Ordering number:EN4311

N-Channel Silicon MOSFET

# 2SK1922

## Ultrahigh-Speed Switching Applications



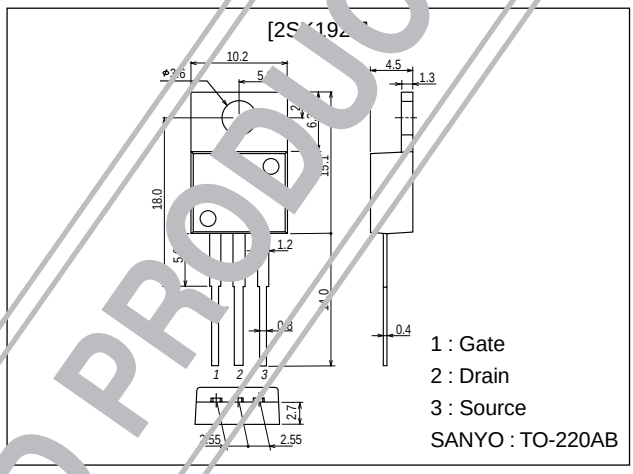
### Features

- Low ON resistance.
- Ultrahigh-speed switching.
- High-speed diode (trr=100ns).

### Package Dimensions

unit:mm

2052C




### Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Drain-to-Source Voltage | $V_{DSS}$ | | 600 | V |
| Gate-to-Source Voltage | $V_{GSS}$ | | ±30 | V |
| Drain Current (DC) | $I_D$ | | 2 | A |
| Drain Current (pulse) | $I_{DP}$ | | 8 | A |
| Allowable Power Dissipation | $P_D$ | | 1.75 | W |
| | | Tc=25˚C | 50 | 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 | $V_{(BR)DSS}$ | $I_D$=10mA, $V_{GS}$=0 | 600 | | | V |
| Zero-Gate Votlage Drain Current | $I_{DSS}$ | $V_{DS}$=480V, $V_{GS}$=0 | | | 1.0 | mA |
| Gate-to-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±30V, $V_{DS}$=0 | | | ±100 | nA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$=10V, $I_D$=1mA | 2.0 | | 3.0 | V |
| Forward Transfer Admittance | \|yfs\| | $V_{DS}$=10V, $I_D$=1A | 0.8 | 1.5 | | S |
| Static Drain-to-Source On-State Resistance | $R_{DS(on)}$ | $I_D$=1A, $V_{GS}$=10V | | 3.2 | 4.3 | Ω |

(Note) Be careful in handling the 2SK1922 because it has no protection diode between gate and source.

Continued on next page.



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Continued from preceding page.

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| Input Capacitance | Ciss | $V_{DS}$=20V, f=1MHz | | 400 | | pF |
| Output Capacitance | Coss | $V_{DS}$=20V, f=1MHz | | 55 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=20V, f=1MHz | | 15 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 10 | | ns |
| Rise Time | $t_r$ | See specified Test Circuit. | | 12 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | See specified Test Circuit. | | 65 | | ns |
| Fall Time | $t_f$ | See specified Test Circuit. | | 40 | | ns |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=2A, $V_{GS}$=0 | | | 1.5 | V |
| Diode Reverse Recovery Time | trr | $I_S$=2A, di/dt=100A/μs | | 100 | | ns |

## Switching Time Test Circuit