# 2SK808, 2SK808A

## Silicon N-channel Power F-MOS FET

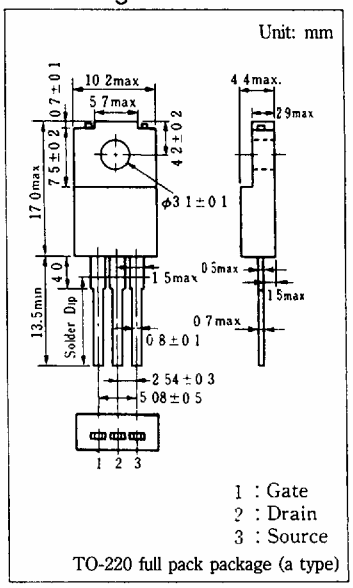
### ■ Features

- Low ON resistance $R_{DS}$ (on) : $R_{DS}$ (on) = 4.7Ω (typ.)
- High switching rate : $t_f$ = 40ns (typ.)
- No secondary breakdown
- High breakdown voltage

### ■ Application

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

### ■ Package Dimensions



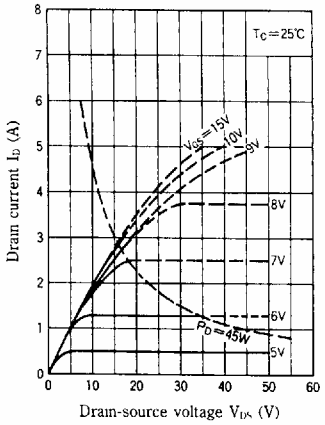

### ■ Absolute Maximum Ratings (Tc=25°C)

| Item | | Symbol | Value | Unit |
|---|---|---|---|---|
| Drain-source voltage | 2SK808 | $V_{DSS}$ | 800 | V |
| | 2SK808A | | 900 | |
| Gate-source voltage | | $V_{GSS}$ | ±20 | V |
| Drain current | DC | $I_D$ | 1 | A |
| | Peak-to-peak value | $I_{DP}$ | 3 | |
| Power dissipation | Tc=25℃ | $P_D$ | 45 | W |
| | Ta=25℃ | | 2.0 | |
| Channel temperature | | $T_{ch}$ | 150 | ℃ |
| Storage temperature | | $T_{stg}$ | −55~+150 | ℃ |

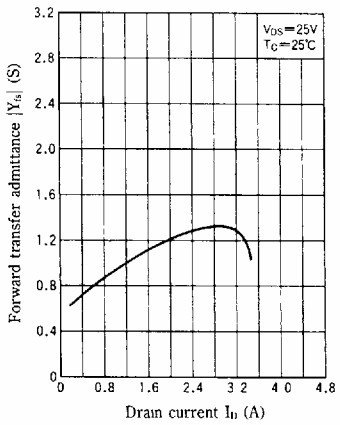
### ■ Electrical Characteristics (Tc=25°C)

| Item | | Symbol | Condition | min. | typ. | max. | Unit |
|---|---|---|---|---|---|---|---|
| Drain current | | $I_{DSS}$ | $V_{DS}$=640V, $V_{GS}$=0 | | | 0.1 | mA |
| Gate-source current | | $I_{GSS}$ | $V_{GS}$=±20V, $V_{DS}$=0 | | | ±1 | μA |
| Drain-source voltage | 2SK808 | $V_{DSS}$ | $I_D$= 1 mA, $V_{GS}$=0 | 800 | | | V |
| | 2SK808A | | | 900 | | | |
| Gate threshold voltage | | $V_{th}$ | $V_{DS}$=25V, $I_D$=1mA | 1 | | 5 | V |
| Drain-source ON resistance | | $R_{DS}$(on) | $V_{GS}$=10V, $I_D$=0.7A | | 4.7 | 7.0 | Ω |
| Forward transfer admittance | | \| Yfs \| | $V_{DS}$=25V, $I_D$=0.7A | 0.4 | 0.8 | | S |
| Input capacitance | | $C_{iss}$ | $V_{DS}$=20V, $V_{GS}$=0, f=1MHz | | 380 | | pF |
| Output capacitance | | $C_{oss}$ | | | 75 | | pF |
| Reverse transfer capacitance | | $C_{rss}$ | | | 35 | | pF |
| Turn-on time | | $t_{on}$ | $V_{GS}$=10V, $I_D$=0.7A<br>$V_{DD}$=200V, $R_L$=285Ω | | 35 | | ns |
| Fall time | | $t_f$ | | | 40 | | ns |
| Delay time | | $t_d$ (off) | | | 70 | | ns |

