



N-Channel Silicon MOSFET

2SK3449

DC / DC Converter Applications

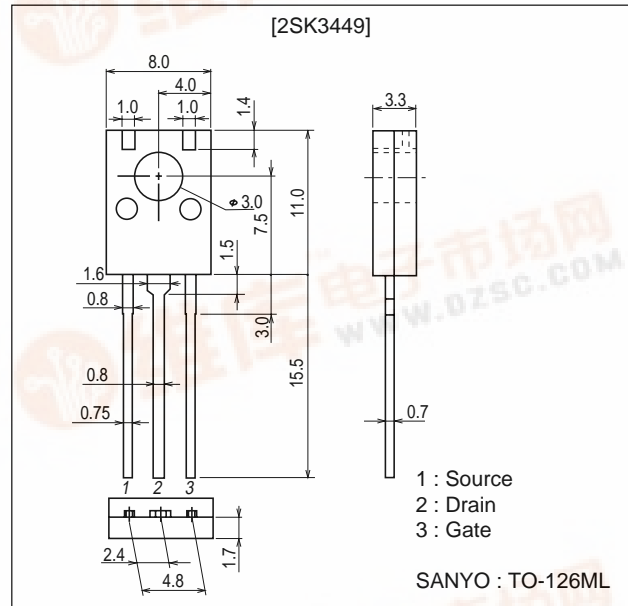
Features

- Low ON-resistance.
- Ultrahigh-speed switching.
- 4V drive.

Package Dimensions

unit : mm

2190



Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | 60 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±20 | V |
| Drain Current (DC) | I _D | | 4.8 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 19.2 | A |
| Allowable Power Dissipation | P _D | | 1 | W |
| | | T _c =25°C | 10 | W |
| Channel Temperature | T _{ch} | | 150 | °C |
| Storage Temperature | T _{stg} | | -55 to +150 | °C |

Electrical Characteristics at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|-----------------------------------|----------------------|---|---------|-----|-----|------|
| | | | min | typ | max | |
| Drain-to-Source Breakdown Voltage | V(BR)DSS | I _D =1mA, V _{GS} =0 | 60 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =60V, V _{GS} =0 | | | 10 | μA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} =±16V, V _{DS} =0 | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =10V, I _D =1mA | 1.0 | | 2.4 | V |

