

## IF4500

## N-Channel Silicon Junction Field-Effect Transistor

## • Low-Noise, High Gain Amplifier

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

|  |                 |
|--|-----------------|
| Reverse Gate Source & Reverse Gate Drain Voltage | - 20 V          |
| Continuous Forward Gate Current                  | 10 mA           |
| Continuous Device Power Dissipation              | 225 mW          |
| Power Derating                                   | 1.8 mW/°C       |
| Storage Temperature Range                        | - 65°C to 200°C |

At 25°C free air temperature:

## Static Electrical Characteristics

|                                   |               | IF4500 |       | Process NJ450L |  |  |
|-----------------------------------|---------------|--------|-------|----------------|--|--|
|                                   |               | Min    | Max   | Unit           | Test Conditions                                    |  |
| Gate Source Breakdown Voltage     | $V_{(BR)GSS}$ | - 20   |       | V              | $I_G = -1 \mu\text{A}, V_{DS} = \emptyset\text{V}$ |  |
| Gate Reverse Current              | $I_{GSS}$     |        | - 0.1 | nA             | $V_{GS} = -30\text{V}, V_{DS} = \emptyset\text{V}$ |  |
| Gate Source Cutoff Voltage        | $V_{GS(OFF)}$ | - 0.35 | - 1.5 | V              | $V_{DS} = 15\text{V}, I_D = 0.5 \text{ nA}$        |  |
| Drain Saturation Current (Pulsed) | $I_{DSS}$     | 5      |       | mA             | $V_{DS} = 15\text{V}, V_{GS} = \emptyset\text{V}$  |  |

## Dynamic Electrical Characteristics

|  |           |    |    |    |   |                     |
|--|-----------|----|----|----|---|---------------------|
| Common Source Forward Transconductance     | $g_{fs}$  | 15 |    | mS | $V_{DS} = 15\text{V}, I_D = 5 \text{ mA}$         | $f = 1 \text{ kHz}$ |
| Common Source Input Capacitance            | $C_{iss}$ |    | 35 | pF | $V_{DS} = 15\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1 \text{ MHz}$ |
| Common Source Reverse Transfer Capacitance | $C_{rss}$ |    | 8  | pF | $V_{DS} = 15\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1 \text{ MHz}$ |

## Typ

|  |             |     |  |                        |   |                     |
|--|-------------|-----|--|------------------------|---|---------------------|
| Equivalent Short Circuit Input Noise Voltage | $\bar{e}_N$ | 1.5 |  | nV/ $\sqrt{\text{Hz}}$ | $V_{DS} = 12\text{V}, V_{GS} = \emptyset\text{V}$ | $f = 1 \text{ kHz}$ |
|--|-------------|-----|--|------------------------|---|---------------------|

## TO-236AB Package

Dimensions in Inches (mm)

## Pin Configuration

1 Drain, 2 Source, 3 Gate



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