Ordering number: EN3573

SANYO

No.3573

# 2SK1435

N-Channel MOS Silicon FET

## Very High-Speed Switching Applications

### Features

- Low ON-state resistance.
- Very high-speed switching.
- Converters.
- Micaless package facilitating easy mounting.

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

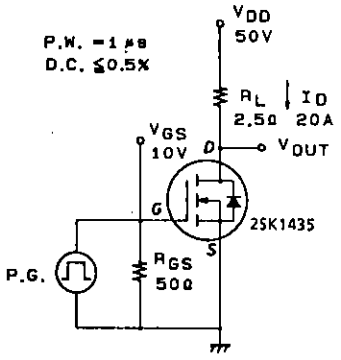
| | | | | unit |
|---|---|---|---|---|
| Drain to Source Voltage | $V_{DSS}$ | | 100 | V |
| Gate to Source Voltage | $V_{GSS}$ | | ±20 | V |
| Drain Current(DC) | $I_D$ | | 30 | A |
| Drain Current(Pulse) | $I_{DP}$ | PW≦10μs, duty cycle≦1% | 120 | A |
| Allowable Power Dissipation | $P_D$ | Tc = 25°C | 60 | W |
| | | | 3.0 | 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 | 100 | | | V |
| Zero Gate Voltage Drain Current | $I_{DSS}$ | $V_{GS}$ = 100V, $V_{DS}$ = 0 | | | 100 | μA |
| Gate to Source Leakage Current | $I_{GSS}$ | $V_{GS}$ = ±20V, $V_{DS}$ = 0 | | | ±100 | nA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$ = 10V, $I_D$ = 1mA | 1.5 | | 2.5 | V |
| Forward Transfer Admittance | $\|Y_{fs}\|$ | $V_{DS}$ = 10V, $I_D$ = 20A | 13 | 22 | | S |
| Static Drain to Source on State Resistance | $R_{DS(on)}$ | $I_D$ = 20A, $V_{GS}$ = 10V | | 0.040 | 0.055 | Ω |
| Input Capacitance | Ciss | $V_{DS}$ = 20V, f = 1MHz | | 2400 | | pF |
| Output Capacitance | Coss | $V_{DS}$ = 20V, f = 1MHz | | 700 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$ = 20V, f = 1MHz | | 200 | | pF |
| Turn-ON Delay Time | $t_{d(on)}$ | $I_D$ = 20A, $V_{GS}$ = 10V, $V_{DD}$ = 50V, $R_{GS}$ = 50Ω | | 30 | | ns |
| Rise Time | $t_r$ | | | 90 | | ns |
| Turn-OFF Delay Time | $t_{d(off)}$ | | | 320 | | ns |
| Fall Time | $t_f$ | | | 130 | | ns |
| Diode Forward Voltage | $V_{SD}$ | $I_S$ = 30A, $V_{GS}$ = 0 | | | 1.8 | V |

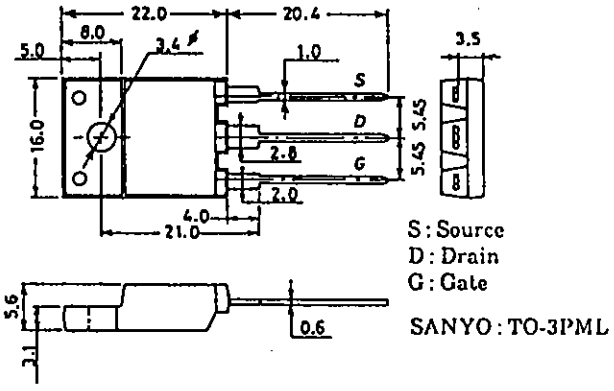
(Note) Be careful in handling the 2SK1435 because it has no protection diode between gate and source.

### Switching Time Test Circuit




### Package Dimensions 2076

(unit : mm)




S : Source
D : Drain
G : Gate

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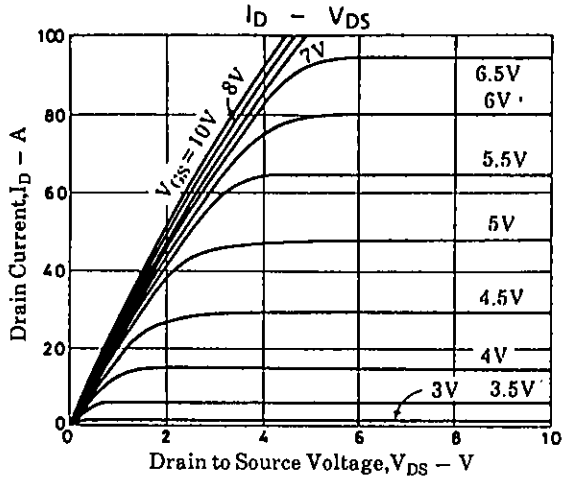
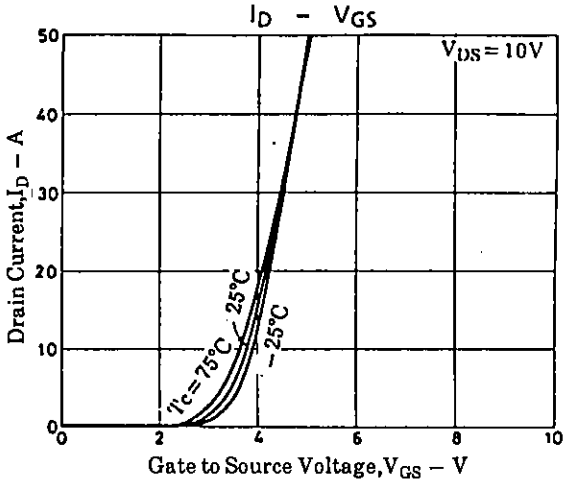
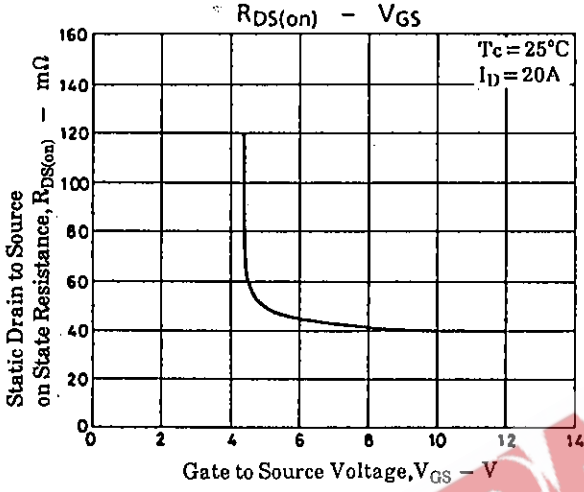
$I_D$ – $V_{DS}$



