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Ordering number:ENN4984A

N-Channel Silicon MOSFET

# 2SK2441

## Ultrahigh-Speed Switching Applications

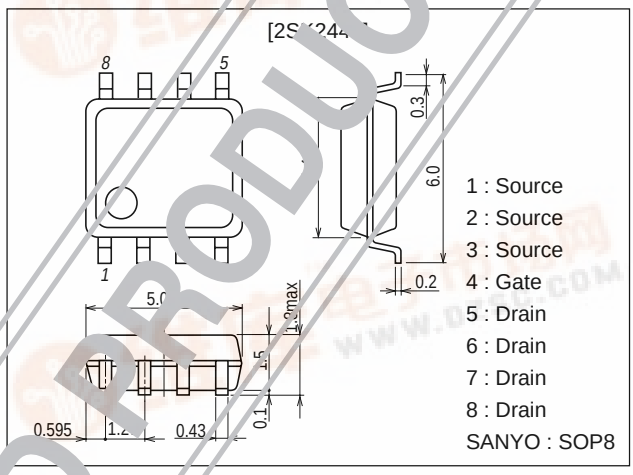
## Features

- Low ON resistance.
- Ultrahigh-speed switching.
- 2.5V drive.

## Package Dimensions

unit:mm

2116




## Specifications

### Absolute Maximum Ratings at Ta = 25˚C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Drain-to-Source Voltage | $V_{DSS}$ | | 20 | V |
| Gate-to-Source Voltage | $V_{GSS}$ | | ±12 | V |
| Drain Current (DC) | $I_D$ | | 7 | A |
| Drain Current (Pulse) | $I_{DP}$ | PW≤10μs, duty cycle≤1% | 48 | A |
| Allowable Power Dissipation | $P_D$ | Mounted on ceramic board (1000mm²×0.8mm) | 2.0 | W |
| Channel Temperature | Tch | | 150 | ˚C |
| Storage Temperature | Tstg | | –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 | 20 | | | V |
| Zero-Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=16V, $V_{GS}$=0 | | | 100 | μA |
| Gate-to-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±10V, $V_{DS}$=0 | | | ±10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$=10V, $I_D$=1mA | 0.4 | | 1.4 | V |
| Forward Transfer Admittance | $\|yfs\|$ | $V_{DS}$=10V, $I_D$=7A | 12 | 18 | | S |
| Static Drain-to-Source ON-State Resistance | $R_{DS(on)}1$ | $I_D$=7A, $V_{GS}$=4V | | 25 | 32 | mΩ |
| | $R_{DS(on)}2$ | $I_D$=2A, $V_{GS}$=2.5V | | 37 | 48 | mΩ |

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DISCONTINUED PRODUCT

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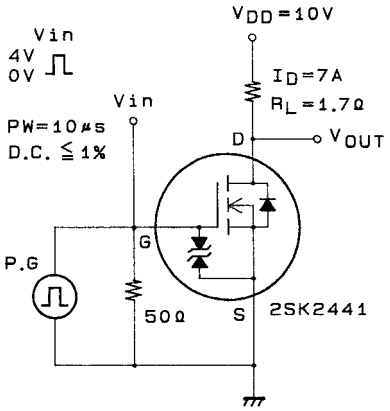
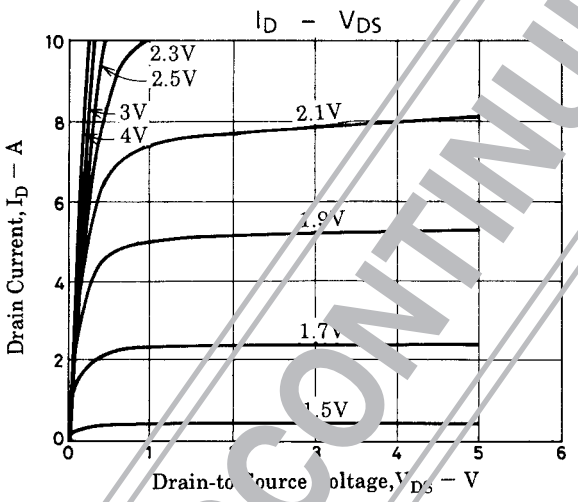
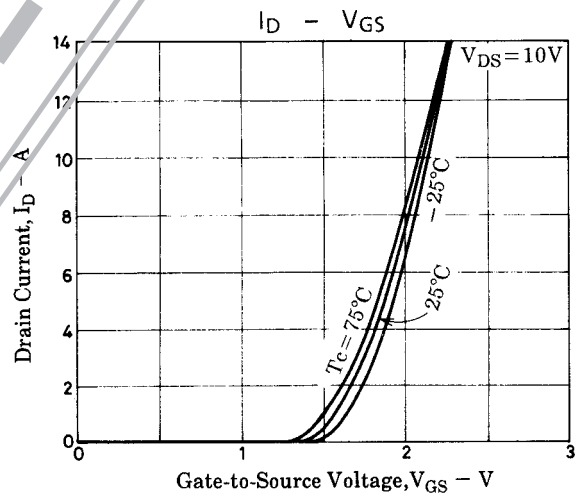
Continued from preceding page.

