Ordering number: EN 3826

SANYO

No.3826

# 2SK1731

N-Channel MOS Silicon FET

## Very High-Speed Switching Applications

### Features

- Low ON resistance.
- Very high-speed switching.
- Low-voltage drive.
- Its height onboard is 9.5mm.
- Meets radial taping.

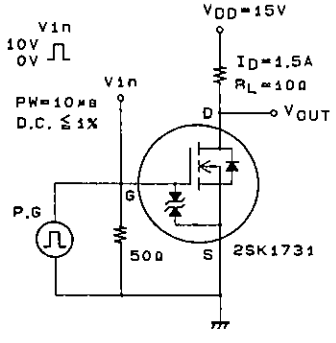
### Absolute Maximum Ratings at Ta = 25°C

| | | | | unit |
|---|---|---|---|---|
| Drain to Source Voltage | $V_{DSS}$ | | 30 | V |
| Gate to Source Voltage | $V_{GSS}$ | | ±15 | V |
| Drain Current(DC) | $I_D$ | | 3 | A |
| Drain Current(Pulse) | $I_{DP}$ | PW≦10μs, duty cycle≦1% | 12 | A |
| Allowable Power Dissipation | $P_D$ | | 1.5 | W |
| Channel Temperature | Tch | | 150 | °C |
| Storage Temperature | Tstg | | −55 to +150 | °C |

### Electrical Characteristics at Ta = 25°C

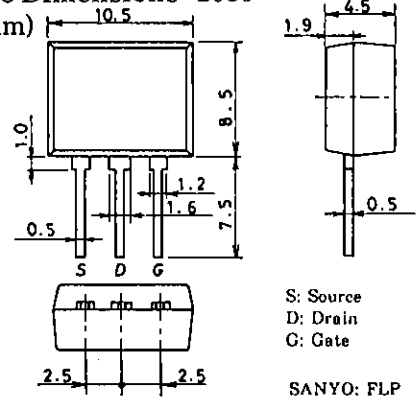
| | | | min | typ | max | unit |
|---|---|---|---|---|---|---|
| D-S Breakdown Voltage | $V_{(BR)DSS}$ | $I_D$=1mA, $V_{GS}$=0 | 30 | | | V |
| G-S Breakdown Voltage | $V_{(BR)GSS}$ | $I_G$=±100μA, $V_{DS}$=0 | ±15 | | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=30V, $V_{GS}$=0 | | | 100 | μA |
| Gate to Source Leakage Current | $I_{GSS}$ | $V_{GS}$=±12V, $V_{DS}$=0 | | | ±10 | μA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$=10V, $I_D$=1mA | 1.0 | | 2.0 | V |
| Forward Transfer Admittance | $\|y_{fs}\|$ | $V_{DS}$=10V, $I_D$=1.5A | 2 | 3.5 | | S |
| Static Drain to Source on State Resistance | $R_{DS(on)}$ | $I_D$=1.5A, $V_{GS}$=10V | | 0.1 | 0.14 | Ω |
| | $R_{DS(on)}$ | $I_D$=1.5A, $V_{GS}$=4V | | 0.14 | 0.18 | Ω |
| Input Capacitance | $C_{iss}$ | $V_{DS}$=10V, f=1MHz | | 400 | | pF |
| Output Capacitance | $C_{oss}$ | $V_{DS}$=10V, f=1MHz | | 250 | | pF |
| Reverse Transfer Capacitance | $C_{rss}$ | $V_{DS}$=10V, f=1MHz | | 90 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | See specified Test Circuit. | | 10 | | ns |
| Rise Time | $t_r$ | 〃 | | 18 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | 〃 | | 95 | | ns |
| Fall Time | $t_f$ | 〃 | | 60 | | ns |
| Diode Forward Voltage | $V_{SD}$ | $I_S$=3A, $V_{GS}$=0 | | 1.0 | 1.5 | V |

### Switching Time Test Circuit




### Package Dimensions 2085

(unit : mm)





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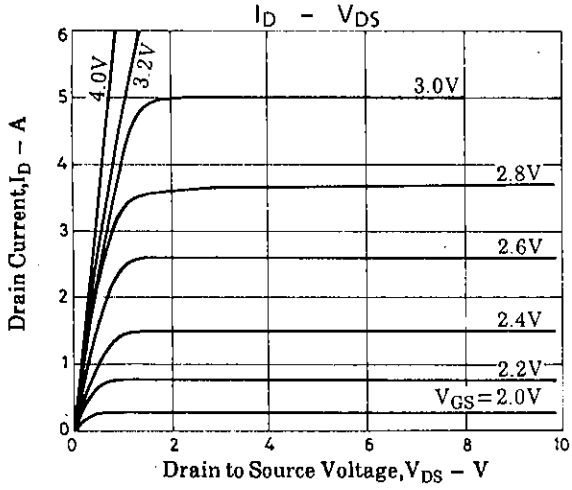
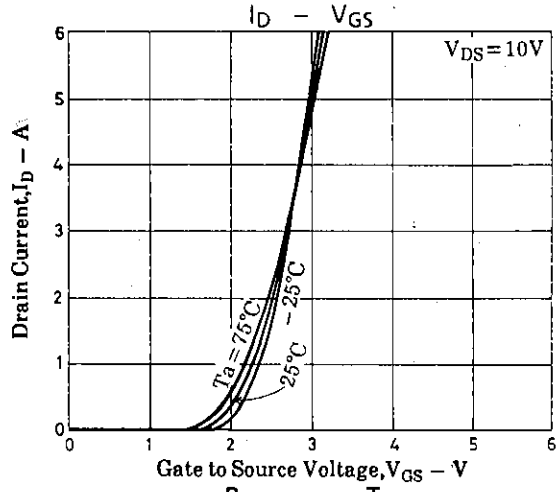
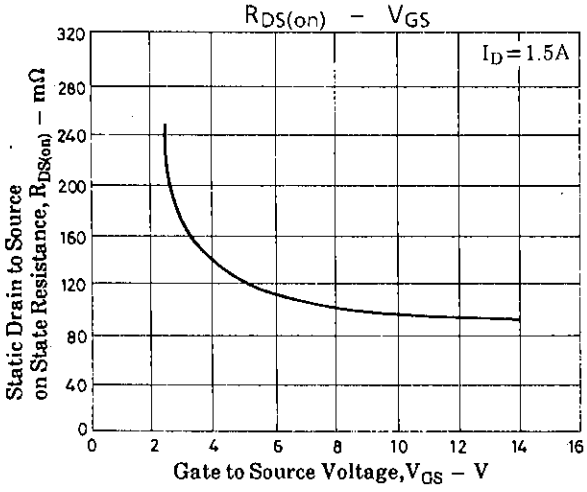
$I_D$ – $V_{DS}$



