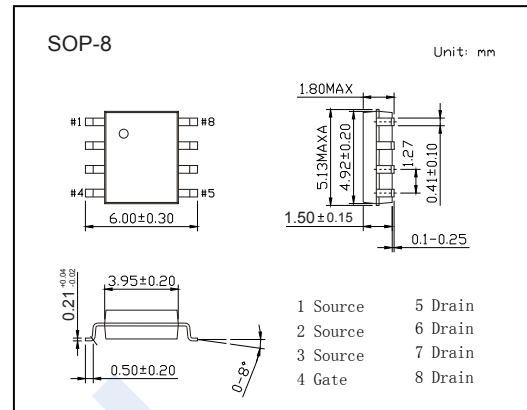
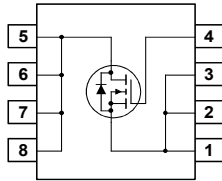


N-Channel MOSFET

FDS2672 (KDS2672)

■ Features

- $V_{DS} (V) = 200V$
- $I_D = 3.9A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 70m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 80m\Omega$ ($V_{GS} = 6V$)



■ Absolute Maximum Ratings $T_a = 25^\circ C$

| Parameter | Symbol | Rating | Unit |
|--|------------|------------|------------|
| Drain-Source Voltage | V_{DS} | 200 | V |
| Gate-Source Voltage | V_{GS} | ± 20 | |
| Continuous Drain Current -Continuous | I_D | 3.9 | A |
| Pulsed Drain Current | I_{DM} | 50 | |
| Single Pulse Avalanche Energy (Note.1) | E_{AS} | 37.5 | mJ |
| Power Dissipation (Note.2) (Note.3) | P_D | 2.5 1 | W |
| Thermal Resistance.Junction- to-Ambient (Note.2) (Note.3) | R_{thJA} | 50 125 | |
| Thermal Resistance.Junction- to-Case | R_{thJC} | 25 | |
| Junction Temperature | T_J | 150 | $^\circ C$ |
| Storage Temperature Range | T_{stg} | -55 to 150 | |

Note.1: Starting $T_J = 25^\circ C$, $L = 3mH$, $I_{AS} = 5A$, $V_{DD} = 100V$, $V_{GS} = 10V$

Note.2: $50^\circ C/W$ (10 sec) $62.5^\circ C/W$ steady stat when mounted on a $1in^2$ pad of 2 oz copper

Note.3 : $125^\circ C/W$ when mounted on a minimum pad

N-Channel MOSFET

FDS2672 (KDS2672)

■ Electrical Characteristics Ta = 25°C

| Parameter | Symbol | Test Conditions | Min | Typ | Max | Unit |
|--|---------------------|--|-----|------|------|------|
| Drain-Source Breakdown Voltage | V _{DSS} | I _D =250 μA, V _{GS} =0V | 200 | | | V |
| Zero Gate Voltage Drain Current | I _{DSS} | V _{DS} =160V, V _{GS} =0V | | | 1 | μA |
| | | V _{DS} =160V, V _{GS} =0V, T _J =55°C | | | 10 | |
| Gate-Body Leakage Current | I _{GSS} | V _{DS} =0V, V _{GS} =±20V | | | ±100 | nA |
| Gate Threshold Voltage | V _{GS(th)} | V _{DS} =V _{GS} , I _D =250 μA (Note.1) | 2 | 2.9 | 4 | V |
| Static Drain-Source On-Resistance (Note.1) | R _{DS(on)} | V _{GS} =10V, I _D =3.9A | | 59 | 70 | mΩ |
| | | V _{GS} =6V, I _D =3.5A | | 63 | 80 | |
| | | V _{GS} =10V, I _D =3.9A T _J =125°C | | 124 | 148 | |
| Forward Transconductance | g _{FS} | V _{DS} =10V, I _D =3.9A (Note.1) | | 15 | | S |
| Input Capacitance | C _{iss} | V _{GS} =0V, V _{DS} =100V, f=1MHz | | 1905 | 2535 | pF |
| Output Capacitance | C _{oss} | | | 100 | 135 | |
| Reverse Transfer Capacitance | C _{rss} | | | 30 | 45 | |
| Gate Resistance | R _g | V _{GS} =0V, V _{DS} =0V, f=1MHz | | 0.7 | | Ω |
| Total Gate Charge | Q _g | V _{DS} =100V, I _D =3.9A | | 33 | 46 | nC |
| Gate Source Charge | Q _{gs} | | | 11 | | |
| Gate Drain Charge | Q _{gd} | | | 7 | | |
| Turn-On DelayTime | t _{d(on)} | V _{GS} =10V, V _{DS} =100V, I _D =3.9A, R _G =6 Ω | | 22 | 35 | ns |
| Turn-On Rise Time | t _r | | | 10 | 20 | |
| Turn-Off DelayTime | t _{d(off)} | | | 35 | 56 | |
| Turn-Off Fall Time | t _f | | | 10 | 20 | |
| Body Diode Reverse Recovery Time | t _{rr} | I _F = 3.9A, di/dt= 100A/μs | | 67 | 101 | ns |
| Body Diode Reverse Recovery Charge | Q _{rr} | | | 179 | 269 | |
| Maximum Body-Diode Continuous Current | I _S | | | | 3.9 | A |
| Diode Forward Voltage | V _{SD} | I _S =3.9A, V _{GS} =0V | | 0.75 | 1.2 | V |