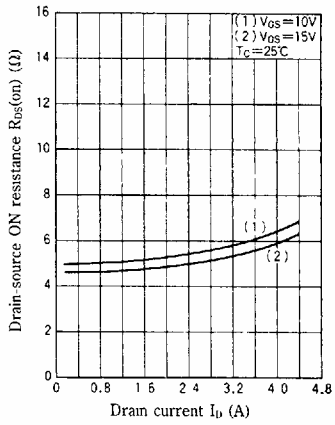
**$I_D - V_{DS}$**



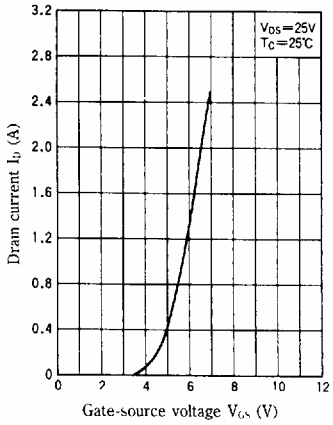

**$|Y_{fs}| - I_D$**



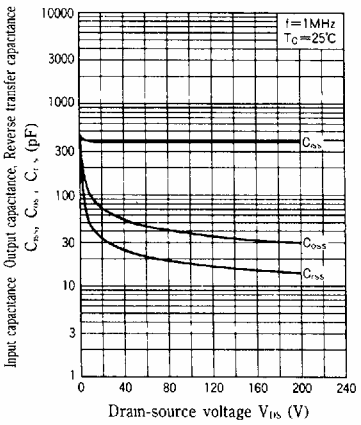

**$R_{DS}(on) - I_D$**



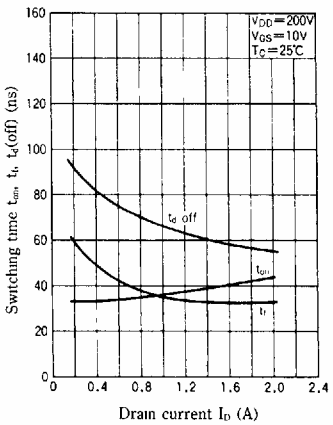

**$I_D - V_{GS}$**



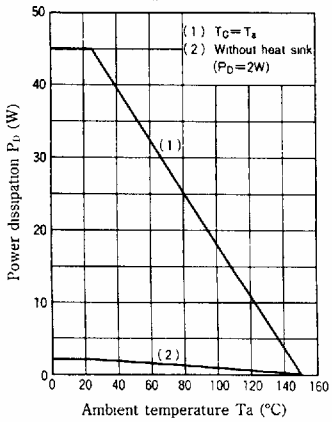

**$C_{iss}, C_{oss}, C_{rss} - V_{DS}$**



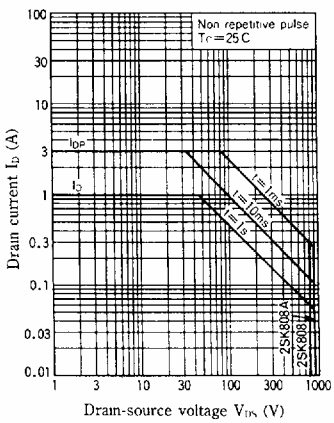

**$t_{on}, t_f, t_d(off) - I_D$**




**$P_D - Ta$**




**Safety operation area (ASO)**




**$R_{DS}(on) - I_D$**