

## Linear Systems replaces discontinued LF5301 and PF5301

### The 2N5301 is a very High Input Impedance N-Channel JFET amplifier

The 2N5301 N-channel JFET is designed to provide performance amplification at low frequencies and with low noise.

#### 2N5301 Benefits:

- Insignificant Signal Loss/Error Voltage with High-Impedance Source
- Maximum Signal Output, Low Noise
- High Sensitivity to Low-Level Signals

#### 2N5301 Applications:

- High-Impedance Transducer
- Smoke Detector Input
- Infrared Detector Amplifier
- Precision Test Equipment

#### FEATURES

DIRECT REPLACEMENT FOR LF5301 & PF5301

HIGH INPUT IMPEDANCE  $I_G = 0.100 \text{ pA}$

HIGH GAIN  $g_{fs} = 70 \text{ }\mu\text{S}$

#### ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

#### Maximum Temperatures

Storage Temperature  $-65^\circ\text{C}$  to  $+175^\circ\text{C}$

Operating Junction Temperature  $-65^\circ\text{C}$  to  $+150^\circ\text{C}$

#### Maximum Power Dissipation

Continuous Power Dissipation 300mW

#### MAXIMUM CURRENT

Gate Current (Note 1) 50mA

#### MAXIMUM VOLTAGES

Gate to Drain or Gate to Source -30V

#### 2N5301 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

| SYMBOL        | CHARACTERISTIC                    | MIN | TYP. | MAX | UNITS   | CONDITIONS                               |
|---------------|-----------------------------------|-----|------|-----|---------|--|
| $BV_{GSS}$    | Gate to Source Breakdown Voltage  | -30 | --   | --  | V       | $V_{DS} = 0V, I_D = -1\mu A$             |
| $V_{GS(off)}$ | Gate to Source Cutoff Voltage     | 0.6 | --   | 3.0 | V       | $V_{DS} = 10V, I_D = 1nA$                |
| $I_{GSS}$     | Gate Leakage Current              | --  | --   | -1  | pA      | $V_{DG} = 0V, V_{GS} = -15V$             |
| $I_G$         | Gate Operating Current            | --  | 0.04 | --  |         | $V_{DG} = 6V, I_D = 5\mu A$              |
| $I_{DSS}$     | Gate to Source Saturation Current | 30  | --   | 500 | $\mu A$ | $V_{DS} = 10V, V_{GS} = 0V$              |
| $g_{fs}$      | Forward Transconductance          | 70  | --   | 300 | $\mu S$ | $V_{DS} = 10V, V_{GS} = 0V, f = 1kHz$    |
| $C_{iss}$     | Input Capacitance                 | --  | --   | 3   | pF      | $V_{DS} = 10V, V_{GS} = 0V, f = 1MHz$    |
| $C_{rss}$     | Reverse Transfer Capacitance      | --  | --   | 1.5 |         |  |
| $e_n$         | Equivalent Input Noise Voltage    | --  | 45   | 150 | nV/VHz  | $V_{DG} = 10V, I_D = 50\mu A, f = 100Hz$ |

#### NOTES

1. Absolute maximum ratings are limiting values above which 2N5301 serviceability may be impaired.

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Available Packages:

2N5301 in TO-72

2N5301 in bare die.

Please contact Micross for full package and die dimensions

TO-72 (Bottom View)

