

**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.

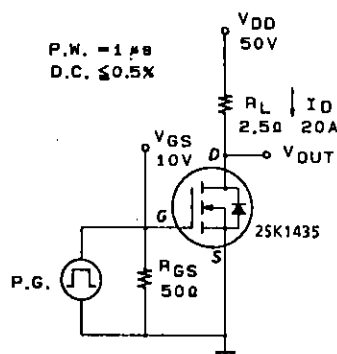
**Absolute Maximum Ratings at  $T_a = 25^\circ\text{C}$** 

|                             |           |                                                     | unit             |
|-----------------------------|-----------|-----------------------------------------------------|------------------|
| Drain to Source Voltage     | $V_{DS}$  | 100                                                 | V                |
| Gate to Source Voltage      | $V_{GS}$  | $\pm 20$                                            | V                |
| Drain Current(DC)           | $I_D$     | 30                                                  | A                |
| Drain Current(Pulse)        | $I_{DP}$  | $PW \leq 10\mu\text{s}, \text{duty cycle} \leq 1\%$ | 120 A            |
| Allowable Power Dissipation | $P_D$     | $T_c = 25^\circ\text{C}$                            | 60 W             |
|                             |           |                                                     | 3.0 W            |
| Channel Temperature         | $T_{ch}$  | 150                                                 | $^\circ\text{C}$ |
| Storage Temperature         | $T_{stg}$ | $-55 \text{ to } +150$                              | $^\circ\text{C}$ |

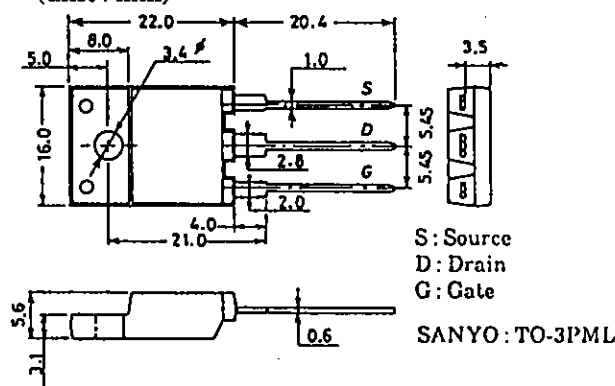
**Electrical Characteristics at  $T_a = 25^\circ\text{C}$** 

|                                               |               |                                                                                     | min | typ   | max       | unit          |
|-----------------------------------------------|---------------|-------------------------------------------------------------------------------------|-----|-------|-----------|---------------|
| D-S Breakdown Voltage                         | $V_{(BR)DSS}$ | $I_D = 1\text{mA}, V_{GS} = 0$                                                      | 100 |       |           | V             |
| Zero Gate Voltage Drain Current               | $I_{DSS}$     | $V_{GS} = 100\text{V}, V_{DS} = 0$                                                  |     |       | 100       | $\mu\text{A}$ |
| Gate to Source Leakage Current                | $I_{GSS}$     | $V_{GS} = \pm 20\text{V}, V_{DS} = 0$                                               |     |       | $\pm 100$ | nA            |
| Cutoff Voltage                                | $V_{GS(off)}$ | $V_{DS} = 10\text{V}, I_D = 1\text{mA}$                                             | 1.5 |       | 2.5       | V             |
| Forward Transfer Admittance                   | $ Y_{fs} $    | $V_{DS} = 10\text{V}, I_D = 20\text{A}$                                             | 13  | 22    |           | S             |
| Static Drain to Source<br>on State Resistance | $R_{DS(on)}$  | $I_D = 20\text{A}, V_{GS} = 10\text{V}$                                             |     | 0.040 | 0.055     | $\Omega$      |
| Input Capacitance                             | $C_{iss}$     | $V_{DS} = 20\text{V}, f = 1\text{MHz}$                                              |     | 2400  |           | pF            |
| Output Capacitance                            | $C_{oss}$     | $V_{DS} = 20\text{V}, f = 1\text{MHz}$                                              |     | 700   |           | pF            |
| Reverse Transfer Capacitance                  | $C_{rss}$     | $V_{DS} = 20\text{V}, f = 1\text{MHz}$                                              |     | 200   |           | pF            |
| Turn-ON Delay Time                            | $t_{d(on)}$   | $I_D = 20\text{A}, V_{GS} = 10\text{V}$<br>$V_{DD} = 50\text{V}, R_{GS} = 50\Omega$ |     | 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                         | $V_{SD}$      | $I_S = 30\text{A}, V_{GS} = 0$                                                      |     |       | 1.8       | V             |

