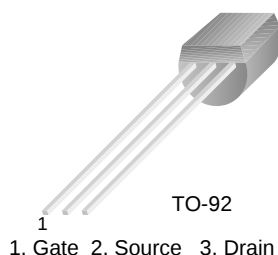


# 2N5950

## 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\* $T_a=25^\circ\text{C}$ 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 | $^\circ\text{C}$ |

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

#### NOTES:

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

### 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        | $^\circ\text{C/W}$         |

**Electrical Characteristics\***  $T_a=25^\circ\text{C}$  unless otherwise noted

| Symbol | Parameter | Test Condition | Min. | Max. | Units |
|--------|-----------|----------------|------|------|-------|
|--------|-----------|----------------|------|------|-------|

**Off Characteristics**

|               |                               |                                                                                          |      |              |          |
|---------------|-------------------------------|------------------------------------------------------------------------------------------|------|--------------|----------|
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_G = 1.0\mu\text{A}$ , $V_{DS} = 0$                                                    | -30  |              | V        |
| $I_{GSS}$     | Gate Reverse Current          | $V_{GS} = 25\text{V}$ , $V_{DS} = 0$ , $T = 25^\circ\text{C}$<br>$T = 100^\circ\text{C}$ |      | -1.0<br>-200 | nA<br>nA |
| $V_{GS(off)}$ | Gate-Source Cut-off Voltage   | $V_{DS} = 15\text{V}$ , $I_D = 100\text{nA}$                                             | -2.5 | -6.0         | V        |
| $V_{GS(f)}$   | Gate-Source Forward Voltage   | $I_G = 1.0\text{mA}$                                                                     |      | 1.0          | V        |
| $V_{GS}$      | Gate-Source Forward Voltage   | $V_{DS} = 15\text{V}$ , $I_D = 1\text{mA}$                                               | -1.8 | -5.0         | V        |

**On Characteristics**

|              |                                   |                                              |    |     |          |
|--------------|-----------------------------------|----------------------------------------------|----|-----|----------|
| $*I_{DSS}$   | Zero-Gate Voltage Drain Current * | $V_{DS} = 15\text{V}$ , $V_{GS} = 0$         | 10 | 15  | mA       |
| $R_{DS(on)}$ | Drain-Source On Resistance        | $I_D = 476\mu\text{A}$ , $f = 1.0\text{kHz}$ |    | 210 | $\Omega$ |

**Small Signal Characteristics**

|           |                              |                                                                                                                                        |              |      |              |
|-----------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------|--------------|------|--------------|
| $g_{fs}$  | Forward Transferconductance  | $V_{DS} = 15\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 100\text{MHz}$<br>$V_{DS} = 15\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1\text{kHz}$ | 3000<br>3500 | 7500 | $\mu/\Omega$ |
| $C_{iss}$ | Input Capacitance            | $V_{DS} = 15\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1.0\text{MHz}$                                                                     |              | 6    | pF           |
| $C_{rss}$ | Reverse Transfer Capacitance | $V_{DS} = 15\text{V}$ , $V_{GS} = 0\text{V}$ , $f = 1.0\text{MHz}$                                                                     |              | 2    | pF           |

\* Pulse Test: Pulse Width  $\leq 300\mu\text{s}$ , Duty Cycle = 2%

## TRADEMARKS

The following are registered and unregistered trademarks and service marks Fairchild Semiconductor owns or is authorized to use and is not intended to be an exhaustive list of all such trademarks.

