Ordering number:ENN2746A

N-Channel Junction Silicon FET

# 2SK1065

## High-Frequency General-Purpose Amplifier Applications

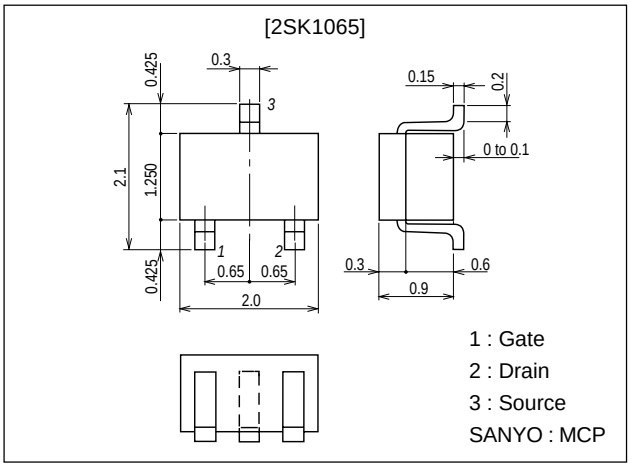
## Features

- Ultrasmall package facilitates miniaturization in end products.
- Small Crss (Crss=0.04pF typ).

## Package Dimensions

unit:mm

2057A




## Specifications

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

| Parameter | Symbol | Conditions | Ratings | Unit |
|---|---|---|---|---|
| Gate-to-Drain Voltage | $V_{GDO}$ | | –20 | V |
| Gate Current | $I_G$ | | 10 | mA |
| Drain Current | $I_D$ | | 20 | mA |
| Allowable Power Dissipation | $P_D$ | | 150 | 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 | $V_{(BR)GDO}$ | $I_G$=–10μA | –20 | | | V |
| Gate-to-Source Leakage Current | $I_{GSS}$ | $V_{GS}$=–0.5V, $V_{DS}$=0 | | | –10 | nA |
| Zero-Gate Voltage Drain Current | $I_{DSS}$ | $V_{DS}$=5V, $V_{GS}$=0 | 1.2* | | 12.0* | mA |
| Cutoff Voltage | $V_{GS(off)}$ | $V_{DS}$=5V, $I_D$=10μA | –0.4 | –1.3 | –2.5 | V |
| Forward Transfer Admittance | \| yfs \|1 | $V_{DS}$=5V, $V_{GS}$=0, f=1kHz | 2.4 | 6.0 | | mS |
| | \| yfs \|2 | $V_{DS}$=5V, $V_{GS}$=0, f=100MHz | 2.4 | 6.0 | | mS |

* : The 2SK1065 is classified by $I_{DSS}$ as follows (unit : mA) :

Continued on next page.

| $I_{DSS}$ rank | 3 | | | 4 | | | 5 | | |
|---|---|---|---|---|---|---|---|---|---|
| $I_{DSS}$ | 1.2 | to | 3.0 | 2.5 | to | 6.0 | 5.0 | to | 12.0 |

(Note) Marking : T
• For CP package version, use the 2SK242.



