

# monolithic dual n-channel JFETs designed for . . .



**Performance Curves NNR**  
See Section 4

## ■ Differential Amplifiers

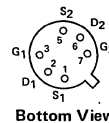
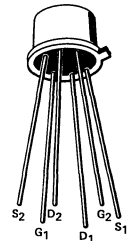
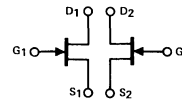
### BENEFITS

- Minimum System Error and Calibration  
5 mV Offset Maximum (2N3921)
- Simplifies Amplifier Design  
Low Output Conductance

TO-71  
See Section 6

### \*ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage . . . . .	-50 V
Total Gate Current . . . . .	50 mA
Total Device Dissipation (Derate 1.7 mW/°C to 200°C) . . . . .	300 mW
Storage Temperature Range . . . . .	-65 to +200°C



### \*ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic		Min	Max	Unit	Test Conditions	
S T A T I C	1   I <sub>GSS</sub>   Gate Reverse Current		-1	nA	V <sub>GS</sub> = -30 V, V <sub>DS</sub> = 0	100°C
	2		-1	μA		
	3   BV <sub>DGO</sub>   Drain-Gate Breakdown Voltage	50			I <sub>D</sub> = 1 μA, I <sub>S</sub> = 0	
	4   V <sub>GS(off)</sub>   Gate-Source Cutoff Voltage		-3	V	V <sub>DS</sub> = 10 V, I <sub>D</sub> = 1 nA	
	5   V <sub>GS</sub>   Gate-Source Voltage	-0.2	-2.7		V <sub>DS</sub> = 10 V, I <sub>D</sub> = 100 μA	
D Y N A M I C	6   I <sub>G</sub>   Gate Operating Current		-250	pA	V <sub>DG</sub> = 10 V, I <sub>D</sub> = 700 μA	100°C
	7		-25	nA		
	8   I <sub>DSS</sub>   Saturation Drain Current (Note 1)	1	10	mA	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0	
	9   g <sub>fs</sub>   Common-Source Forward Transconductance (Note 1)	1500	7500		V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0	f = 1 kHz
	10   g <sub>os</sub>   Common-Source Output Conductance		35	μmho		
11   C <sub>iss</sub>   Common-Source Input Capacitance		18	pF			
12   C <sub>rss</sub>   Common-Source Reverse Transfer Capacitance		6				
13   g <sub>fs</sub>   Common-Source Forward Transconductance	1500		μmho			
14   g <sub>os</sub>   Common-Source Output Conductance		20	μmho			
15   NF   Spot Noise Figure		2	dB	V <sub>DS</sub> = 10 V, V <sub>GS</sub> = 0	f = 1 kHz, R <sub>G</sub> = 1 meg	

Characteristic	2N3921		2N3922		2N4084		2N4085		Unit	Test Conditions
	Min	Max	Min	Max	Min	Max	Min	Max		
16    V <sub>GS1</sub> -V <sub>GS2</sub>     Differential Gate-Source Voltage		5	5		15		15	mV	V <sub>DG</sub> = 10 V, I <sub>D</sub> = 700 μA	
17   M A T C H   $\frac{\Delta V_{GS1}-V_{GS2} }{\Delta T}$   Gate-Source Differential Voltage Change with Temperature (Note 2)		10	25		10		25	μV/°C		T <sub>A</sub> = 0°C T <sub>B</sub> = 100°C
18     $\frac{g_{fs1}}{g_{fs2}}$   Transconductance Ratio (Note 3)	0.95	1.0	0.95	1.0	0.95	1.0	0.95	1.0		-

\*JEDEC registered data.

**NOTES:**

1. Pulse test duration = 2 ms.
2. Measured at end points, T<sub>A</sub> and T<sub>B</sub>.
3. Assumes smaller value in numerator.

**NNR**