n-channel JFETs *designed for . . .*

Siliconix

Performance Curves NRL See Section 5

- **Small-Signal Amplifiers**
- **VHF Amplifiers**
- **Oscillators**
- **Mixers**

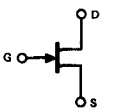
BENEFITS

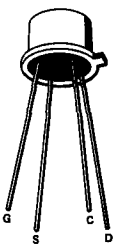
- High Gain
- Low Receiver Noise Figure

*ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage (Note 1) . . . . . -30 V
Gate Current . . . . . 10 mA
Drain Current . . . . . 15 mA
Total Device Dissipation at (or below) 25°C
Free-Air Temperature (Note 2) . . . . . 300 mW
Storage Temperature Range . . . . . -65 to +200°C
Lead Temperature
(1/16" from case for 10 seconds) . . . . . 300°C

TO-72
See Section 7





*ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

			Characteristic	2N4220, 2N4220A Min	2N4220, 2N4220A Max	2N4221, 2N4221A Min	2N4221, 2N4221A Max	2N4222, 2N4222A Min	2N4222, 2N4222A Max	Units	Test Conditions	
1	STATIC	I_{GSS}	Gate Reverse Current		-0.1		-0.1		-0.1	nA	V_{GS} = -15 V, V_{DS} = 0	
2					-0.1		-0.1		-0.1	μA		150°C
3		BV_{GSS}	Gate-Source Breakdown Voltage	-30		-30		-30		V	I_G = -10 μA, V_{DS} = 0	
4		$V_{GS(off)}$	Gate-Source Cutoff Voltage		-4		-6		-8		V_{DS} = 15 V, I_D = 0.1 nA	
5		V_{GS}	Gate-Source Voltage	-0.5	-2.5	-1	-5	-2	-6	V	V_{DS} = 15 V, I_D = ( )	
				(50)	(50)	(200)	(200)	(500)	(500)	(μA)		
6		I_{DSS}	Saturation Drain Current (Note 3)	0.5	3	2	6	5	15	mA	V_{DS} = 15 V, V_{GS} = 0	
7	DYNAMIC	g_{fs}	Common-Source Forward Transconductance (Note 3)	1000	4000	2000	5000	2500	6000	μmho	V_{DS} = 15 V, V_{GS} = 0	f = 1 kHz
8		$\lvert y_{fs} \rvert$	Common-Source Forward Transadmittance	750		750		750				f = 100 MHz
9		g_{os}	Common-Source Output Conductance (Note 3)		10		20		40			f = 1 kHz
10		C_{iss}	Common-Source Input Capacitance		6		6		6	pF		f = 1 MHz
11		C_{rss}	Common-Source Reverse Transfer Capacitance		2		2		2			
12		NF	Noise Figure, Only 2N4220A, 2N4221A, 2N4222A		2.5		2.5		2.5	dB	V_{DS} = 15 V, V_{GS} = 0 R_{gen} = 1 meg	f = 100 Hz

*JEDEC registered data.

NRL

NOTES:
1. Due to symmetrical geometry, these units may be operated with source and drain leads interchanged.
2. Derate linearly to 175°C free-air temperature at rate of 2 mW/°C.
3. These parameters are measured during a 2 msec interval 100 msec after d-c power is applied.