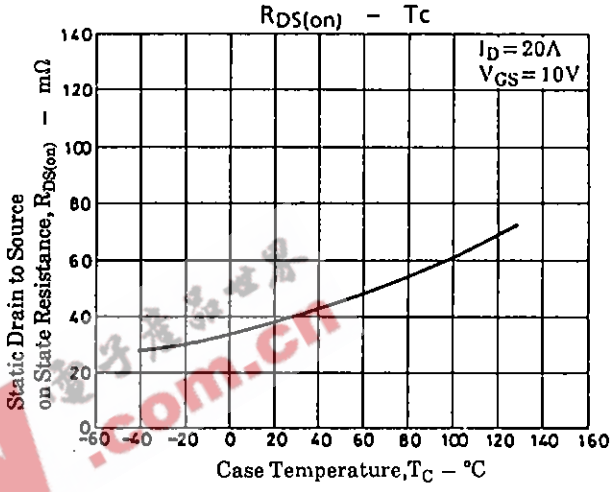

$I_D$ – $V_{GS}$



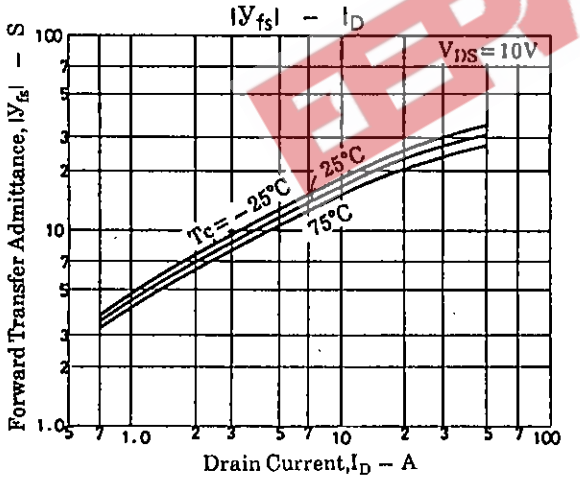

$R_{DS(on)}$ – $V_{GS}$



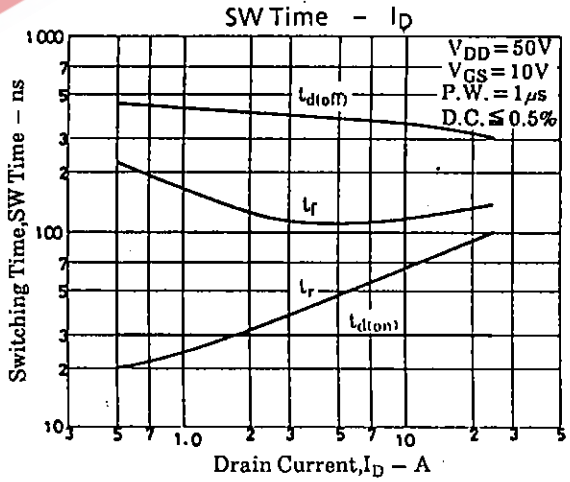

$R_{DS(on)}$ – Tc



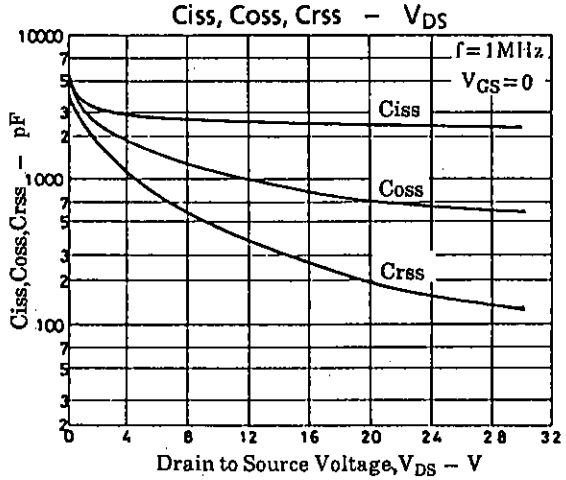

$|Y_{fs}|$ – $I_D$




SW Time – $I_D$




Ciss, Coss, Crss – $V_{DS}$

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