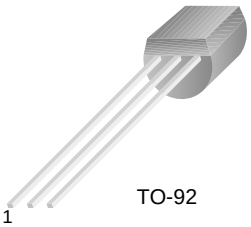
FAIRCHILD SEMICONDUCTOR®

September 2007

2N5953
N-Channel RF Amplifier

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



TO-92

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1. Gate 2. Source 3. Drain

Absolute Maximum Ratings* T_a=25°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	°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°C unless otherwise noted

Symbol	Parameter	Max.	Units
P_D	Total Device Dissipation Derate above 25°C	350 2.8	mW mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125	°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	°C/W

Electrical Characteristics* T_a=25°C unless otherwise noted

Symbol	Parameter	Test Condition	Min.	Max.	Units
Off Characteristics					
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	I_G = 1.0μA, V_{DS} = 0	-30		V
I_{GSS}	Gate Reverse Current	V_{GS} = 15V, V_{DS} = 0, T = 25°C T = 100°C		-1.0 -200	nA
$V_{GS(off)}$	Gate-Source Cut-off Voltage	V_{DS} = 15V, I_D = 100nA	-0.8	-3.0	V
V_{GS}	Gate-Source Forward Voltage	V_{DS} = 15V, I_D = 250μA	-0.5	-2.5	V
On Characteristics					
I_{DSS}	Zero-Gate Voltage Drain Current *	V_{DS} = 15V, V_{GS} = 0	2.5	5	mA
V_{DS}(on)	Drain-Source On Voltage	I_D = 267μA		0.1	V
Small Signal Characteristics					
g_{fs}	Forward Transferconductance	V_{DS} = 15V, V_{GS} = 0V, f = 100MHz	1000	6500	μ/Ω
g_{oss}	Common- Source Output Conductance	V_{DS} = 15V, V_{GS} = 0V, f = 1.0kHz		50	μ/Ω
g_{os}	Output Conductance	V_{DS} = 15V, V_{GS} = 0V, f = 100MHz		50	μ/Ω
g_{is}	Input Conductance	V_{DS} = 15V, V_{GS} = 0V, f = 100MHz		250	μ/Ω
C_{iss}	Input Capacitance	V_{DS} = 15V, V_{GS} = 0V, f = 1.0MHz		6	pF
C_{rss}	Reverse Transfer Capacitance	V_{DS} = 15V, V_{GS} = 0V, f = 1.0MHz		2	pF
e_n	Equivalent Short-Circuit Input Noise Voltage	V_{DS} = 15V, V_{GS} = 0V, f = 1.0kHz		100	nV
NF	Noise Figure	V_{DS} = 15V, V_{GS} = 0V, R_G = 1.0mΩ, f = 1.0kHz R_G = 1.0kΩ, f = 100MHz		2 5	dB

* Pulse Test: Pulse Width ≤ 300μs, Duty Cycle = 2%

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