Note.1: Pulse Test: Pulse Width < 300 us, Duty Cycle < 2.0%.

N-Channel MOSFET FDS2672 (KDS2672)

■ Typical Characteristics

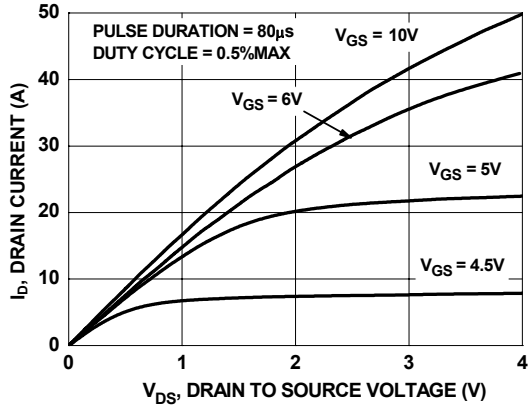


Figure 1. On Region Characteristics

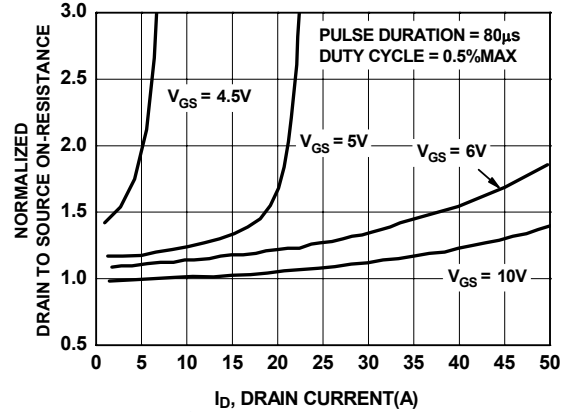


Figure 2. Normalized On-Resistance vs Drain Current and Gate Voltage

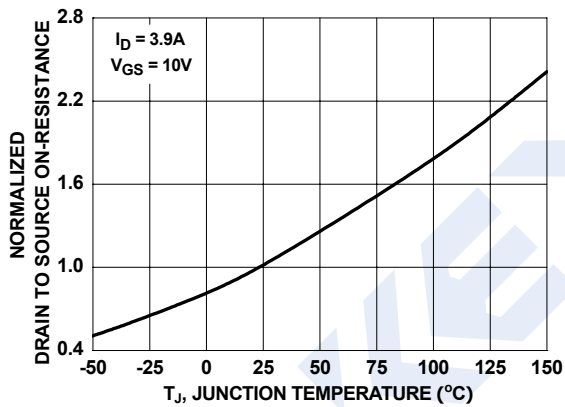


Figure 3. Normalized On Resistance vs Junction Temperature

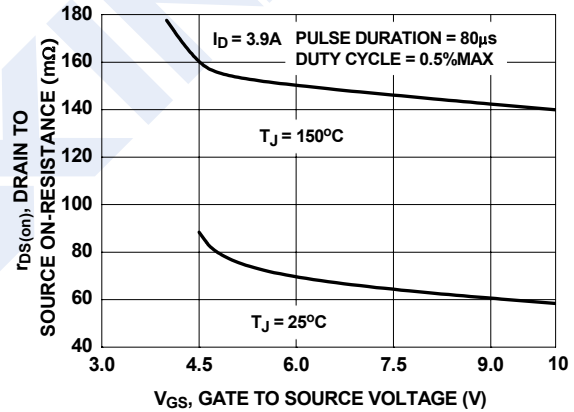


Figure 4. On-Resistance vs Gate to Source Voltage

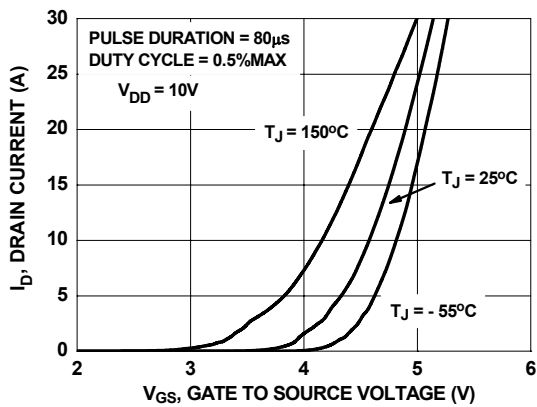


Figure 5. Transfer Characteristics

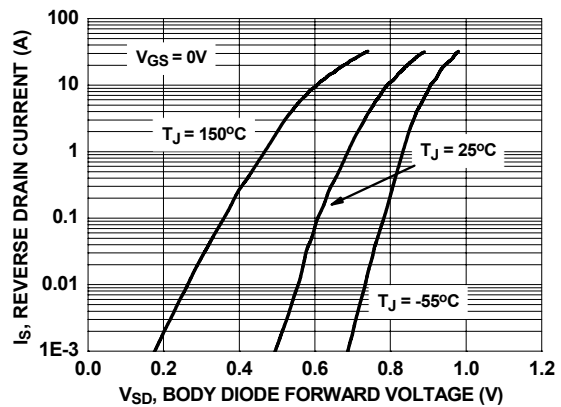


Figure 6. Source to Drain Diode Forward Voltage vs Source Current

N-Channel MOSFET FDS2672 (KDS2672)

