |
| Breakdown Voltage Temperature Coefficient | ΔBV _{DSS} /ΔT _J | Reference to 25°C, I _D =250μA | - | 0.5 | - | V/°C |
| Drain-Source Leakage Current | I _{DSS} | V _{DS} =500V, V _{GS} =0V | - | - | 1 | μA |
| | | V _{DS} =400V, T _C =125°C | - | - | 10 | |
| Gate- Source Leakage Current | Forward | V _{GS} =30V, V _{DS} =0V | - | - | 100 | nA |
| | Reverse | V _{GS} =-30V, V _{DS} =0V | - | - | -100 | nA |
| ON CHARACTERISTICS | | | | | | |
| Gate Threshold Voltage | V _{GS(TH)} | V _{DS} =V _{GS} , I _D =250μA | 2.0 | - | 4.0 | V |
| Static Drain-Source On-State Resistance | R _{DS(ON)} | V _{GS} =10V, I _D =2.5A | - | 2.4 | 3.0 | Ω |
| DYNAMIC CHARACTERISTICS | | | | | | |
| Input Capacitance | C _{ISS} | V _{GS} =0V, V _{DS} =25V, f=1.0MHz | - | 320 | - | pF |
| Output Capacitance | C _{OSS} | | - | 40 | - | pF |
| Reverse Transfer Capacitance | C _{RSS} | | - | 8 | - | pF |
| SWITCHING CHARACTERISTICS | | | | | | |
| Total Gate Charge | Q _G | V _{GS} =10V, V _{DS} =400V, I _D =5A | - | 18 | - | nC |
| Gate to Source Charge | Q _{GS} | | - | 2.2 | - | nC |
| Gate to Drain Charge | Q _{GD} | | - | 9.7 | - | nC |
| Turn-ON Delay Time | t _{D(ON)} | V _{DD} =250V, I _D =5A, R _G =25Ω | - | 12 | - | ns |
| Rise Time | t _R | | - | 46 | - | ns |
| Turn-OFF Delay Time | t _{D(OFF)} | | - | 50 | - | ns |
| Fall-Time | t _F | | - | 48 | - | ns |
| SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS | | | | | | |
| Maximum Continuous Drain-Source Diode Forward Current | I _S | | - | - | 5 | A |
| Maximum Pulsed Drain-Source Diode Forward Current | I _{SM} | | - | - | 15 | A |
| Drain-Source Diode Forward Voltage | V _{SD} | I _S =5A, V _{GS} =0V | - | - | 1.4 | V |
| Reverse Recovery Time | t _{rr} | I _S =5A, V _{GS} =0V, | - | 83 | - | ns |
| Reverse Recovery Charge | Q _{RR} | di _F /dt=100A/μs (Note 1) | - | 0.25 | - | uC |

