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2N4223, 2N4224

N-Channel JFET

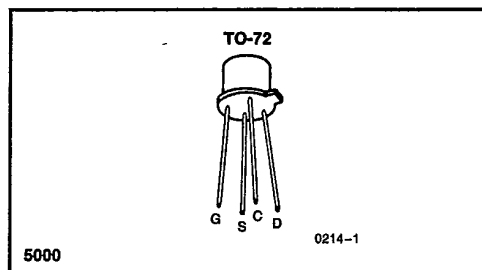
High Frequency Amplifier



2N4223, 2N4224

FEATURES

- NF=3dB Typical at 200MHz
- $C_{rss} < 2\text{pF}$

PIN CONFIGURATION**ABSOLUTE MAXIMUM RATINGS**

($T_A = 25^\circ\text{C}$ unless otherwise noted)
 Gate-Source or Gate-Drain Voltage -30V
 Gate Current 10mA
 Storage Temperature Range -65°C to $+200^\circ\text{C}$
 Operating Temperature Range -55°C to $+175^\circ\text{C}$
 Lead Temperature (Soldering, 10sec) $+300^\circ\text{C}$
 Power Dissipation 300mW
 Derate above 25°C 2.0mW/ $^\circ\text{C}$

NOTE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ORDERING INFORMATION

TO-72
2N4223
2N4224

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise specified)

Symbol	Parameter	Test Conditions	2N4223		2N4224		Units
			Min	Max	Min	Max	
I_{GSS}	Gate Reverse Current	$V_{GS} = -20\text{V}, V_{DS} = 0$		-0.25		-0.5	nA
		$T_A = +150^\circ\text{C}$		-0.25		-0.5	μA
BV_{GSS}	Gate-Source Breakdown Voltage	$I_G = -10\mu\text{A}, V_{DS} = 0$	-30		-30		V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$I_D = 0.25\text{nA}$ (2N4223) $I_D = 0.5\text{nA}$ (2N4224)	-0.1	-8	-0.1	-8	
V_{GS}	Gate-Source Voltage	$V_{DS} = 15\text{V}$ $I_D = 0.3\text{mA}$ (2N4223) $I_D = 0.2\text{mA}$ (2N4224)	-1.0	-7.0	-1.0	-7.5	
I_{DSS}	Saturation Drain Current (Note 1)	$V_{DS} = 15\text{V}, V_{GS} = 0$	3	18	2	20	mA
g_{fs}	Common-Source Forward Transconductance (Note 1)	$V_{DS} = 15\text{V}, V_{GS} = 0$ $f = 1\text{kHz}$	3000	7000	2000	7500	μS
C_{iss}	Common-Source Input Capacitance (Output Shorted)	$V_{DS} = 15\text{V}, V_{GS} = 0$ $f = 1\text{MHz}$		6		6	pF
C_{rss}	Common-Source Reverse Transfer Capacitance	(Note 2)		2		2	
$ y_{fs} $	Common-Source Forward Transadmittance	$V_{DS} = 15\text{V}, V_{GS} = 0$ (Note 2) $f = 200\text{MHz}$	2700		1700		μS
g_{iss}	Common-Source Input Conductance (Output Shorted)			800		800	
g_{oss}	Common-Source Output Conductance (Input Shorted)			200		200	
G_{ps}	Small Signal Power Gain		10				dB
NF	Noise Figure (Note 2)	$V_{DS} = 15\text{V}, V_{GS} = 0$ $R_{gen} = 1\text{k}\Omega$		5			

NOTES: 1. Pulse test, duration 2ms.
 2. For design reference only, not 100% tested.

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NOTE: All typical values have been characterized but are not tested.