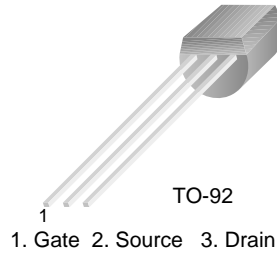


# 2N5951

## 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	350	mW
	Derate above $25^\circ\text{C}$	2.8	$\text{mW}/^\circ\text{C}$
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	$^\circ\text{C}/\text{W}$
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	$^\circ\text{C}/\text{W}$

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

Symbol	Parameter	Test Condition	Min.	Max.	Units
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**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	$V_{GS} = 15\text{V}, V_{DS} = 0, T = 25^\circ\text{C}$ $T = 100^\circ\text{C}$		-1.0 -200	nA
$V_{GS(off)}$	Gate-Source Cut-off Voltage	$V_{DS} = 15\text{V}, I_D = 100\text{nA}$	-2	-5	V
$V_{GS}$	Gate-Source Forward Voltage	$V_{DS} = 15\text{V}, I_D = 700\mu\text{A}$	-1.3	-4.5	V

**On Characteristics**

$*I_{DSS}$	Zero-Gate Voltage Drain Current *	$V_{DS} = 15\text{V}, V_{GS} = 0$	7	13	mA
$R_{DS(on)}$	Drain-Source On Resistance	$I_D = 400\mu\text{A}, f = 1.0\text{kHz}$		250	$\Omega$

**Small Signal Characteristics**

$g_{oss}$	Common- Source Output Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{kHz}$		75	$\mu/\Omega$
$g_{os}$	Output Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}, f = 100\text{MHz}$		100	$\mu/\Omega$
$g_{is}$	Input Conductance	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}, f = 100\text{MHz}$		250	$\mu/\Omega$
$C_{iss}$	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
$e_n$	Equivalent Short-Circuit Input Noise Voltage	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}, f = 1.0\text{kHz}$		100	nV
NF	Noise Figure	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V},$ $R_G = 1.0\text{m}\Omega, f = 1.0\text{kHz}$ $R_G = 1.0\text{k}\Omega, f = 100\text{MHz}$		2 5	dB

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



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