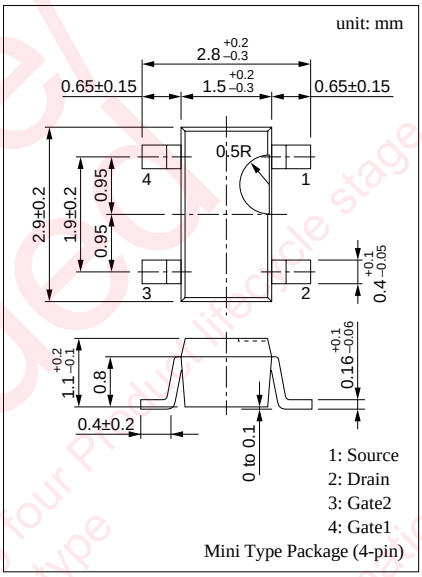
# 3SK227

## Silicon N-Channel 4-pin MOS FET

For VHF amplification




Marking Symbol: CX

### ■ Features

- Low noise-figure (NF)
- Large power gain PG
- Mini-type package, allowing downsizing of the sets and automatic insertion through the tape/magazine packing.

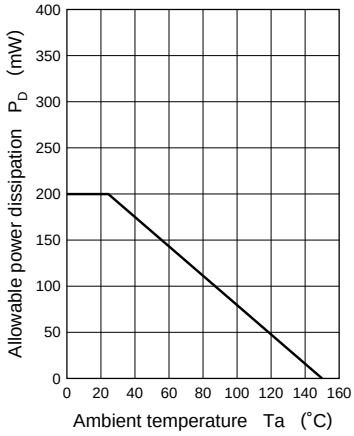
### ■ Absolute Maximum Ratings (Ta = 25°C)

| Parameter | Symbol | Ratings | Unit |
|---|---|---|---|
| Drain to Source voltage | $V_{DS}$ | 15 | V |
| Gate 1 to Source voltage | $V_{G1S}$ | ±8 | V |
| Gate 2 to Source voltage | $V_{G2S}$ | ±8 | V |
| Drain current | $I_D$ | ±30 | mA |
| Allowable power dissipation | $P_D$ | 200 | mW |
| Channel temperature | $T_{ch}$ | 150 | °C |
| Storage temperature | $T_{stg}$ | −55 to +150 | °C |

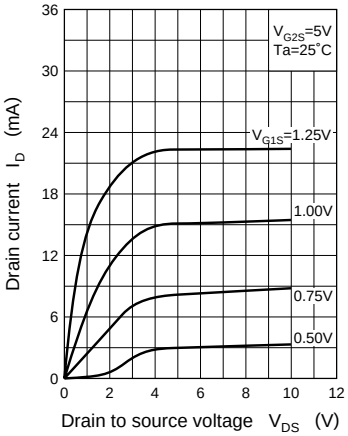
### ■ Electrical Characteristics (Ta = 25°C)

| Parameter | Symbol | Conditions | min | typ | max | Unit |
|---|---|---|---|---|---|---|
| Drain current | $I_{DS}$ | $V_{DS}$ = 10V, $V_{G1S}$ = 1V, $V_{G2S}$ = 5V | 6 | | 25 | mA |
| Gate 1 cut-off current | $I_{G1SS}$ | $V_{DS}$ = $V_{G2S}$ = 0, $V_{G1S}$ = ±8V | | | ±20 | nA |
| Gate 2 cut-off current | $I_{G2SS}$ | $V_{DS}$ = $V_{G1S}$ = 0, $V_{G2S}$ = ±8V | | | ±20 | nA |
| Drain to Source voltage | $V_{DSX}$ | $I_D$ = 50µA, $V_{G1S}$ = −5V, $V_{G2S}$ = 0 | 15 | | | V |
| Gate 1 to Source cut-off voltage | $V_{G1SC}$ | $V_{DS}$ = 10V, $V_{G2S}$ = 5V, $I_D$ = 100µA | −1.5 | | 1 | V |
| Gate 2 to Source cut-off voltage | $V_{G2SC}$ | $V_{DS}$ = 10V, $V_{G1S}$ = 5V, $I_D$ = 100µA | 0 | | 1 | V |
| Forward transfer admittance | $\lvert Y_{fs} \rvert$ | $V_{DS}$ = 10V, $I_D$ = 10mA, $V_{G2S}$ = 5V, f = 1kHz | 21 | 26 | 31 | mS |
| Input capacitance (Common Source) | $C_{iss}$ | $V_{DS}$ = 10V, $V_{G1S}$ = $V_{G2S}$ = −5V, f = 1MHz | | 2.8 | | pF |
| Output capacitance (Common Source) | $C_{oss}$ | | | 1.1 | | pF |
| Reverse transfer capacitance (Common Source) | $C_{rss}$ | | | 0.02 | | pF |
| Power gain | PG | $V_{DS}$ = 6V, $I_D$ = 8mA, $V_{G2S}$ = 4V, f = 790 to 810MHz (Sweep) | 18.5 | 20.5 | | dB |
| Noise figure | NF | | | 2.5 | 3.7 | dB |

