Ordering number:EN4839A

N-Channel Junction Silicon FET

# 2SK2394

## Low-Noise HF Amplifier Applications

## Applications

· AM tuner RF amplifier.
· Low-noise amplifier.

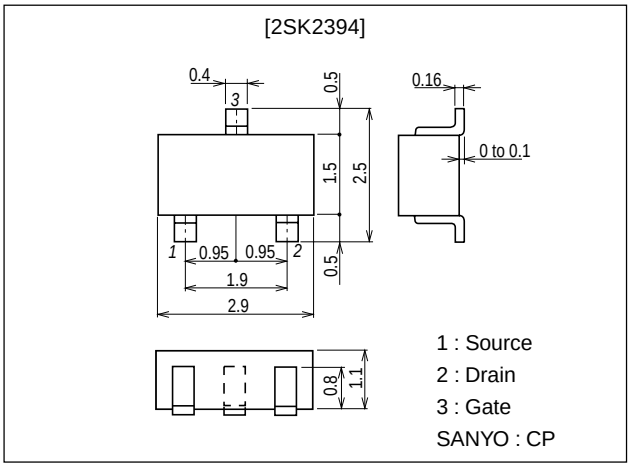
## Features

· Large $|y_{fs}|$.
· Small Ciss.
· Small-sized package permitting 2SK2394-applied sets to be made small slim.
· Ultralow noise figure.

## Package Dimensions

unit:mm

2050A




## Specifications

### Absolute Maximum Ratings at Ta = 25˚C

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Drain-to-Source Voltage | $V_{DSX}$ | | 15 | V |
| Gate-to-Drain Voltage | $V_{GDS}$ | | –15 | V |
| Gate Current | $I_G$ | | 10 | mA |
| Drain Current | $I_D$ | | 50 | mA |
| Allowable Power Dissipation | $P_D$ | | 200 | mW |
| Junction Temperature | Tj | | 150 | ˚C |
| Storage Temperature | Tstg | | –55 to +150 | ˚C |

### Electrical Characteristics at Ta = 25˚C

| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| | | | min | typ | max | |
| Gate-to-Drain Breakdown Voltage | $V_{(BR)GDS}$ | $I_G$=–10μA, $V_{DS}$=0 | –15 | | | V |
| Gate Cutoff Current | $I_{GSS}$ | $V_{GS}$=–10V, $V_{DS}$=0 | | | –1.0 | nA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$=5V, $I_D$=100μA | –0.3 | –0.7 | –1.5 | V |
| Drain Current | $I_{DSS}$ | $V_{DS}$=5V, $V_{GS}$=0 | 6.0* | | 32.0* | mA |
| Forward Transfer Admittance | $\|y_{fs}\|$ | $V_{DS}$=5V, $V_{GS}$=0, f=1kHz | 20 | 38 | | mS |
| Input Capacitance | Ciss | $V_{DS}$=5V, $V_{GS}$=0, f=1MHz | | 10.0 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=5V, $V_{GS}$=0, f=1MHz | | 2.9 | | pF |
| Noise Figure | NF | $V_{DS}$=5V, Rg=1kΩ, $I_D$=1mA, f=1kHz | | 1.0 | | dB |

* : The 2SK2394 is classified by $I_{DSS}$ as follows : (unit : mA)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 6.0 | 5 | 12.0 | 10.0 | 6 | 20.0 | 16.0 | 7 | 32.0 |

Marking : YJ
$I_{DSS}$ rank : 5, 6, 7

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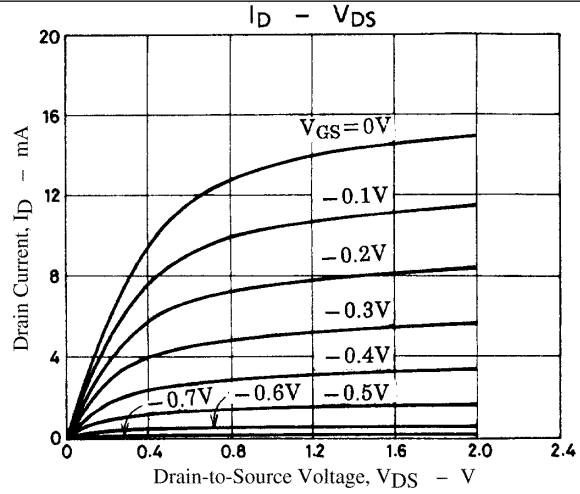
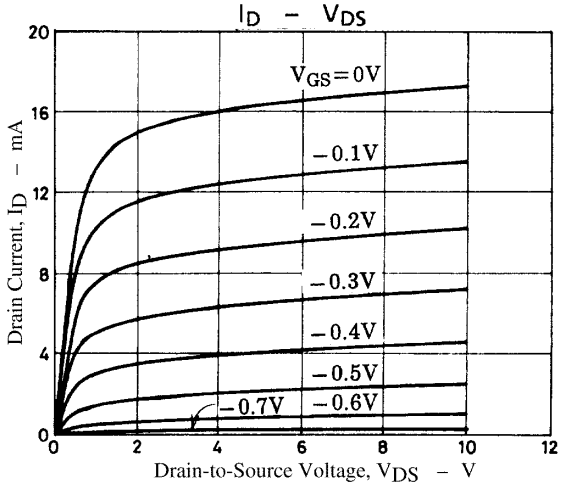
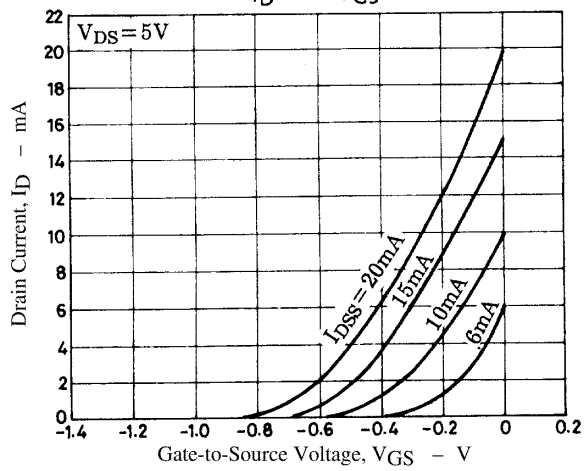
$I_D$ – $V_{DS}$



