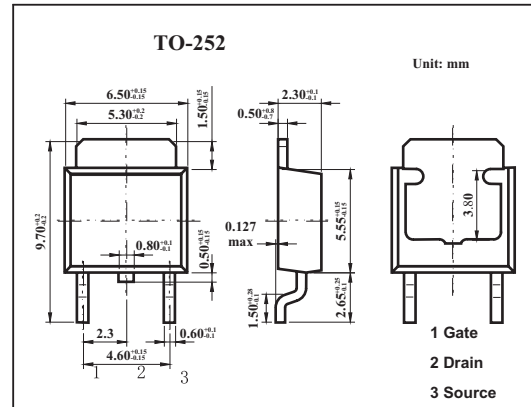


## MOS Field Effect Transistor 2SK3386

### ■ Features

- Low on-resistance  
 $R_{DS(on)1} = 21 \text{ m}\Omega \text{ MAX. (} V_{GS} = 10 \text{ V, } I_D = 17 \text{ A)}$   
 $R_{DS(on)2} = 36 \text{ m}\Omega \text{ MAX. (} V_{GS} = 4.0 \text{ V, } I_D = 17 \text{ A)}$
- Low  $C_{iss}$  :  $C_{iss} = 2100 \text{ pF TYP.}$
- Built-in gate protection diode



### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

| Parameter               | Symbol     | Rating                 | Unit             |
|-------------------------|------------|------------------------|------------------|
| Drain to source voltage | $V_{DS}$   | 60                     | V                |
| Gate to source voltage  | $V_{GS}$   | $\pm 20$               | V                |
| Drain current           | $I_D$      | $\pm 30$               | A                |
|                         | $I_{dp}^*$ | $\pm 100$              | A                |
| Power dissipation       | $P_D$      | $T_c=25^\circ\text{C}$ | 36               |
|                         |            | $T_a=25^\circ\text{C}$ | 1.0              |
| Channel temperature     | $T_{ch}$   | 150                    | $^\circ\text{C}$ |
| Storage temperature     | $T_{stg}$  | -55 to +150            | $^\circ\text{C}$ |

\*  $PW \leq 10 \mu\text{s}$ , Duty Cycle  $\leq 1\%$

### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

| Parameter                           | Symbol        | Testconditions   | Min | Typ  | Max      | Unit             |
|-------------------------------------|---------------|--|-----|------|----------|------------------|
| Drain cut-off current               | $I_{DSS}$     | $V_{DS}=60\text{V}, V_{GS}=0$  |     |      | 10       | $\mu\text{A}$    |
| Gate leakage current                | $I_{GSS}$     | $V_{GS}=\pm 20\text{V}, V_{DS}=0$  |     |      | $\pm 10$ | $\mu\text{A}$    |
| Gate cutoff voltage                 | $V_{GS(off)}$ | $V_{DS}=10\text{V}, I_D=1\text{mA}$                                      | 1.5 | 2.0  | 2.5      | V                |
| Forward transfer admittance         | $ Y_{fs} $    | $V_{DS}=10\text{V}, I_D=17\text{A}$                                      | 10  | 19   |          | S                |
| Drain to source on-state resistance | $R_{DS(on)1}$ | $V_{GS}=10\text{V}, I_D=17\text{A}$                                      |     | 17   | 21       | $\text{m}\Omega$ |
|                                     | $R_{DS(on)2}$ | $V_{GS}=4.0\text{V}, I_D=17\text{A}$                                     |     | 25   | 36       | $\text{m}\Omega$ |
| Input capacitance                   | $C_{iss}$     | $V_{DS}=10\text{V}, V_{GS}=0, f=1\text{MHz}$                             |     | 2100 |          | pF               |
| Output capacitance                  | $C_{oss}$     |  |     | 340  |          | pF               |
| Reverse transfer capacitance        | $C_{rss}$     |  |     | 170  |          | pF               |
| Turn-on delay time                  | $t_{on}$      | $I_D=17\text{A}, V_{GS(on)}=10\text{V}, R_G=10\Omega, V_{DD}=30\text{V}$ |     | 32   |          | ns               |
| Rise time                           | $t_r$         |  |     | 310  |          | ns               |
| Turn-off delay time                 | $t_{off}$     |  |     | 98   |          | ns               |
| Fall time                           | $t_f$         |  |     | 100  |          | ns               |
| Total Gate Charge                   | $Q_G$         | $I_D=34\text{A}, V_{DD}=48\text{V}, V_{GS}=10\text{V}$                   |     | 39   |          | nC               |
| Gate to Source Charge               | $Q_{GS}$      |  |     | 7.0  |          | nC               |
| Gate to Drain Charge                | $Q_{GD}$      |  |     | 12   |          | nC               |