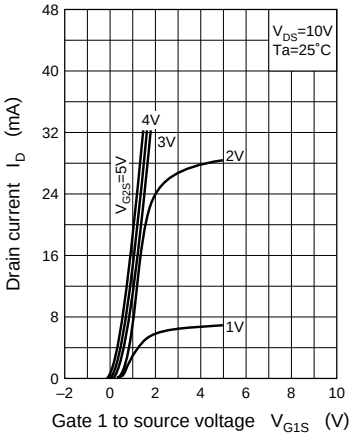
$P_D$ — Ta



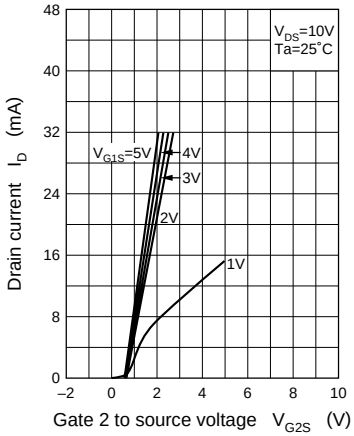

$I_D$ — $V_{DS}$



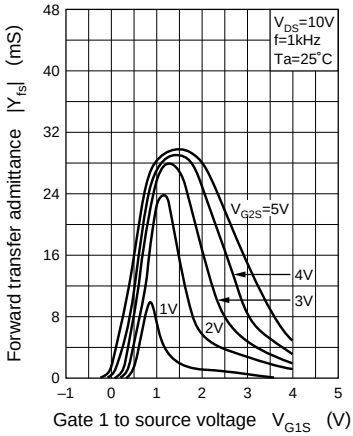

$I_D$ — $V_{G1S}$



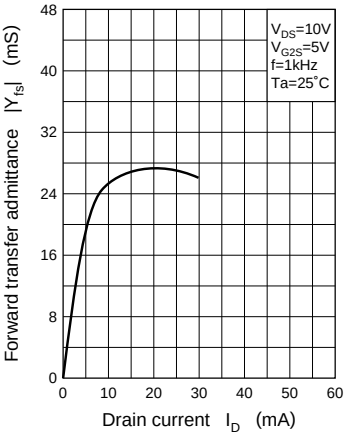

$I_D$ — $V_{G2S}$



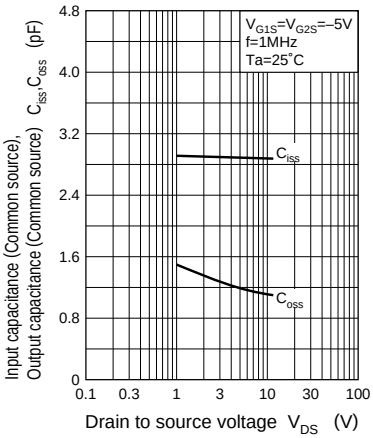

$|Y_{fs}|$ — $V_{G1S}$



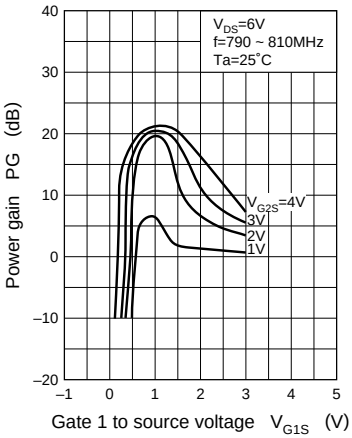

$|Y_{fs}|$ — $I_D$



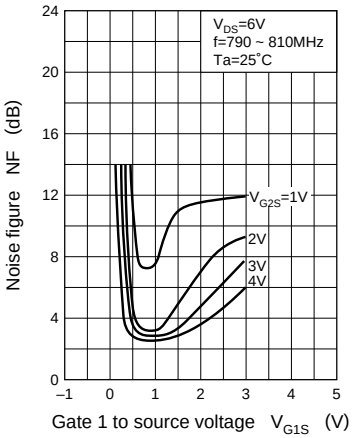

$C_{iss}$, $C_{oss}$ — $V_{DS}$



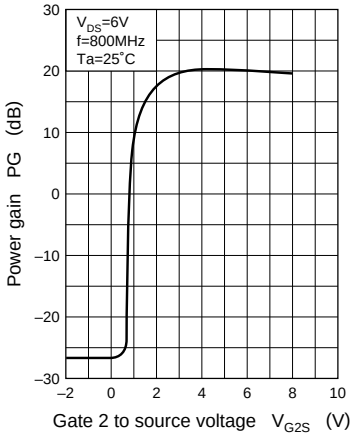

PG — $V_{G1S}$



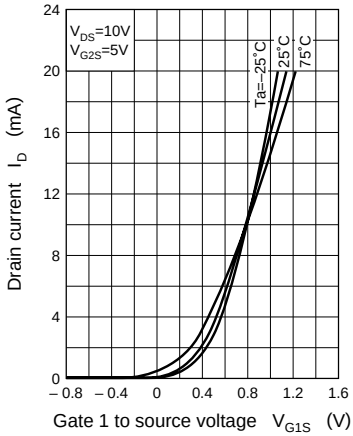

NF — $V_{G1S}$



PG — $V_{G2S}$




$I_D$ — $V_{G1S}$



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