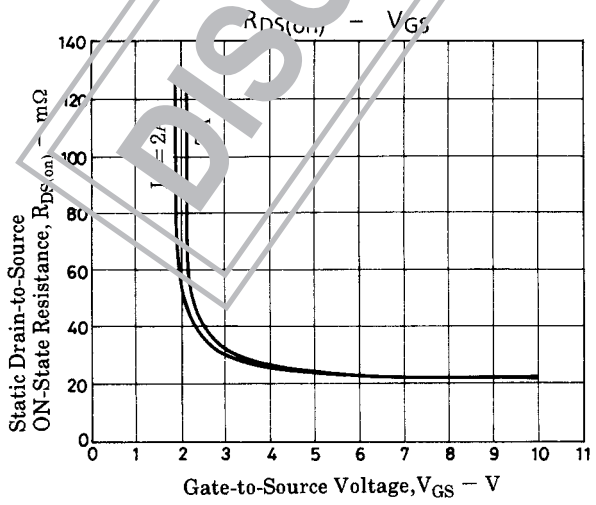
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Input Capacitance | Ciss | $V_{DS}$=10V, f=1MHz | | 1300 | | pF |
| Output Capacitance | Coss | $V_{DS}$=10V, f=1MHz | | 950 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=10V, f=1MHz | | 400 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit | | 30 | | ns |
| Rise Time | $t_r$ | See specified Test Circuit | | 190 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit | | 190 | | ns |
| Fall Time | $t_f$ | See specified Test Circuit | | 180 | | ns |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=7A, $V_{GS}$=0 | | 1.0 | 1.2 | V |

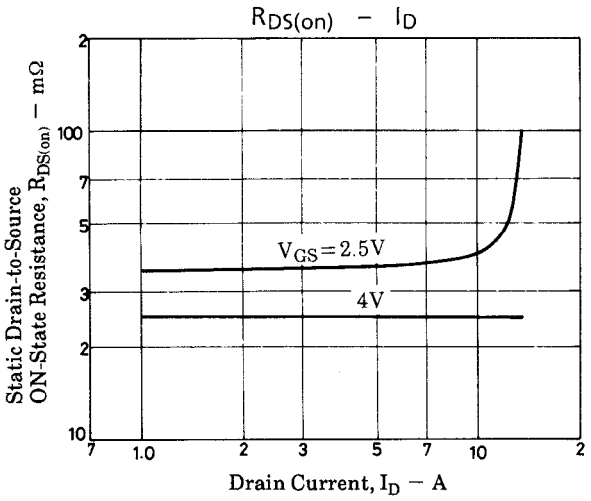
## Switching Time Test Circuit

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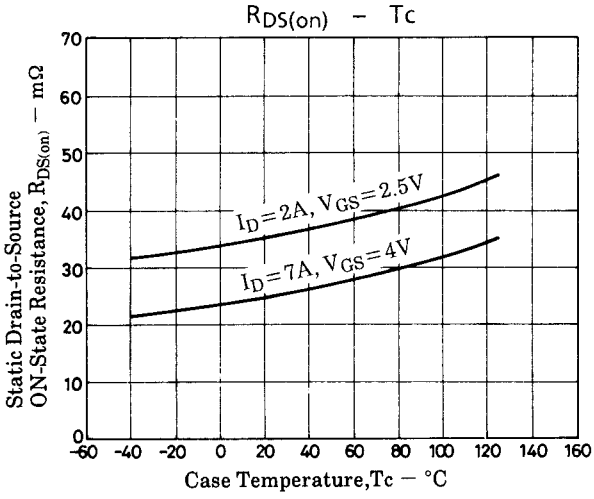