■ Typical Characteristics

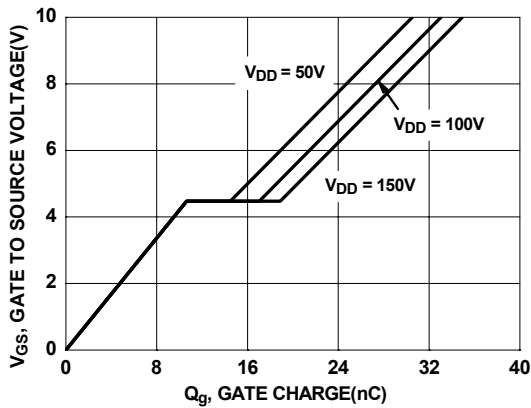


Figure 7. Gate Charge Characteristics

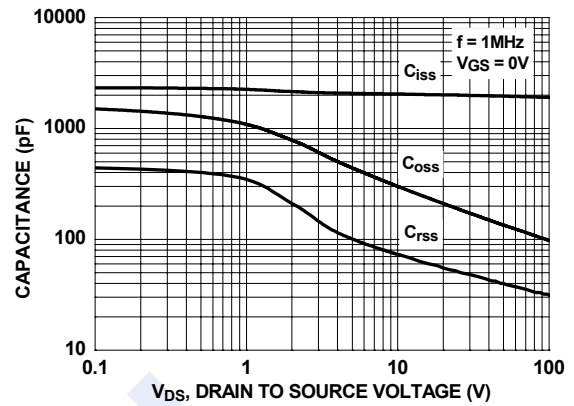


Figure 8. Capacitance vs Drain to Source Voltage

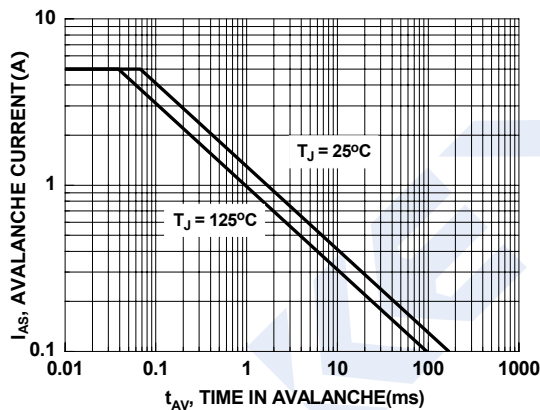


Figure 9. Unclamped Inductive Switching Capability

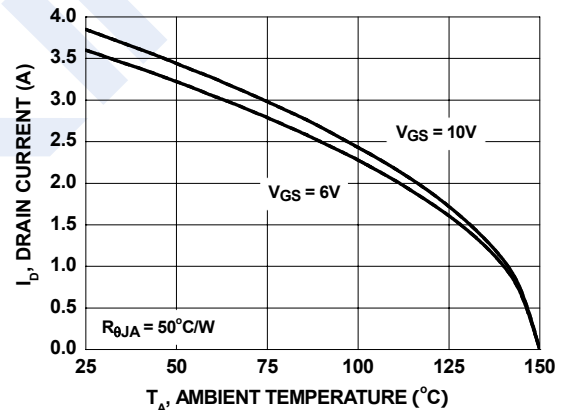


Figure 10. Ambient Continuous Drain Current vs Case Temperature

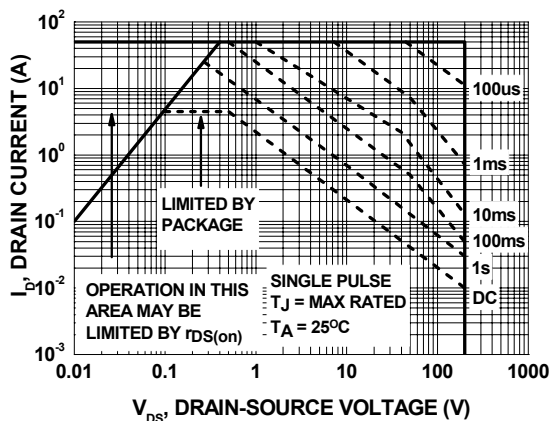


