



SANYO Semiconductors

DATA SHEET

2SK2531 — N-Channel Silicon MOSFET

General-Purpose Switching Device Applications

Features

- Low ON-resistance.
- High-speed diode.
- Enables simplified fabrication, high-density mounding, and miniaturization in end products due to the surface mountable package.

Specifications

Absolute Maximum Ratings at Ta=25°C

| Parameter | Symbol | Conditions | Ratings | Unit |
|-----------------------------|------------------|------------------------|-------------|------|
| Drain-to-Source Voltage | V _{DSS} | | 250 | V |
| Gate-to-Source Voltage | V _{GSS} | | ±30 | V |
| Drain Current | I _D | | 6 | A |
| Drain Current (Pulse) | I _{DP} | PW≤10μs, duty cycle≤1% | 24 | A |
| Allowable Power Dissipation | P _D | Tc=25°C | 30 | 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} =0V | 250 | | | V |
| Gate-to-Source Breakdown Voltage | V _{(BR)GSS} | I _G = ±100μA, V _{DS} =0V | ±30 | | | V |
| Zero-Gate Voltage Drain Current | I _{DSS} | V _{DS} =250V, V _{GS} =0V | | | 1.0 | mA |
| Gate-to-Source Leakage Current | I _{GSS} | V _{GS} = ±25V, V _{DS} =0V | | | ±10 | μA |
| Cutoff Voltage | V _{GS(off)} | V _{DS} =10V, I _D =1mA | 2.0 | | 3.0 | V |
| Forward Transfer Admittance | y _{fs} | V _{DS} =10V, I _D =3A | 2.5 | 4.0 | | S |
| Static Drain-to-Source On-State Resistance | R _{DS(on)} | I _D =3A, V _{GS} =10V | | 600 | 800 | mΩ |

Continued on next page.

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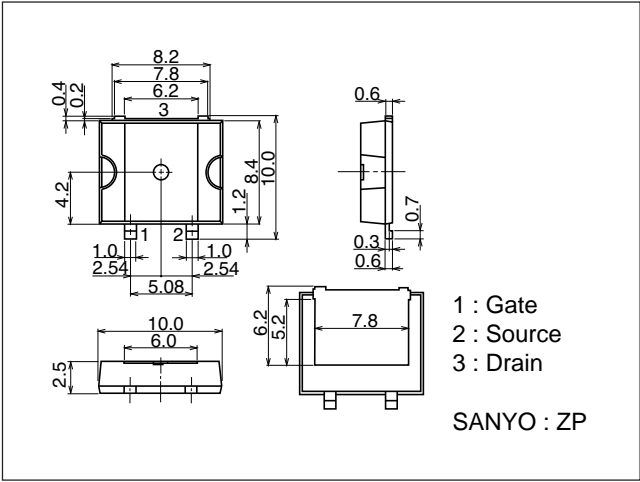
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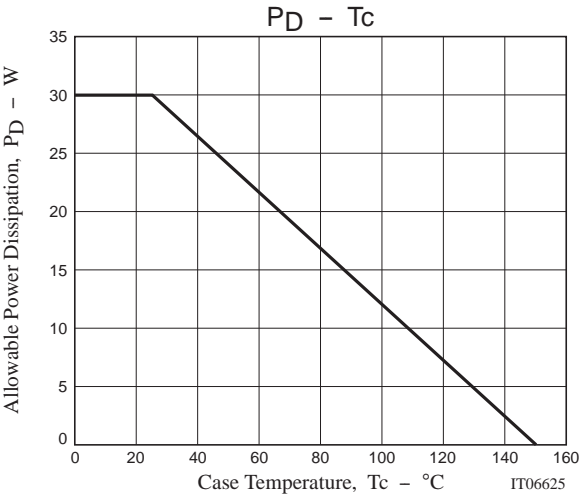
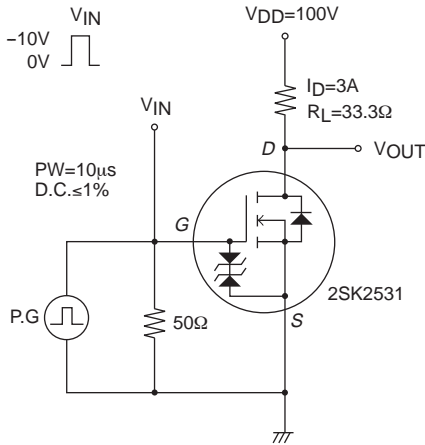
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|------------------------------|---------------------|---|---------|-----|-----|------|
| | | | min | typ | max | |
| Input Capacitance | Ciss | V _{DS} =20V, f=1MHz | | 420 | | pF |
| Output Capacitance | Coss | V _{DS} =20V, f=1MHz | | 95 | | pF |
| Reverse Transfer Capacitance | Crss | V _{DS} =20V, f=1MHz | | 30 | | pF |
| Turn-ON Delay Time | t _{d(on)} | See specified Test Circuit. | | 12 | | ns |
| Rise Time | t _r | See specified Test Circuit. | | 15 | | ns |
| Turn-OFF Delay Time | t _{d(off)} | See specified Test Circuit. | | 65 | | ns |
| Fall Time | t _f | See specified Test Circuit. | | 55 | | ns |
| Diode Forward Voltage | V _{SD} | I _S =6A, V _{GS} =0V | | 1.0 | 1.5 | V |
| Diode Reverse Recovery Time | t _{rr} | I _S =6A, di / dt=100A / μs | | 100 | | ns |

Package Dimensions

unit : mm (typ)
7002-001



Switching Time Test Circuit



Note on usage : Since the 2SK2531 is a MOSFET product, please avoid using this device in the vicinity of highly charged objects.

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