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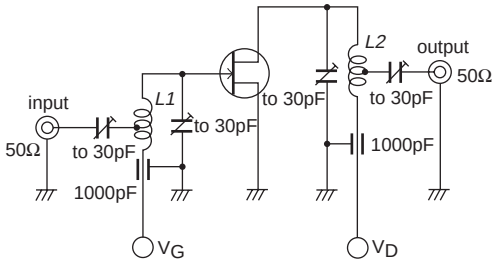
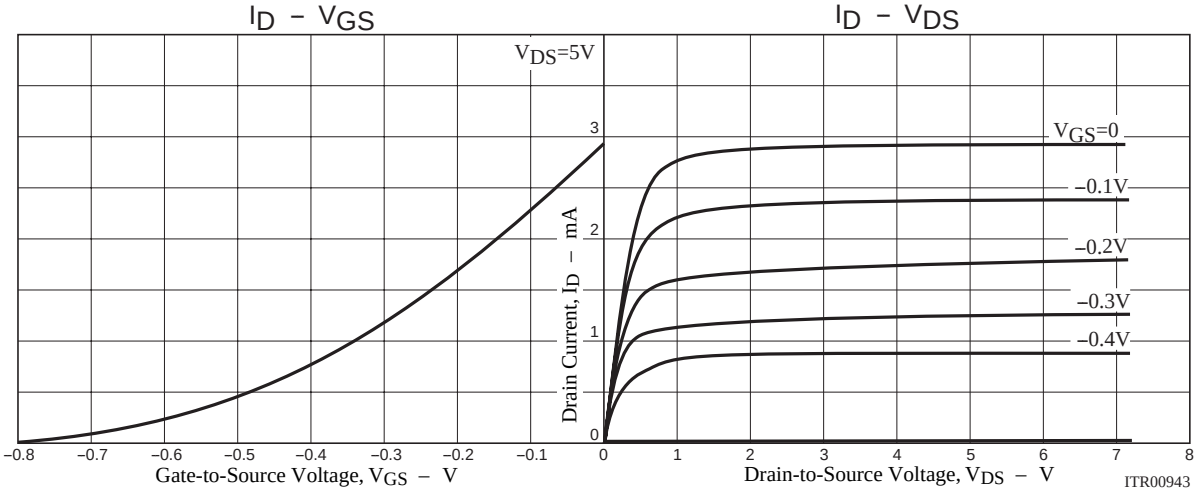
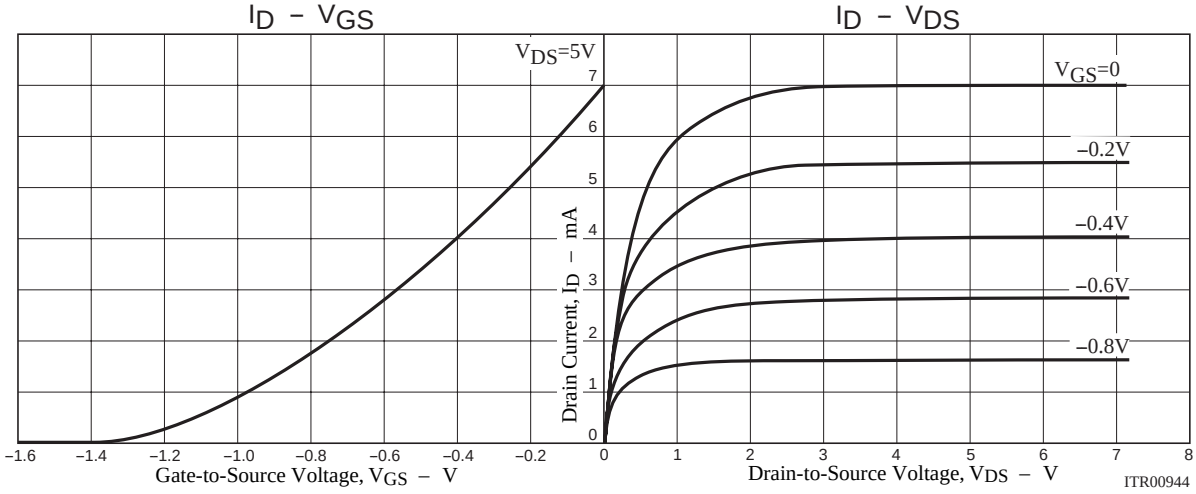
| Parameter | Symbol | Conditions | Ratings | | | Unit |
|---|---|---|---|---|---|---|
| Input Capacitance | Ciss | $V_{DS}$=5V, $V_{GS}$=0, f=1MHz | | 4.0 | | pF |
| Reverse Transfer Capacitance | Crss | $V_{DS}$=5V, $V_{GS}$=0, f=1MHz | | 0.04 | 0.15 | pF |
| Output Capacitance | Coss | $V_{DS}$=5V, $V_{GS}$=0, f=1MHz | | 4.0 | | pF |
| Power Gain | PG | $V_{DS}$=5V, $V_{GS}$=0, f=100MHz, See specified Test Circuit | | 24 | | dB |
| Noise Figure | NF | See specified Test Circuit | | 3.5 | 6.0 | dB |