Figure 11. Forward Bias Safe Operating Area

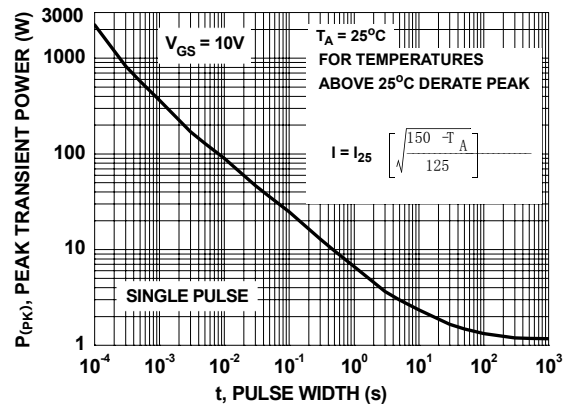


Figure 12. Single Pulse Maximum Power Dissipation

N-Channel MOSFET

FDS2672 (KDS2672)

■ Typical Characteristics

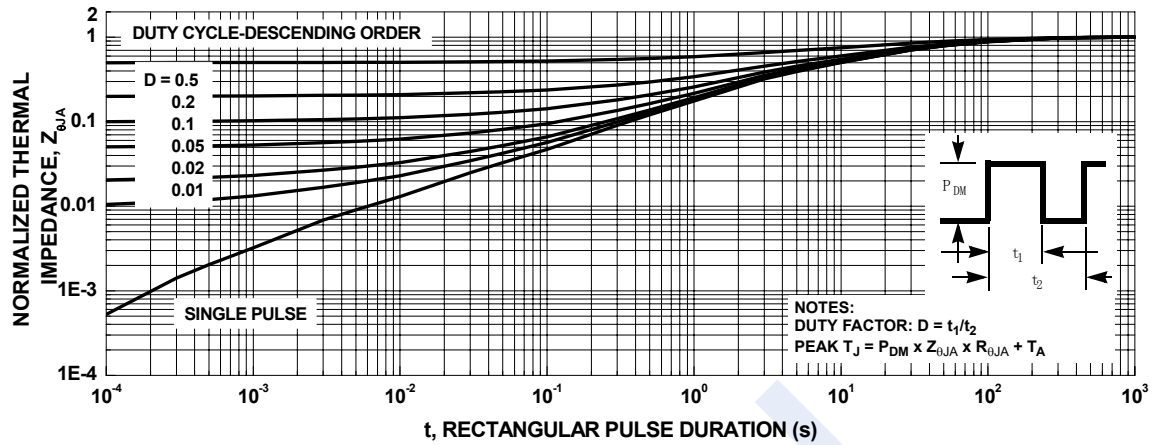


Figure 13. Transient Thermal Response Curve

Thermal characterization performed using the conditions described in Note 1b
 Transient thermal response will change depending on the circuit board design