Note: 1. Pulse Test: Pulse width 300μs, Duty cycle 2%



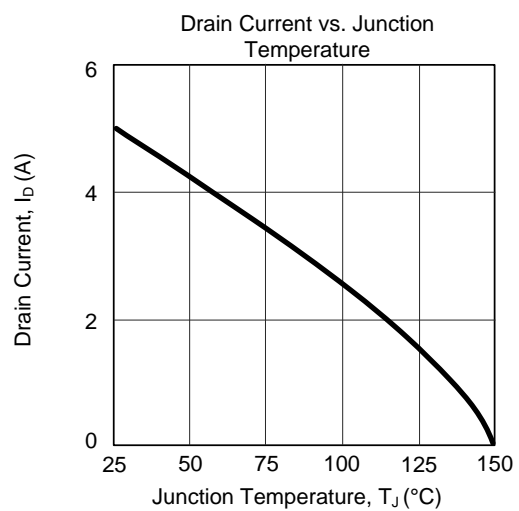
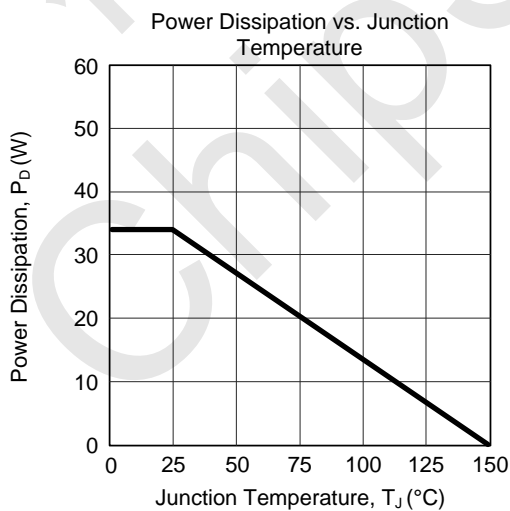
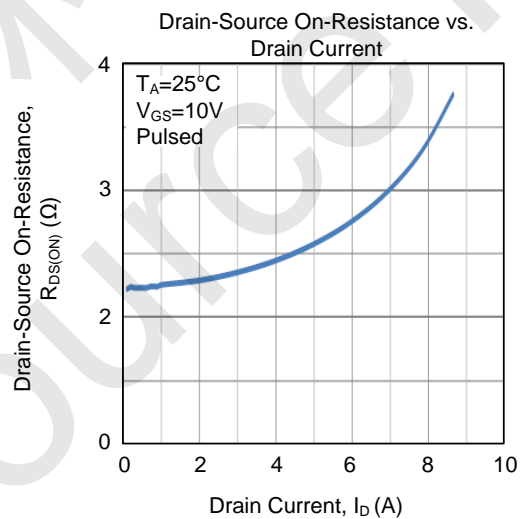
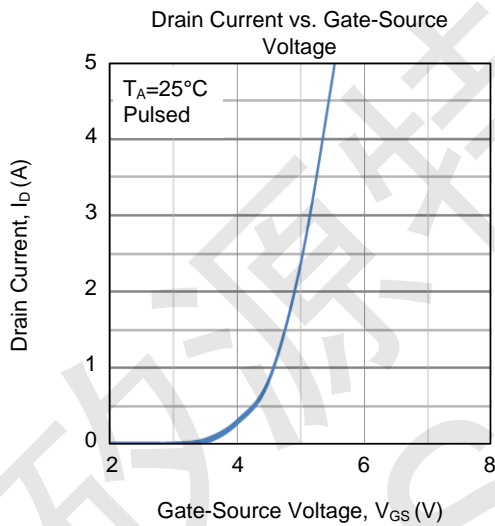
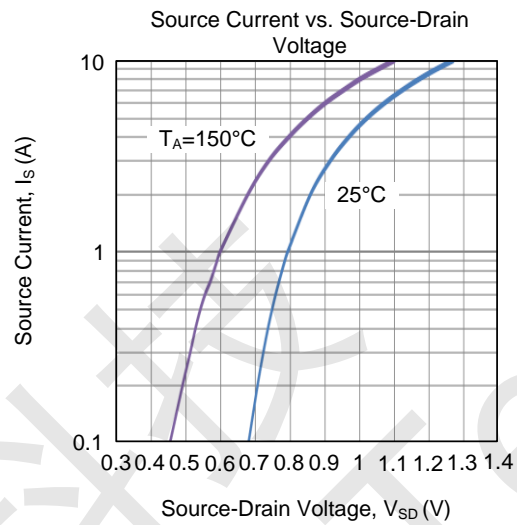
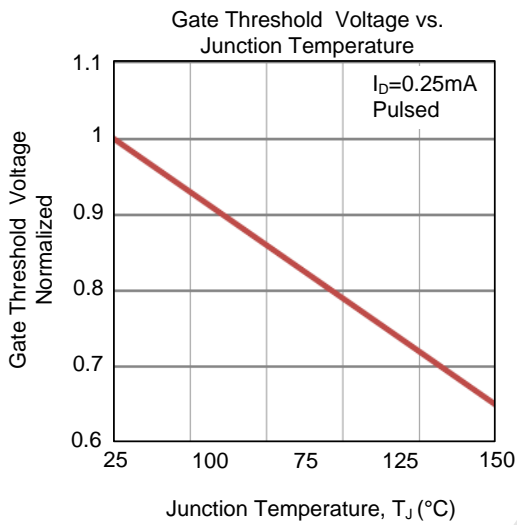
MOT5N50BD N-CHANNEL MOSFET

■ MOT5N50BD TYPICAL CHARACTERISTICS



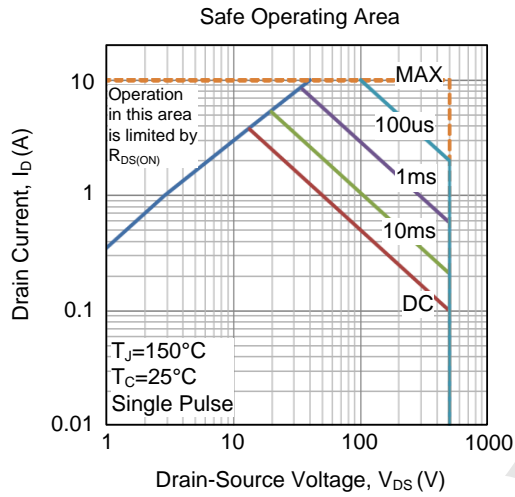


■ MOT5N50BD TYPICAL CHARACTERISTICS(Cont.)





■ MOT5N50BD TYPICAL CHARACTERISTICS(Cont.)





■ MOT5N50BD TO-252 PACKAGE OUTLINE DIMENSIONS