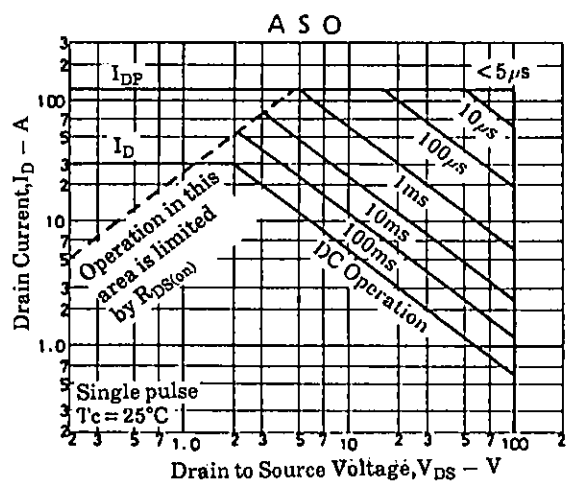
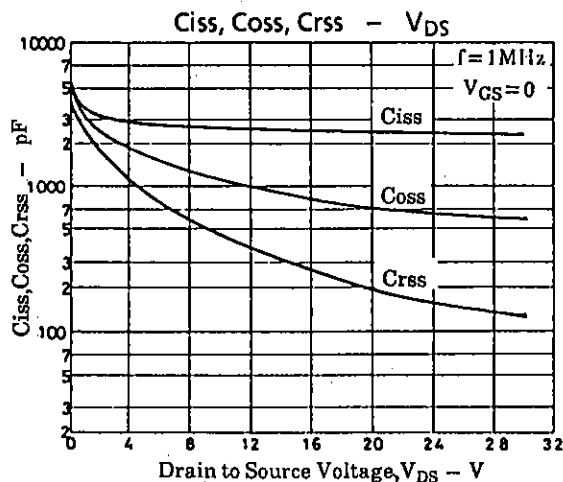
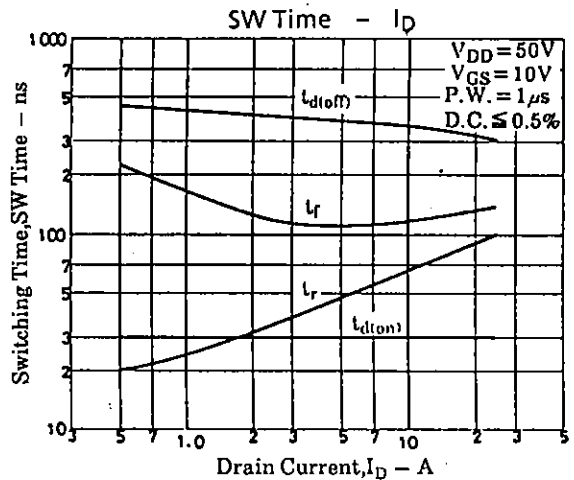
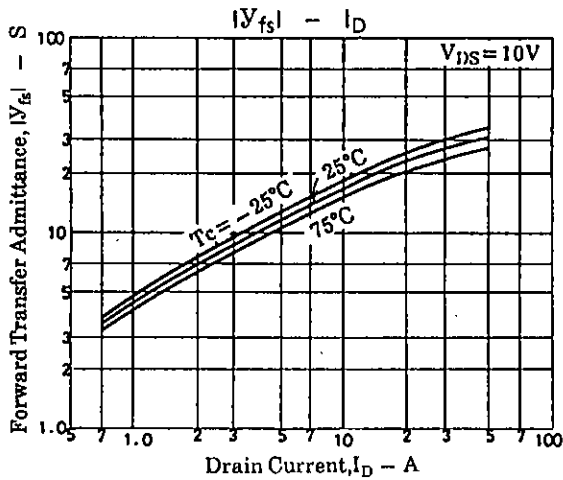
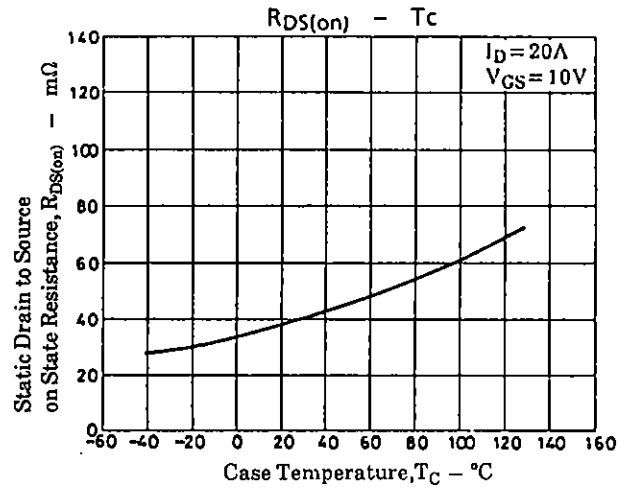
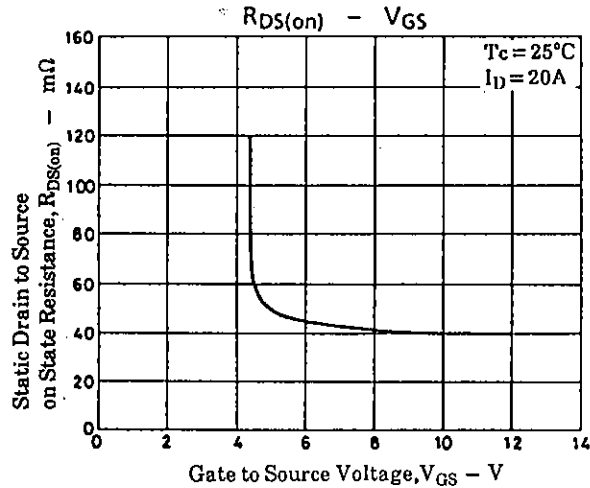
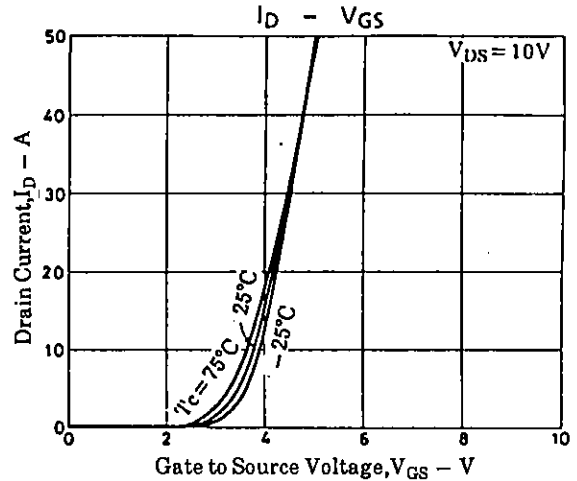
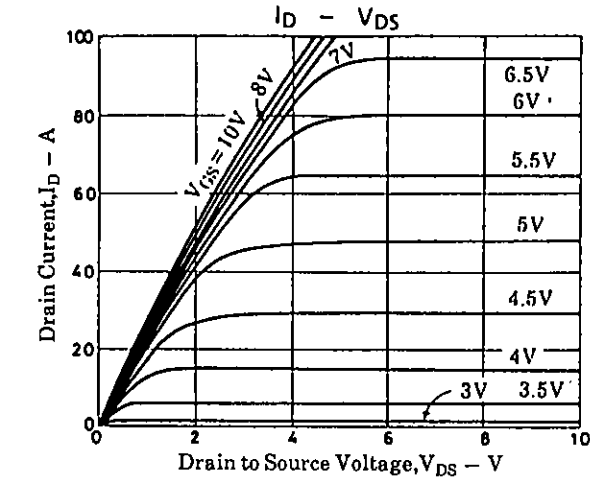
(Note) Be careful in handling the 2SK1435 because it has no protection diode between gate and source.