## PG and NF Test Circuit

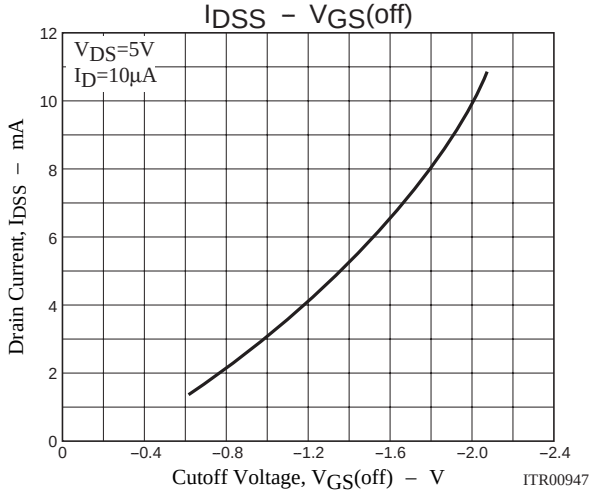



L1 : 1mm ϕ plated wire, 10mm ϕ 4T 18mm pitch, tapped at 1T from gate side
L2 : 1mm ϕ plated wire, 10mm ϕ 6T 10mm pitch, tapped at 1T from gate side

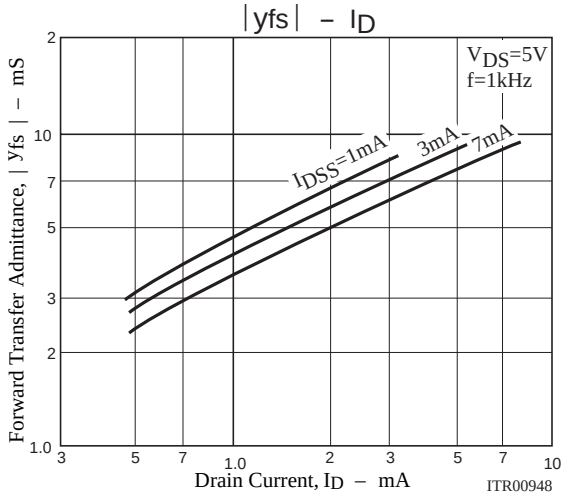


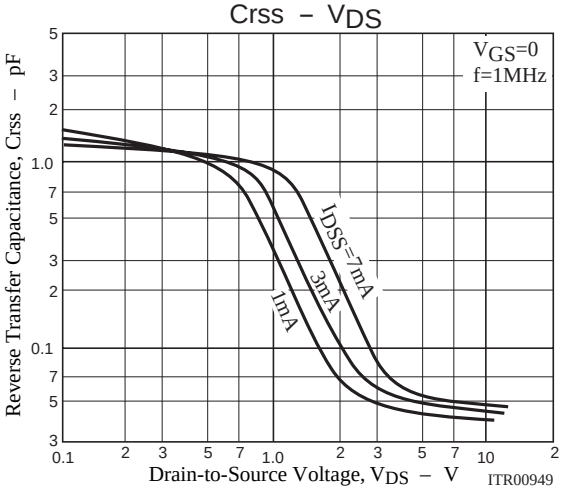