|                                      |                                                                                   |                                        |                                  |
|--------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------|----------------------------------|
| ACEX <sup>®</sup>                    | Green FPS <sup>™</sup>                                                            | Power247 <sup>®</sup>                  | SuperSOT <sup>™</sup> -8         |
| Build it Now <sup>™</sup>            | Green FPS <sup>™</sup> e-Series <sup>™</sup>                                      | POWEREDGE <sup>®</sup>                 | SyncFET <sup>™</sup>             |
| CorePLUS <sup>™</sup>                | GTO <sup>™</sup>                                                                  | Power-SPM <sup>™</sup>                 | The Power Franchise <sup>®</sup> |
| CROSSVOLT <sup>™</sup>               | i-Lo <sup>™</sup>                                                                 | PowerTrench <sup>®</sup>               | the power franchise              |
| CTL <sup>™</sup>                     | IntelliMAX <sup>™</sup>                                                           | Programmable Active Droop <sup>™</sup> | TinyBoost <sup>™</sup>           |
| Current Transfer Logic <sup>™</sup>  | ISOPLANAR <sup>™</sup>                                                            | QFET <sup>®</sup>                      | TinyBuck <sup>™</sup>            |
| EcoSPARK <sup>®</sup>                | MegaBuck <sup>™</sup>                                                             | QS <sup>™</sup>                        | TinyLogic <sup>®</sup>           |
| F <sup>®</sup>                       | MICROCOUPLER <sup>™</sup>                                                         | QT Optoelectronics <sup>™</sup>        | TINYOPTO <sup>™</sup>            |
| Fairchild <sup>®</sup>               | MicroFET <sup>™</sup>                                                             | Quiet Series <sup>™</sup>              | TinyPower <sup>™</sup>           |
| Fairchild Semiconductor <sup>®</sup> | MicroPak <sup>™</sup>                                                             | RapidConfigure <sup>™</sup>            | TinyPWM <sup>™</sup>             |
| FACT Quiet Series <sup>™</sup>       | Motion-SPM <sup>™</sup>                                                           | SMART START <sup>™</sup>               | TinyWire <sup>™</sup>            |
| FACT <sup>®</sup>                    | OPTOLOGIC <sup>®</sup>                                                            | SPM <sup>®</sup>                       | μSerDes <sup>™</sup>             |
| FAST <sup>®</sup>                    | OPTOPLANAR <sup>®</sup>                                                           | STEALTH <sup>™</sup>                   | UHC <sup>®</sup>                 |
| FastvCore <sup>™</sup>               |  | SuperFET <sup>™</sup>                  | UniFET <sup>™</sup>              |
| FPS <sup>™</sup>                     | PDP-SPM <sup>™</sup>                                                              | SuperSOT <sup>™</sup> -3               | VCX <sup>™</sup>                 |
| FRFET <sup>®</sup>                   | Power220 <sup>®</sup>                                                             | SuperSOT <sup>™</sup> -6               |                                  |
| Global Power Resource <sup>SM</sup>  |                                                                                   |                                        |                                  |

## DISCLAIMER

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION, OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS. THESE SPECIFICATIONS DO NOT EXPAND THE TERMS OF FAIRCHILD'S WORLDWIDE TERMS AND CONDITIONS, SPECIFICALLY THE WARRANTY THEREIN, WHICH COVERS THESE PRODUCTS.

## LIFE SUPPORT POLICY

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF FAIRCHILD SEMICONDUCTOR CORPORATION.

As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

## PRODUCT STATUS DEFINITIONS

### Definition of Terms

| Datasheet Identification | Product Status         | Definition                                                                                                                                                                                               |
|--------------------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Advance Information      | Formative or In Design | This datasheet contains the design specifications for product development. Specifications may change in any manner without notice.                                                                       |
| Preliminary              | First Production       | This datasheet contains preliminary data; supplementary data will be published at a later date. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design. |
| No Identification Needed | Full Production        | This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve design.                                                   |
| Obsolete                 | Not In Production      | This datasheet contains specifications on a product that has been discontinued by Fairchild semiconductor. The datasheet is printed for reference information only.                                      |

Rev. 130

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный)

Email: [org@lifeelectronics.ru](mailto:org@lifeelectronics.ru)

[www.lifeelectronics.ru](http://www.lifeelectronics.ru)