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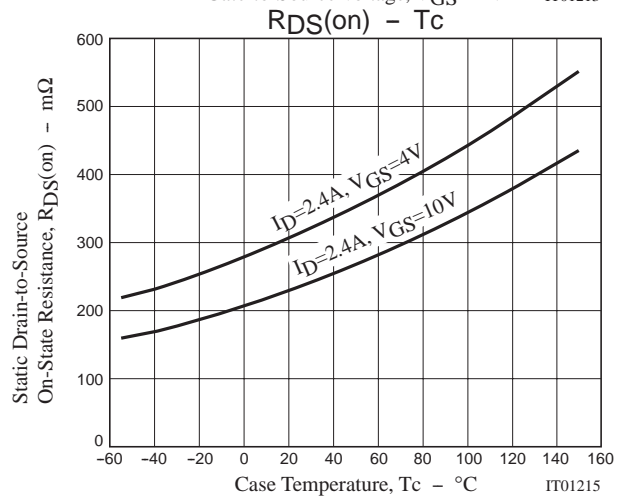
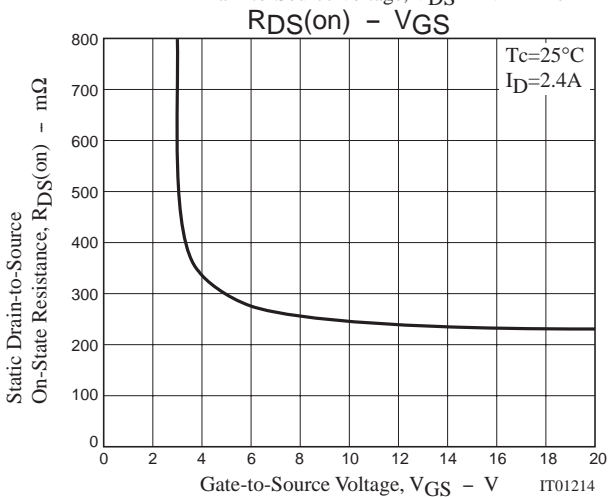
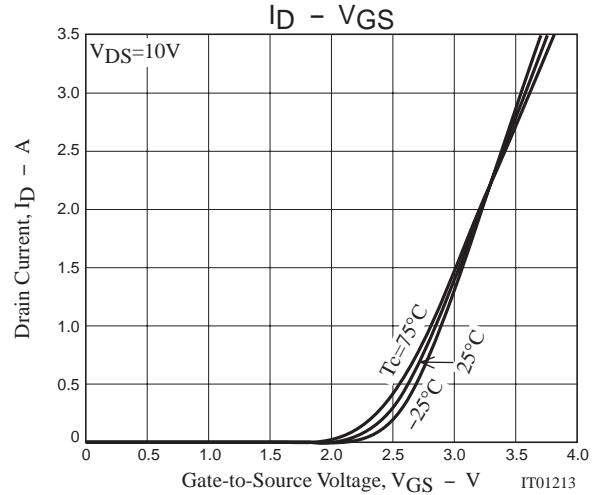
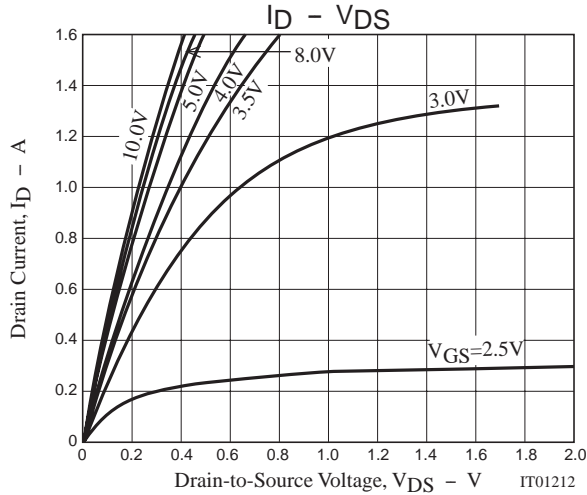
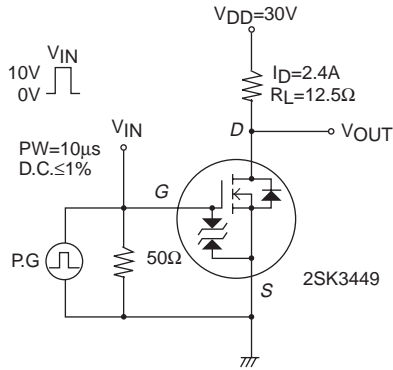


