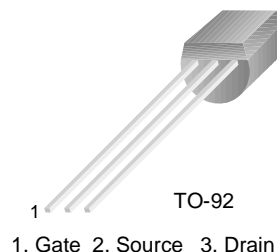


## 2N5952

2N5952

### N-Channel RF Amplifier

- This device is designed primarily for electronic switching applications such as low on resistance analog switching.
- Sourced from process 50.



### Absolute Maximum Ratings \* $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol         | Parameter  | Value      | Units            |
|----------------|--|------------|------------------|
| $V_{DG}$       | Drain-Gate Voltage                               | 30         | V                |
| $V_{GS}$       | Gate-Source Voltage                              | -30        | V                |
| $I_{GF}$       | Forward Gate Current                             | 10         | mA               |
| $T_J, T_{STG}$ | Operating and Storage Junction Temperature Range | -55 ~ +150 | $^\circ\text{C}$ |

\* These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

#### NOTES:

1. These ratings are based on a maximum junction temperature of 150 degrees C.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

### Electrical Characteristics $T_C=25^\circ\text{C}$ unless otherwise noted

| Symbol                              | Parameter                         | Test Condition  | Min. | Typ. | Max. | Units            |
|-------------------------------------|-----------------------------------|---|------|------|------|------------------|
| <b>Off Characteristics</b>          |                                   |   |      |      |      |                  |
| $V_{(BR)GSS}$                       | Gate-Source Breakdown Voltage     | $V_{DS} = 0, I_G = -1.0\mu\text{A}$                               | -30  |      |      | V                |
| $I_{GSS}$                           | Gate Reverse Current              | $V_{GS} = -15\text{V}, V_{DS} = 0$                                |      |      | -1.0 | nA               |
| $V_{GS(off)}$                       | Gate-Source Cutoff Voltage        | $V_{DS} = 15\text{V}, I_D = 100\text{nA}$                         | -1.3 |      | -3.5 | V                |
| <b>On Characteristics</b>           |                                   |   |      |      |      |                  |
| $I_{DSS}$                           | Zero-Gate Voltage Drain Current * | $V_{DS} = 15\text{V}, V_{GS} = 0$                                 | 4.0  |      | 8.0  | mA               |
| <b>Small Signal Characteristics</b> |                                   |   |      |      |      |                  |
| $g_{fs}$                            | Forward Transfer Conductance      | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{kHz}$              | 2000 |      | 6500 | $\mu\text{mhos}$ |
| $g_{os}$                            | Output Conductance                | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 100\text{MHz}$              |      |      | 75   | $\mu\text{mhos}$ |
| $C_{iss}$                           | Input Capacitance                 | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{MHz}$              |      |      | 6.0  | pF               |
| $C_{rss}$                           | Reverse Transfer Capacitance      | $V_{DS} = 15\text{V}, V_{GS} = 0, f = 1.0\text{MHz}$              |      |      | 2.0  | pF               |
| NF                                  | Noise Figure                      | $V_{DS} = 15\text{V}, R_G = 1.0\text{k}\Omega, f = 1.0\text{kHz}$ |      |      | 2.0  | dB               |

\* Pulse Test: Pulse Width  $\leq 300\text{ms}$ , Duty Cycle  $\leq 1.0\%$

### Thermal Characteristics $T_A=25^\circ\text{C}$ unless otherwise noted

| Symbol          | Parameter   | Max.       | Units                      |
|-----------------|---|------------|----------------------------|
| $P_D$           | Total Device Dissipation<br>Derate above $25^\circ\text{C}$ | 350<br>2.8 | mW<br>mW/ $^\circ\text{C}$ |
| $R_{\theta JC}$ | Thermal Resistance, Junction to Case                        | 125        | $^\circ\text{C/W}$         |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient                     | 357        | $^\circ\text{C/W}$         |

# Package Dimensions

2N5952

## TO-92



Dimensions in Millimeters

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