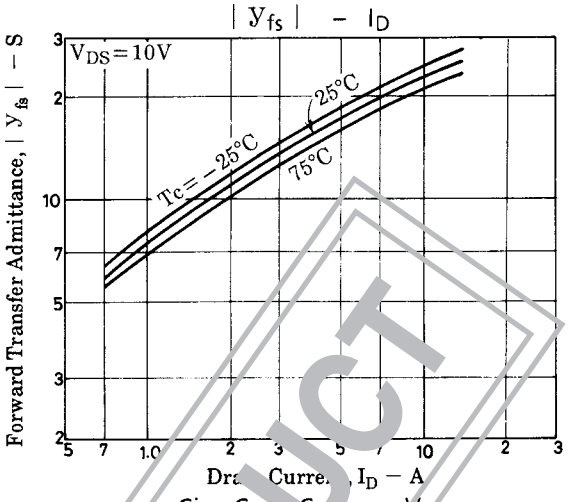


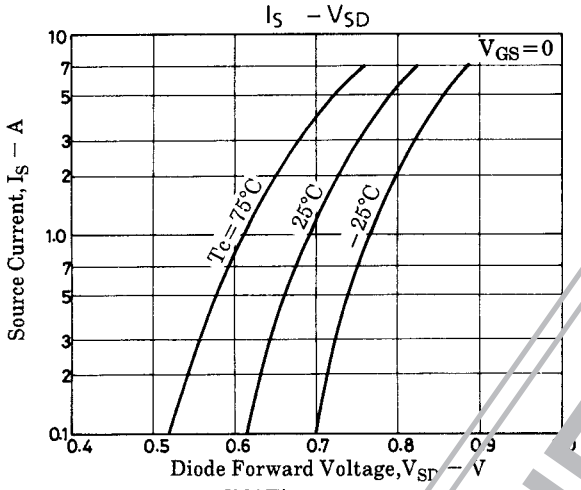


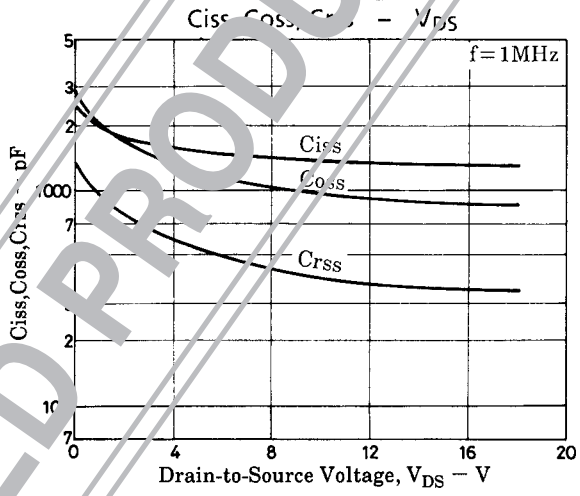


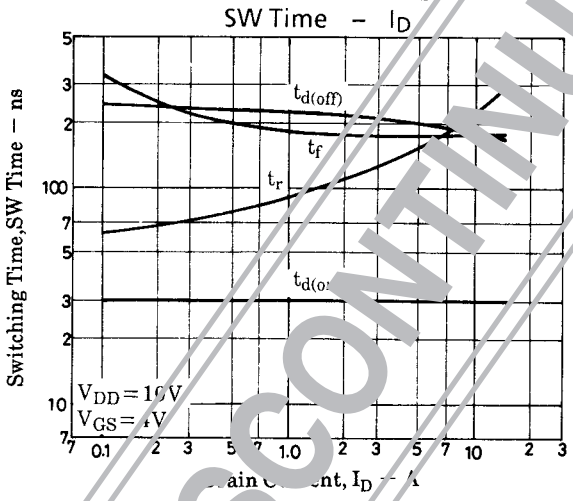


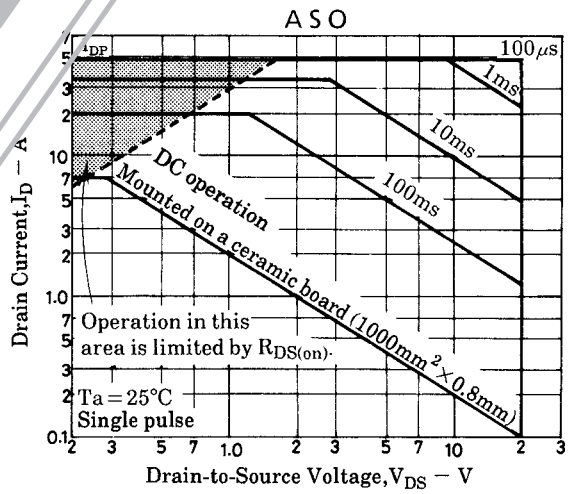


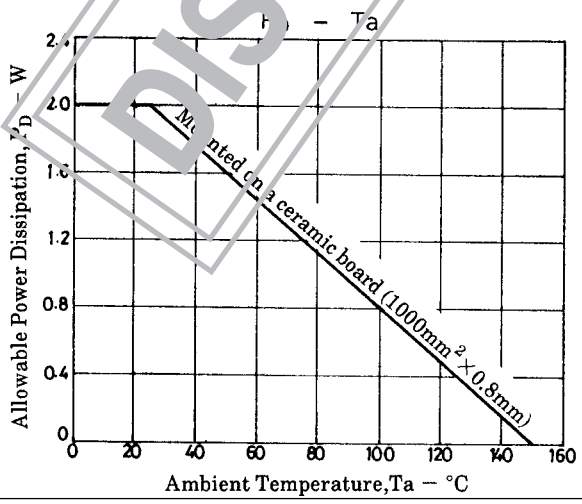


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