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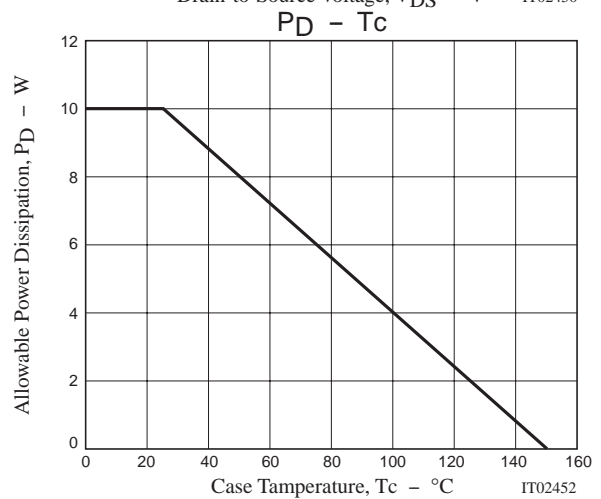
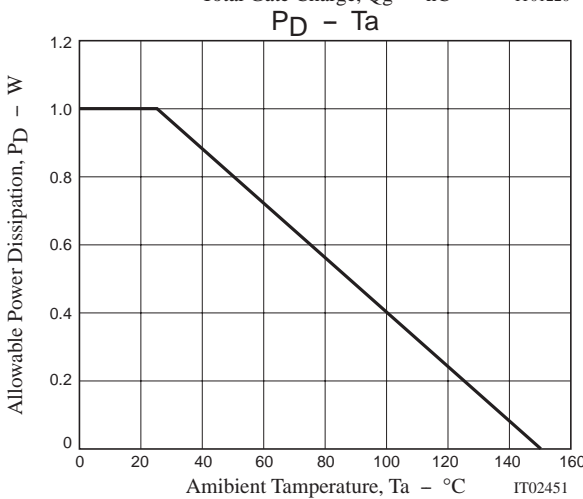
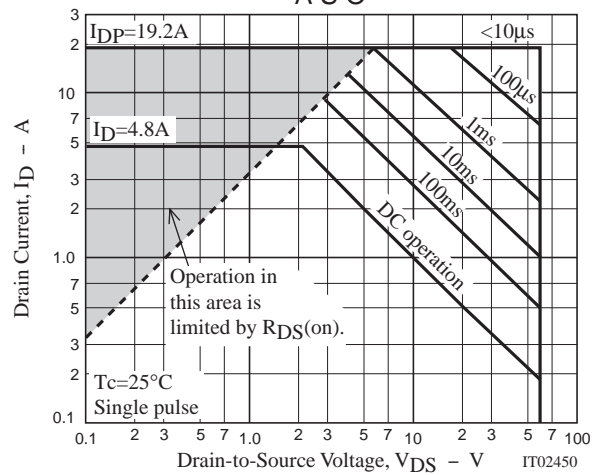
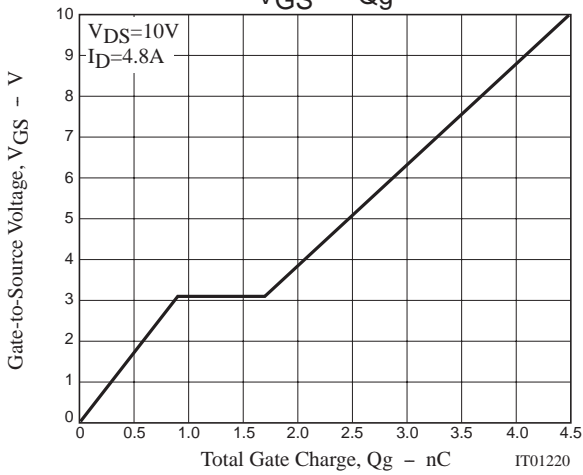
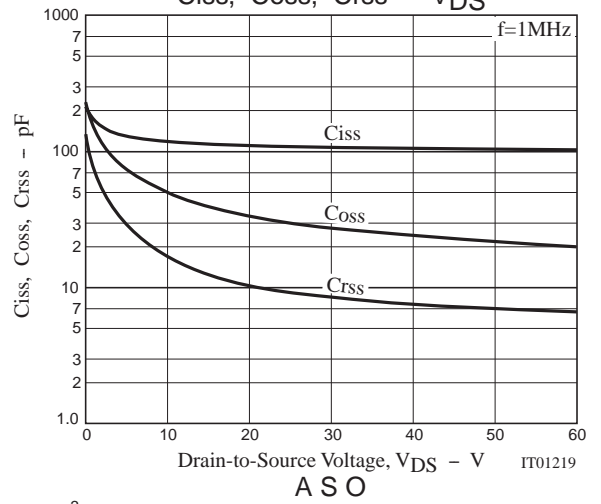
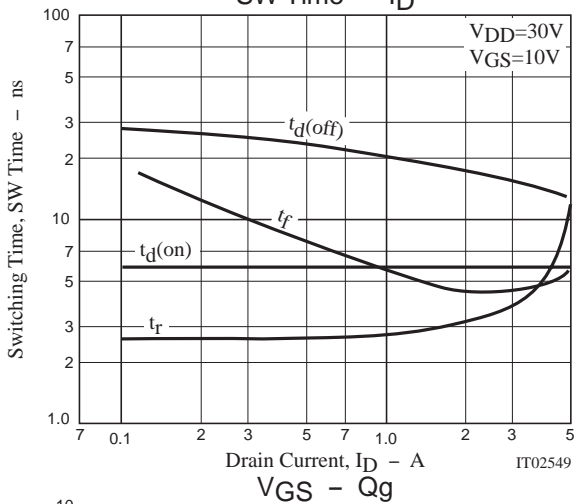
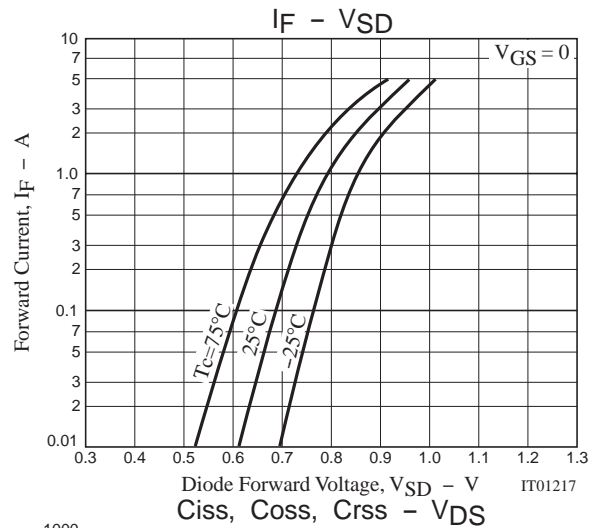
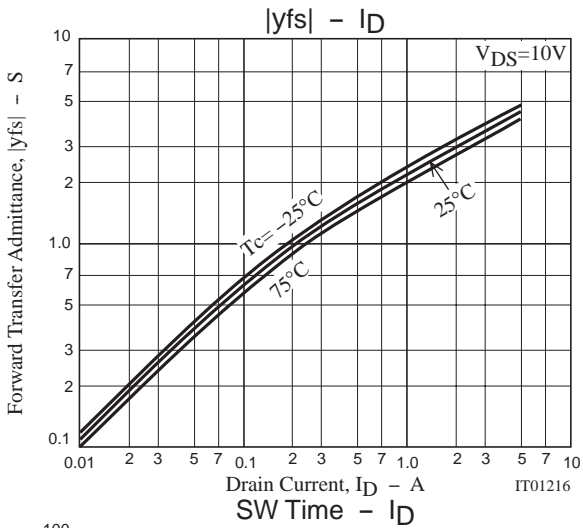
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| Parameter | Symbol | Conditions | Ratings | | | Unit |
|--|---------------|------------------------------------|---------|-----|-----|-----------|
| | | | min | typ | max | |
| Forward Transfer Admittance | $ y_{fs} $ | $V_{DS}=10V, I_D=2.4A$ | 2.2 | 3.2 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)1}$ | $I_D=2.4A, V_{GS}=10V$ | | 240 | 320 | $m\Omega$ |
| | $R_{DS(on)2}$ | $I_D=2.4A, V_{GS}=4V$ | | 320 | 440 | $m\Omega$ |