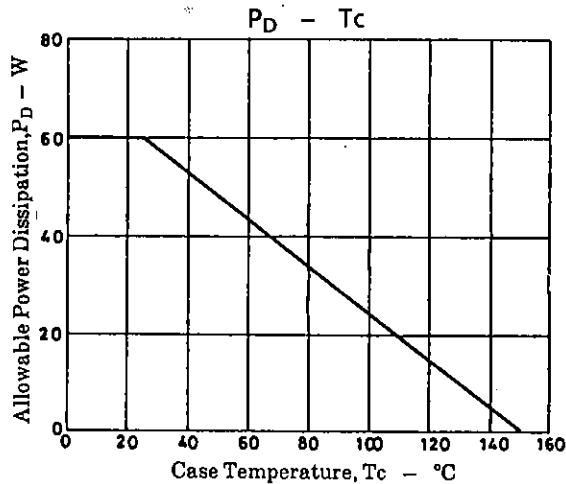
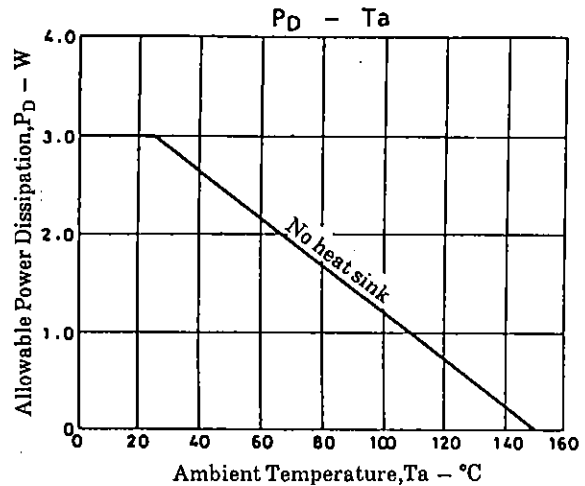
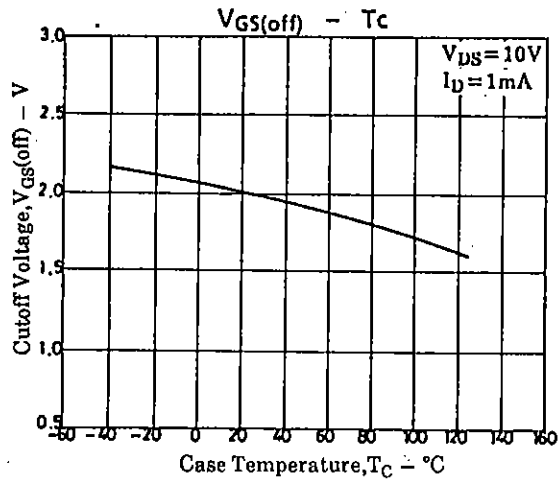
**Switching Time Test Circuit****Package Dimensions 2076**

(unit : mm)



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