

## 2N5397, 2N5398

## N-Channel Silicon Junction Field-Effect Transistor

- Low-Noise
- High Power Gain
- High Transconductance
- Mixers
- Oscillators
- VHF Amplifiers

Absolute maximum ratings at  $T_A = 25^\circ\text{C}$ 

|  |           |
|--|-----------|
| Reverse Gate Source & Reverse Gate Drain Voltage | - 25 V    |
| Drain Source Voltage                             | 25 V      |
| Continuous Forward Gate Current                  | 10 mA     |
| Continuous Device Power Dissipation              | 300 mW    |
| Power Derating                                   | 1.7 mW/°C |

At 25°C free air temperature:

## Static Electrical Characteristics

|                                   |               | 2N5397 |       | 2N5398 |       | Unit          | Process NJ26L                                       |  |
|-----------------------------------|---------------|--------|-------|--------|-------|---------------|---|--|
|                                   |               | Min    | Max   | Min    | Max   |               | Test Conditions                                     |  |
| Gate Source Breakdown Voltage     | $V_{(BR)GSS}$ | - 25   |       | - 25   |       | V             | $I_G = - 1 \mu\text{A}, V_{DS} = \emptyset\text{V}$ |  |
| Gate Source Forward Voltage       | $V_{GS(F)}$   |        | 1     |        | 1     | V             | $I_G = 1 \text{ mA}, V_{DS} = \emptyset\text{V}$    |  |
| Gate Reverse Current              | $I_{GSS}$     |        | - 0.1 |        | - 0.1 | nA            | $V_{GS} = - 15\text{V}, V_{DS} = \emptyset\text{V}$ |  |
|                                   |               |        | - 0.1 |        | - 0.1 | $\mu\text{A}$ | $V_{GS} = - 15\text{V}, V_{DS} = \emptyset\text{V}$ |  |
| Gate Source Cutoff Voltage        | $V_{GS(OFF)}$ | - 1    | - 6   | - 1    | - 6   | V             | $V_{DS} = 10\text{V}, I_D = 1 \text{ nA}$           |  |
| Drain Saturation Current (Pulsed) | $I_{DSS}$     | 10     | 30    | 5      | 40    | mA            | $V_{DS} = 10\text{V}, V_{GS} = \emptyset\text{V}$   |  |

## Dynamic Electrical Characteristics

|  |            |     |     |     |     |    |   |                       |
|--|------------|-----|-----|-----|-----|----|---|-----------------------|
| Common Source Forward Transconductance     | $g_{fs}$   | 5.5 | 9   | 5   | 10  | mS | $V_{DG} = 10\text{V}, I_D = 10 \text{ mA}$        | $f = 450 \text{ MHz}$ |
| Common Source Forward Transfer Admittance  | $ Y_{fs} $ | 6   | 10  | 5.5 | 10  | mS | $V_{DS} = 10\text{V}, I_D = 10 \text{ mA}$        | $f = 1 \text{ kHz}$   |
| Common Source Output Conductance           | $ g_{os} $ |     | 0.4 |     | 0.5 | mS | $V_{DG} = 10\text{V}, I_D = 10 \text{ mA}$        | $f = 450 \text{ MHz}$ |
| Common Source Input Admittance             | $ Y_{os} $ |     | 0.2 |     | 0.4 | mS | $V_{DS} = 10\text{V}, I_D = 10 \text{ mA}$        | $f = 1 \text{ kHz}$   |
| Common Source Input Conductance            | $g_{is}$   |     | 2   |     | 3   | mS | $V_{DG} = 10\text{V}, I_D = 10 \text{ mA}$        | $f = 450 \text{ MHz}$ |
| Common Source Input Capacitance            | $C_{iss}$  |     | 5   |     | 5.5 | pF | $V_{DG} = 15\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1 \text{ kHz}$   |
| Common Source Reverse Transfer Capacitance | $C_{rss}$  |     | 1.2 |     | 1.3 | pF | $V_{DG} = 15\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1 \text{ kHz}$   |

## TO-72 Package

Dimensions in Inches (mm)

## Pin Configuration

1 Source, 2 Drain, 3 Gate, 4 Case

## Surface Mount

SMP5397, SMP5398



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