| Input Capacitance | C_{iss} | $V_{DS}=20V, f=1MHz$ | | 110 | | pF |
| Output Capacitance | C_{oss} | $V_{DS}=20V, f=1MHz$ | | 35 | | pF |
| Reverse Transfer Capacitance | C_{rss} | $V_{DS}=20V, f=1MHz$ | | 10 | | pF |
| Turn-ON Delay Time | $t_d(on)$ | See specified Test Circuit | | 6 | | ns |
| Rise Time | t_r | See specified Test Circuit | | 3.2 | | ns |
| Turn-OFF Delay Time | $t_d(off)$ | See specified Test Circuit | | 16 | | ns |
| Fall Time | t_f | See specified Test Circuit | | 4.8 | | ns |
| Total Gate Charge | Q_g | $V_{DS}=10V, V_{GS}=10V, I_D=4.8A$ | | 4.5 | | nC |
| Gate-to-Source Charge | Q_{gs} | $V_{DS}=10V, V_{GS}=10V, I_D=4.8A$ | | 0.9 | | nC |
| Gate-to-Drain "Miller" Charge | Q_{gd} | $V_{DS}=10V, V_{GS}=10V, I_D=4.8A$ | | 0.8 | | nC |
| Diode Forward Voltage | V_{SD} | $I_S=4.8A, V_{GS}=0$ | | 1 | 1.2 | V |

Switching Time Test Circuit



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