# XN1872

## Silicon N-channel • Enhancement MOS FET

For switching

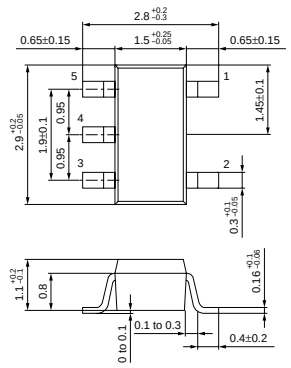
### Features

- Two elements incorporated into one package. (Source-coupled FETs)
- Reduction of the mounting area and assembly cost by one half.

### Basic Part Number of Element

- 2SK621 × 2 elements

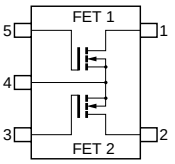
Unit: mm




1 : Drain (Tr1)
2 : Drain (Tr2)
3 : Gate (Tr2)
4 : Source
5 : Gate (Tr1)
EIAJ : SC–74A
Mini Type Pakage (5–pin)

Marking Symbol: 5U

Internal Connection




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

| Parameter | | Symbol | Ratings | Unit |
|---|---|---|---|---|
| Rating of element | Drain to source voltage | $V_{DSS}$ | 50 | V |
| | Gate to source voltage | $V_{GSO}$ | 8 | V |
| | Drain current | $I_D$ | 100 | mA |
| | | $I_{DM}$ | 200 | mA |
| Overall | Total power dissipation | $P_T$ | 300 | mW |
| | Channel temperature | $T_{ch}$ | 150 | ˚C |
| | Storage temperature | $T_{stg}$ | –55 to +150 | ˚C |

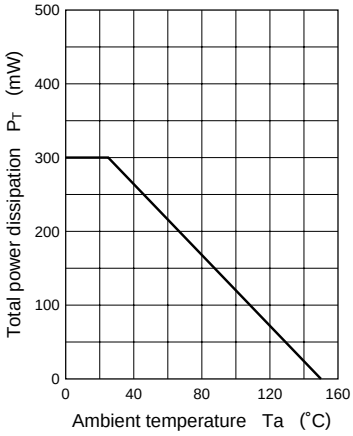
### Electrical Characteristics (Ta=25˚C)

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---|---|---|---|---|---|
| Drain to source voltage | $V_{DSS}$ | $I_D$ = 100µA, $V_{GS}$ = 0 | 50 | | | V |
| Drain current | $I_{DSS}$ | $V_{DS}$ = 10V, $V_{GS}$ = 0 | | | 10 | µA |
| Gate cutoff current | $I_{GSS}$ | $V_{GS}$ = 8V, $V_{DS}$ = 0 | 40 | | 80 | µA |
| Gate threshold voltage | $V_{th}$ | $I_D$ = 100µA, $V_{DS}$ = $V_{GS}$ | 1.5 | | 3.5 | V |
| Drain resistance | $R_{DS(on)}$ | $I_D$ = 20mA, $V_{GS}$ = 5V | | | 50 | Ω |
| Forward transfer admittance | $\|Y_{fs}\|$ | $I_D$ = 20mA, $V_{DS}$ = 5V, f = 1kHz | 20 | 30 | | mS |
| Output voltage high level | $V_{OH}$ | $V_{DS}$ = 5V, $V_{GS}$ = 1V, $R_L$ = 200Ω | 4.5 | | | V |
| Output voltage low level | $V_{OL}$ | $V_{DS}$ = 5V, $V_{GS}$ = 5V, $R_L$ = 200Ω | | | 1.0 | V |
| Input resistance | $R_1+R_2$ *1 | | 100 | | 200 | kΩ |
| Turn-on time | $t_{on}$ *2 | $V_{DD}$ = 5V, $V_{GS}$ = 0 to 5V, $R_L$ = 200Ω | | | 1.0 | µs |
| Turn-off time | $t_{off}$ *2 | $V_{DD}$ = 5V, $V_{GS}$ = 5 to 0V, $R_L$ = 200Ω | | | 1.0 | µs |
| Common source short-circuit input capacitance | $C_{iss}$ | $V_{DS}$ = 5V, $V_{GS}$ = 0, f = 1MHz | | 9 | 15 | pF |

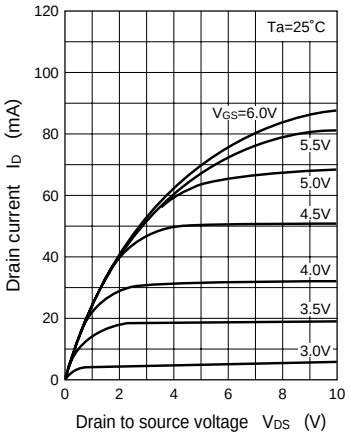
*1 Pulse measurement

*2 Resistance ratio $R_1/R_2$ = 1/50

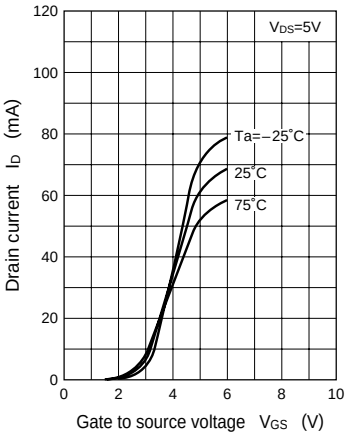
$P_T$ — Ta



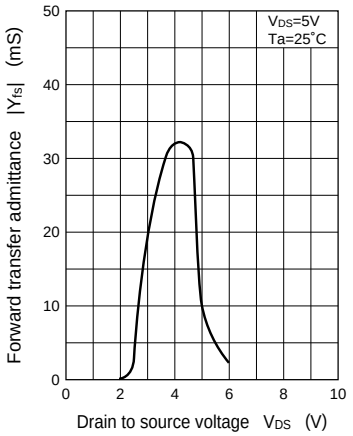

$I_D$ — $V_{DS}$



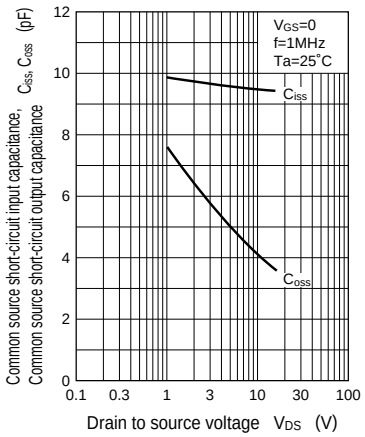

$I_D$ — $V_{GS}$



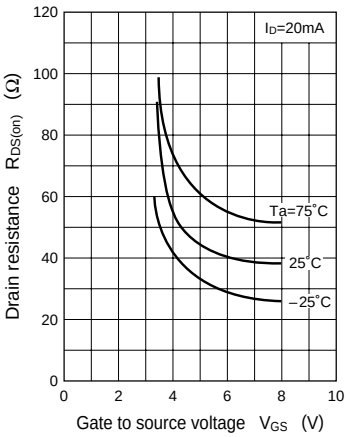

$|Y_{fs}|$ — $V_{DS}$




$C_{iss}$, $C_{oss}$ — $V_{DS}$




$R_{DS(ON)}$ — $V_{GS}$




$V_{IN}$ — $I_O$