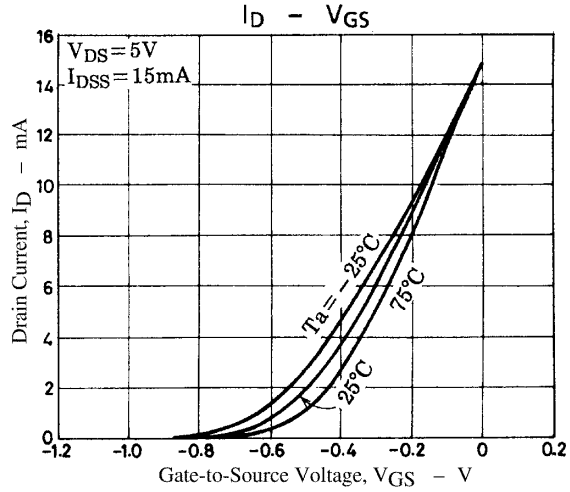

$I_D$ – $V_{DS}$



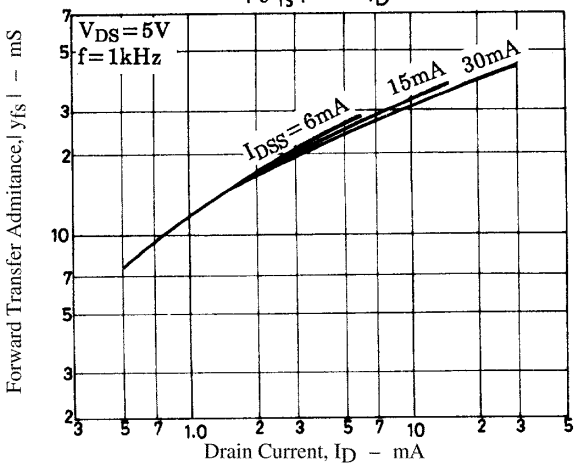

$I_D$ – $V_{GS}$



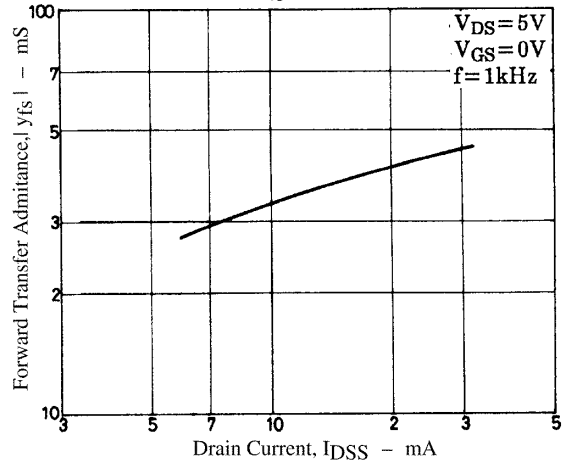

$I_D$ – $V_{GS}$



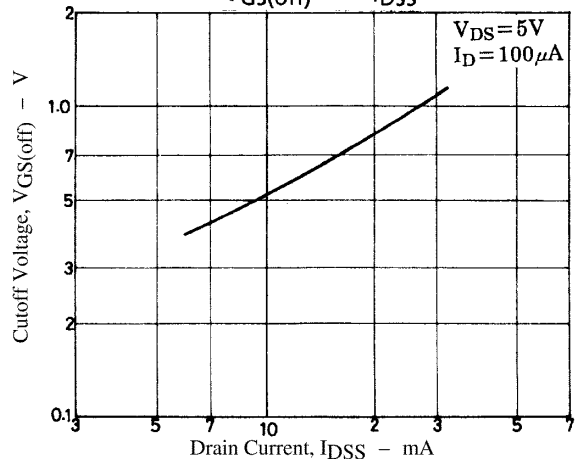

$|y_{fs}|$ – $I_D$




$|y_{fs}|$ – $I_{DSS}$




$V_{GS(off)}$ – $I_{DSS}$




Ciss – $V_{DS}$