

# 2SK1178

External dimensions 1 ..... FM20

## Absolute Maximum Ratings (Ta = 25°C)

| Symbol                 | Ratings                       | Unit |
|------------------------|-------------------------------|------|
| V <sub>DSS</sub>       | 500                           | V    |
| V <sub>GSS</sub>       | ±20                           | V    |
| I <sub>D</sub>         | ±4.0                          | A    |
| I <sub>D</sub> (pulse) | ±16 (T <sub>ch</sub> ≤ 150°C) | A    |
| P <sub>D</sub>         | 35 (T <sub>c</sub> = 25°C)    | W    |
| E <sub>AS</sub> *      | 260                           | mJ   |
| T <sub>ch</sub>        | 150                           | °C   |
| T <sub>stg</sub>       | -55 to +150                   | °C   |

\*: V<sub>DD</sub> = 50V, L = 28mH, I<sub>L</sub> = 4.0A, unclamped, See Figure 1 on Page 5.

## Electrical Characteristics (Ta = 25°C)

| Symbol                | Ratings |     |      | Unit | Conditions  |
|-----------------------|---------|-----|------|------|---|
|                       | min     | typ | max  |      |   |
| V <sub>(BR) DSS</sub> | 500     |     |      | V    | I <sub>D</sub> = 250μA, V <sub>GS</sub> = 0V  |
| I <sub>GSS</sub>      |         |     | ±500 | nA   | V <sub>GS</sub> = ±20V  |
| I <sub>DSS</sub>      |         |     | 250  | μA   | V <sub>DS</sub> = 500V, V <sub>GS</sub> = 0V  |
| V <sub>TH</sub>       | 2.0     |     | 4.0  | V    | V <sub>DS</sub> = 10V, I <sub>D</sub> = 250μA   |
| Re (yfs)              | 2.4     | 3.7 |      | S    | V <sub>DS</sub> = 10V, I <sub>D</sub> = 2.0A  |
| R <sub>DS (on)</sub>  |         | 1.3 | 1.5  | Ω    | V <sub>GS</sub> = 10V, I <sub>D</sub> = 2.0A  |
| C <sub>iss</sub>      |         | 610 |      | pF   | V <sub>DS</sub> = 25V, f = 1.0MHz, V <sub>GS</sub> = 0V                                       |
| C <sub>oss</sub>      |         | 91  |      | pF   | V <sub>DS</sub> = 25V, f = 1.0MHz, V <sub>GS</sub> = 0V                                       |
| t <sub>on</sub>       |         | 50  |      | ns   | I <sub>D</sub> = 2.0A, V <sub>DD</sub> = 250V, V <sub>GS</sub> = 10V, See Figure 2 on Page 5. |
| t <sub>off</sub>      |         | 120 |      | ns   | I <sub>D</sub> = 2.0A, V <sub>DD</sub> = 250V, V <sub>GS</sub> = 10V, See Figure 2 on Page 5. |