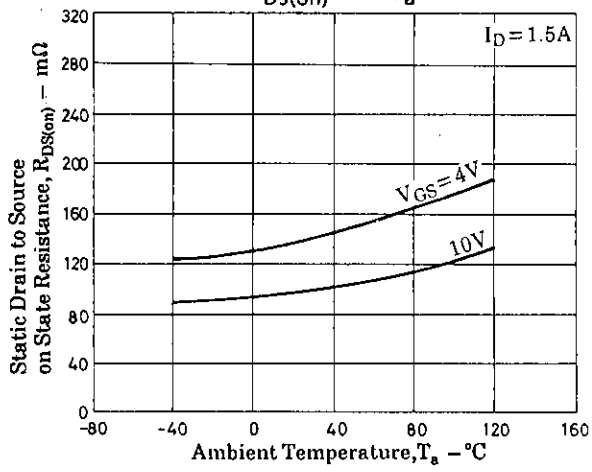

$I_D$ – $V_{GS}$



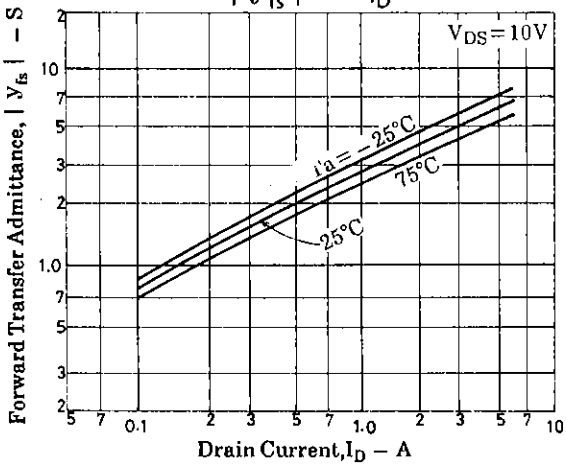

$R_{DS(on)}$ – $V_{GS}$



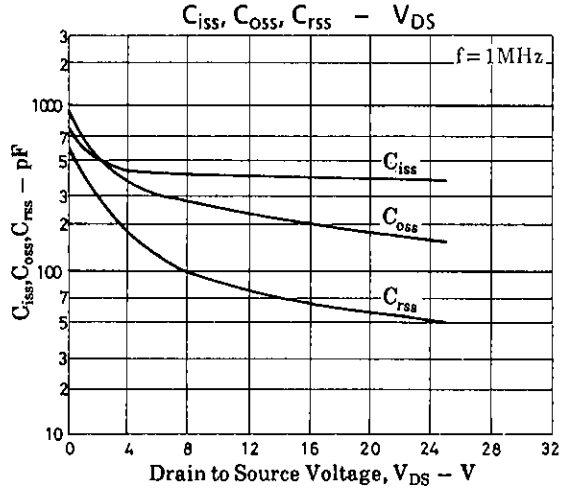

$R_{DS(on)}$ – $T_a$



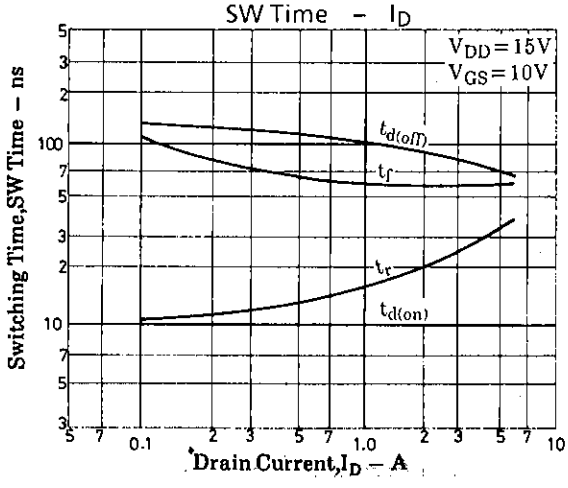

$|y_{fs}|$ – $I_D$




$C_{iss}$, $C_{oss}$, $C_{rss}$ – $V_{DS}$




SW Time – $I_D$

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