# 2SK767

## Silicon N-channel Power F-MOS FET

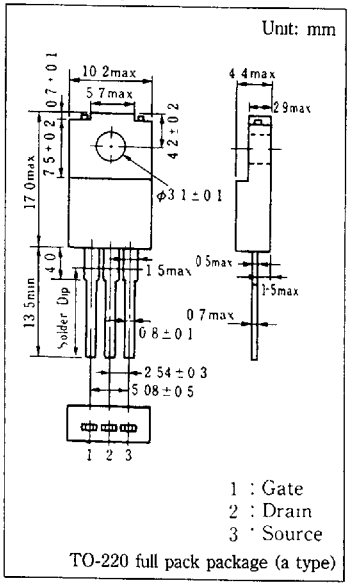
### ■ Features

- Low ON resistance $R_{DS}$ (on) : $R_{DS}$ (on) = 1.2Ω (typ.)
- High switching rate : $t_f$ = 50ns (typ.)
- No secondary breakdown
- High breakdown voltage

### ■ Application

- No contact relay
- Solenoid drive
- Motor drive
- Control equipment
- Switching power source

### ■ Package Dimensions



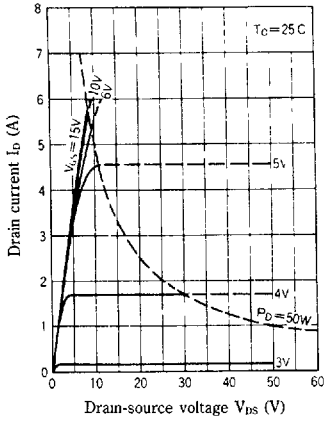

### ■ Absolute Maximum Ratings (Tc=25°C)

| Item | | Symbol | Value | Unit |
|---|---|---|---|---|
| Drain-source voltage | | $V_{DSS}$ | 500 | V |
| Gate-source voltage | | $V_{GSS}$ | ±20 | V |
| Drain current | DC | $I_D$ | 5 | A |
| | Peak to-peak value | $I_{DP}$ | 10 | |
| Power dissipation | Tc=25℃ | $P_D$ | 50 | W |
| | Ta=25℃ | | 2.0 | |
| Channel temperature | | $T_{ch}$ | 150 | ℃ |
| Storage temperature | | $T_{stg}$ | −55~+150 | ℃ |

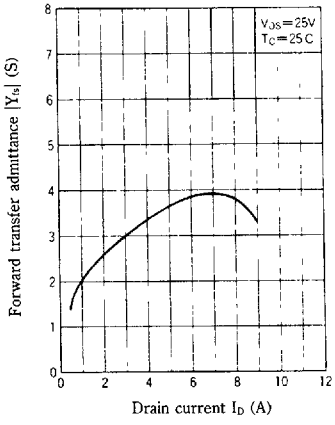
### ■ Electrical Characteristics (Tc=25°C)

| Item | Symbol | Condition | min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|
| Drain current | $I_{DSS}$ | $V_{DS}$=400V, $V_{GS}$=0 | | | 0.1 | mA |
| Gate-source current | $I_{GSS}$ | $V_{GS}$=±20V, $V_{DS}$=0 | | | ±1 | μA |
| Drain-source voltage | $V_{DSS}$ | $I_D$=1mA, $V_{GS}$=0 | 500 | | | V |
| Gate threshold voltage | $V_{th}$ | $V_{DS}$=25V, $I_D$=1mA | 1 | | 5 | V |
| Drain-source ON resistance | $R_{DS}$(on) | $V_{GS}$=10V, $I_D$=3A | | 1.2 | 1.8 | Ω |
| Forward transfer admittance | \| Yfs \| | $V_{DS}$=25V, $I_D$=3A | 1.8 | 3.0 | | S |
| Input capacitance | $C_{iss}$ | $V_{DS}$=20V, $V_{GS}$=0, f=1MHz | | 630 | | pF |
| Output capacitance | $C_{oss}$ | | | 120 | | pF |
| Reverse transfer capacitance | $C_{rss}$ | | | 50 | | pF |
| Turn-on time | $t_{on}$ | $V_{GS}$=10V, $I_D$=3A<br>$V_{DD}$=150V, $R_L$=50Ω | | 40 | | ns |
| Fall time | $t_f$ | | | 50 | | ns |
| Delay time | $t_{d(off)}$ | | | 120 | | ns |

