

2SK1469

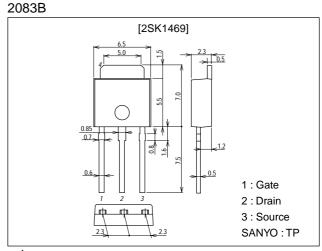
# **Ultrahigh-Speed Switching Applications**

### Features

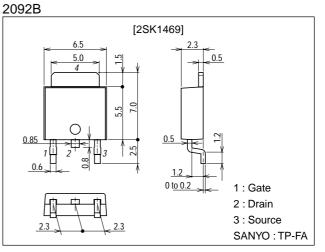
- $\cdot$  Low ON resistance.
- · Ultrahigh-speed switching.
- · Low-voltage drive.

### **Package Dimensions**

unit:mm



### unit:mm



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## Specifications

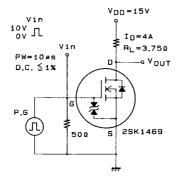
### Absolute Maximum Ratings at Ta = 25°C

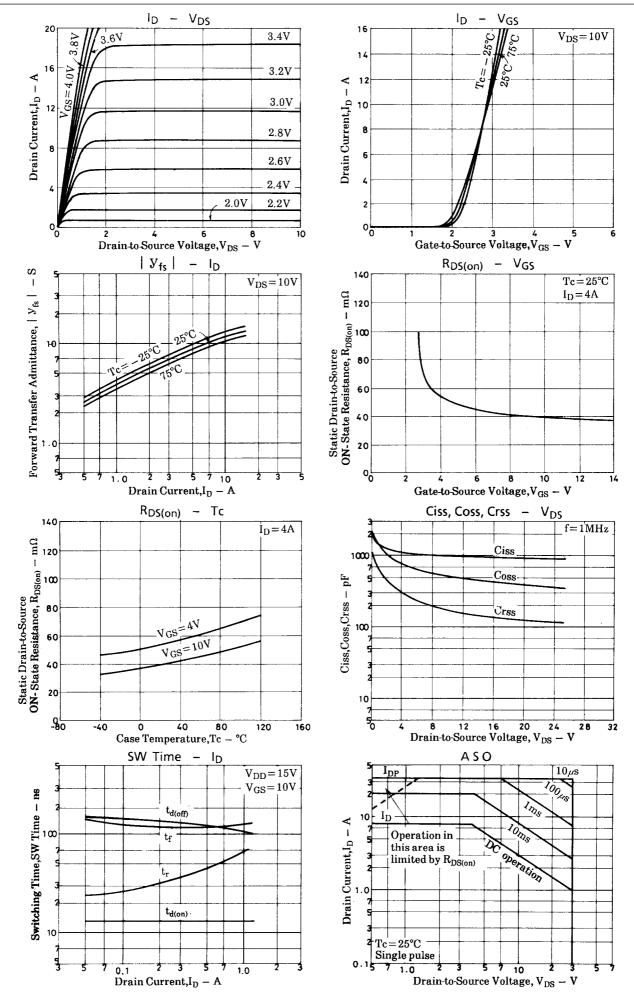
| Parameter                   | Symbol           | Conditions             | Ratings     | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage     | V <sub>DSS</sub> |                        | 30          | V    |
| Gate-to-Source Voltage      | V <sub>GSS</sub> |                        | ±15         | V    |
| Drain Current (DC)          | ۱ <sub>D</sub>   |                        | 8           | A    |
| Drain Current (pulse)       | IDP              | PW≤10µs, duty cycle≤1% | 32          | A    |
| Allowable Power Dissipation | PD               |                        | 1.0         | W    |
|                             | F D              | Tc=25°C                | 30          | W    |
| Channel Temperature         | Tch              |                        | 150         | °C   |
| Storage Temperature         | Tstg             |                        | -55 to +150 | °C   |

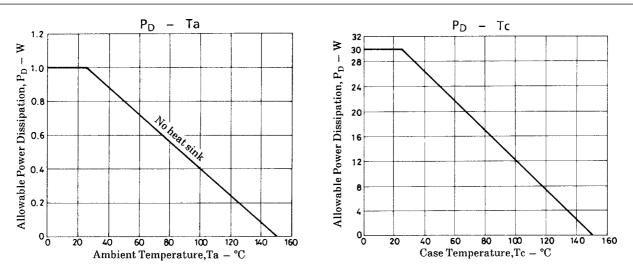
#### Electrical Characteristics at Ta = 25°C

| Parameter                                  | Symbol                | Conditions                                |     | Ratings |     |      |
|--|-----------------------|---|-----|---------|-----|------|
|  |                       |   | min | typ     | max | Unit |
| Drain-to-Source Breakdown Voltage          | V(BR)DSS              | I <sub>D</sub> =1mA, V <sub>GS</sub> =0   | 30  |         |     | V    |
| Gate-to-Source Breakdown Voltage           | V(BR)GSS              | IG=±100µA, V <sub>DS</sub> =0             | ±15 |         |     | V    |
| Zero-Gate Votlage Drain Current            | IDSS                  | V <sub>DS</sub> =30V, V <sub>GS</sub> =0  |     |         | 100 | μΑ   |
| Gate-to-Source Leakage Current             | IGSS                  | V <sub>GS</sub> =±12V, V <sub>DS</sub> =0 |     |         | ±10 | μA   |
| Cutoff Voltage                             | V <sub>GS(off)</sub>  | V <sub>DS</sub> =10V, I <sub>D</sub> =1mA | 1.0 |         | 2.0 | V    |
| Forward Transfer Admittance                | yfs                   | V <sub>DS</sub> =10V, I <sub>D</sub> =4A  | 5   | 8       |     | S    |
| Static Drain-to-Source On-State Resistance | R <sub>DS(on)</sub> 1 | I <sub>D</sub> =4A, V <sub>GS</sub> =10V  |     | 40      | 55  | mΩ   |
|  | R <sub>DS(on)</sub> 2 | ID=4A, VGS=4V                             |     | 55      | 75  | mΩ   |
| Input Capacitance                          | Ciss                  | V <sub>DS</sub> =10V, f=1MHz              |     | 1000    |     | pF   |
| Output Capacitance                         | Coss                  | V <sub>DS</sub> =10V, f=1MHz              |     | 550     |     | pF   |
| Reverse Transfer Capacitance               | Crss                  | V <sub>DS</sub> =10V, f=1MHz              |     | 180     |     | pF   |
| Turn-ON Delay Time                         | <sup>t</sup> d(on)    | See specified Test Circuit                |     | 13      |     | ns   |
| Rise Time                                  | tr                    | See specified Test Circuit                |     | 40      |     | ns   |
| Turn-OFF Delay Time                        | <sup>t</sup> d(off)   | See specified Test Circuit                |     | 130     |     | ns   |
| Fall Time                                  | t <sub>f</sub>        | See specified Test Circuit                |     | 120     |     | ns   |
| Diode Forward Voltage                      | V <sub>SD</sub>       | I <sub>S</sub> =8A, V <sub>GS</sub> =0    |     | 1.0     | 1.5 | V    |

### Switching Time Test Circuit







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