$I_{DSS}$ – $V_{GS(off)}$



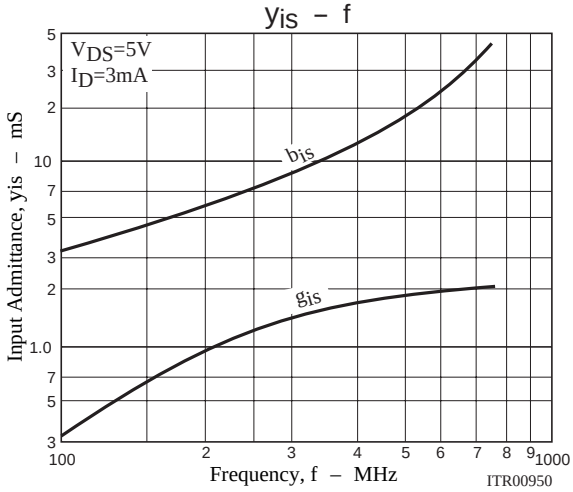

|yfs| – $I_D$



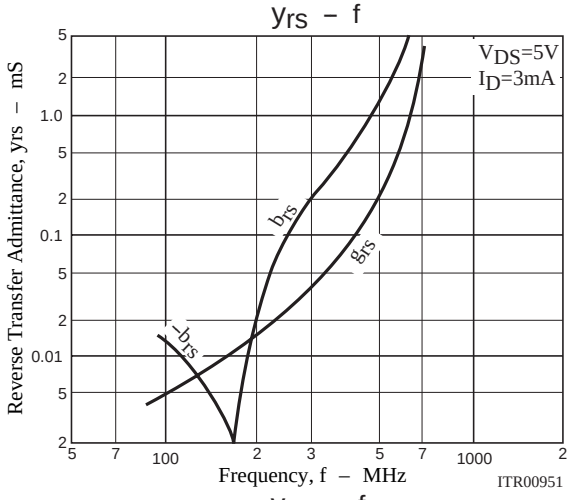

Crss – $V_{DS}$



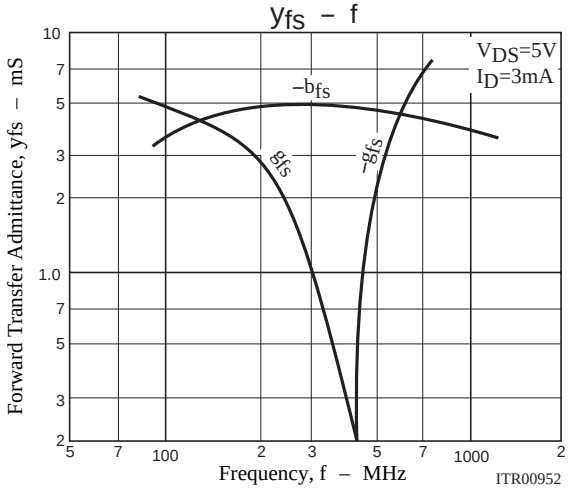

$y_{is}$ – f



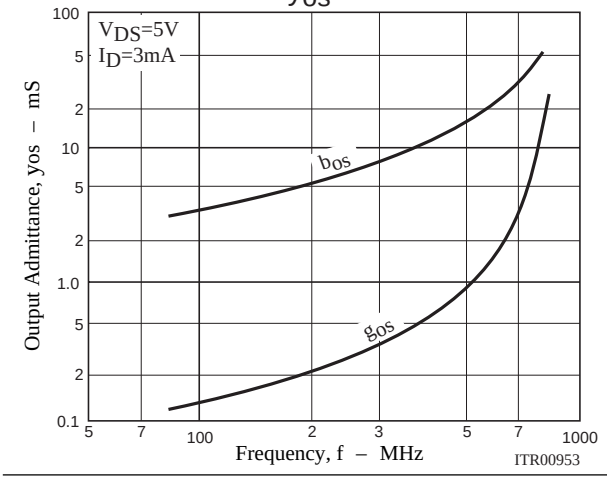

$y_{rs}$ – f




$y_{fs}$ – f




$y_{os}$ – f




$y_{is}$ – $I_D$