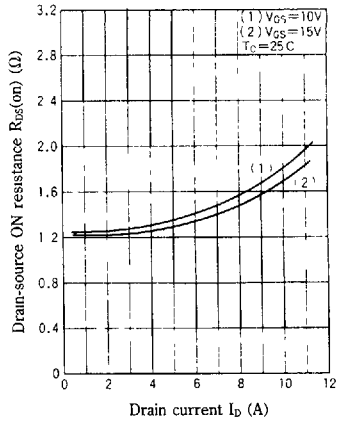
$I_D - V_{DS}$



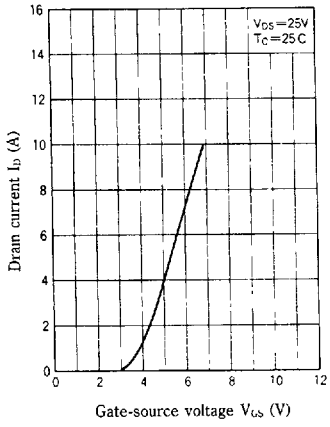

$|Y_{fs}| - I_D$



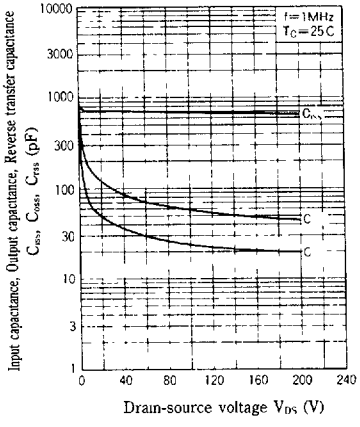

$R_{DS}(on) - I_D$



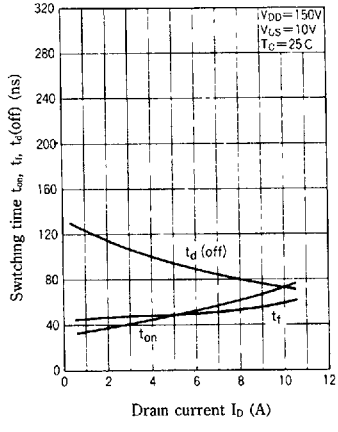

$I_D - V_{GS}$



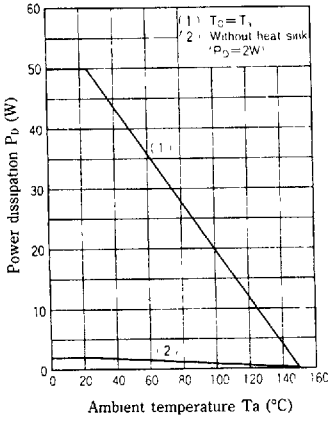

$C_{iss}$, $C_{oss}$, $C_{rss} - V_{DS}$



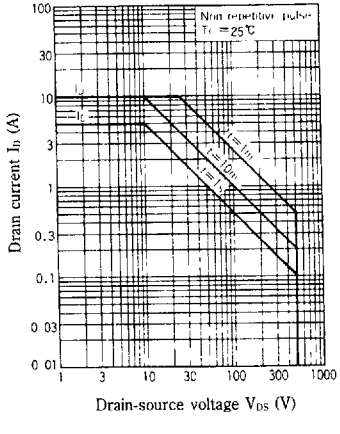

$t_{on}$, $t_f$, $t_d$(off) $- I_D$




$P_D - Ta$




Safety operation area (ASO)




$R_{DS}(on) - I_D$