

**2N4220 2N4220A 2N4221 2N4221A 2N4222 2N4222A**

# n-channel JFETs designed for . . .

Performance Curves NRL  
 See Section 5

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

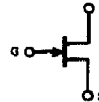
**BENEFITS**

- 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)**

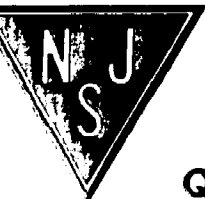
Characteristic	2N4220, 2N4220A		2N4221, 2N4221A		2N4222, 2N4222A		Units	Test Conditions
	Min	Max	Min	Max	Min	Max		
1 IGSS Gate Reverse Current		-0.1		-0.1		-0.1	nA	VGS = -15 V, VDS = 0
2 BVGSS Gate-Source Breakdown Voltage	-30		-30		-30		V	IG = -10 μA, VDS = 0
3 VGS(off) Gate-Source Cutoff Voltage		-4		-6		-8	V	VDS = 15 V, ID = 0.1 nA
4 VGS Gate-Source Voltage	-0.5 (50)	-2.5 (50)	-1 (200)	-5 (200)	-2 (500)	-6 (500)	μA	VDS = 15 V, ID = ( )
5 IDSS Saturation Drain Current (Note 3)	0.5	3	2	6	5	15	mA	VDS = 15 V, VGS = 0
6 gfs Common-Source Forward Transconductance (Note 3)	1000	4000	2000	5000	2500	6000		f = 1 kHz
7  yfs  Common-Source Forward Transmittance	750		750		750		μmho	f = 100 MHz
8 gos Common-Source Output Conductance (Note 3)		10		20		40		f = 1 kHz
9 Ciss Common-Source Input Capacitance		6		6		6	pF	f = 1 MHz
10 Crss Common-Source Reverse Transfer Capacitance		2		2		2		
11 NF Noise Figure, Only 2N4220A, 2N4221A, 2N4222A		2.5		2.5		2.5	dB	VDS = 15 V, VGS = 0 Rgen = 1 meg f = 100 Hz

\*JEDEC registered data.

**NOTES:**

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

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