



# Monolithic Dual N-Channel JFET General Purpose Amplifier

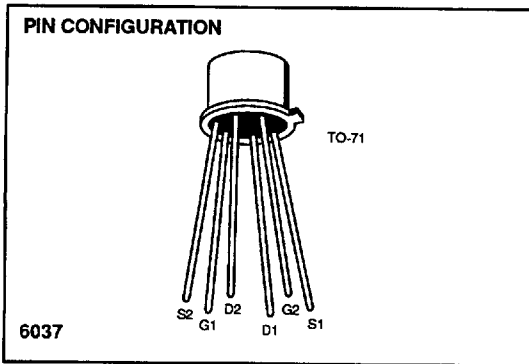
2N3921 / 2N3922

T-27-27

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**FEATURES**

- Low Drain Current
- High Output Impedance
- Matched  $V_{GS}$ ,  $\Delta V_{GS}$  and  $g_{fs}$



**ABSOLUTE MAXIMUM RATINGS**

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

Gate-Source or Gate-Drain Voltage (Note 1)	.....	-50V
Gate Current (Note 1)	.....	50mA
Storage Temperature Range	.....	-65°C to +200°C
Operating Temperature Range	.....	-55°C to +200°C
Load Temperature (Soldering, 10sec)	.....	+300°C
Total Power Dissipation	.....	300mW
Derate above 25°C	.....	1.7mW/°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**

Part	Package	Temperature Range
2N3921	Hermetic TO-71	-55°C to +200°C
2N3922	Hermetic TO-71	-55°C to +200°C
X2N3922	Sorted Chip Carriers	-55°C to +200°C



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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS
$I_{GSS}$	Gate Reverse Current		-1	nA	$V_{GS} = -30V, V_{DS} = 0$ $T_A = 100^\circ\text{C}$
			-1	$\mu\text{A}$	
$BV_{DGO}$	Drain-Gate Breakdown Voltage	50		V	$I_D = 1\mu\text{A}, I_S = 0$
$V_{GS(off)}$	Gate-Source Cutoff Voltage		-3	V	$V_{DS} = 10V, I_D = 1\text{nA}$
$V_{GS}$	Gate-Source Voltage	-0.2	-2.7	V	$V_{DS} = 10V, I_D = 100\mu\text{A}$
$I_G$	Gate Operating Current		-250	pA	$V_{DG} = 10V, I_D = 700\mu\text{A}$ $T_A = 100^\circ\text{C}$
			-25	nA	
$I_{DSS}$	Saturation Drain Current (Note 1)	1	10	mA	$V_{DS} = 10V, V_{GS} = 0$
$g_{fs}$	Common-Source Forward Transconductance (Note 2)	1500	7500	$\mu\text{S}$	$V_{DS} = 10V, V_{GS} = 0$ $f = 1\text{kHz}$
$g_{os}$	Common-Source Output Conductance		35		
$C_{iss}$	Common-Source Input Capacitance (Note 3)		18	pF	$f = 1\text{MHz}$
$C_{rss}$	Common-Source Reverse Transfer Capacitance (Note 3)		6		
$g_{fs}$	Common-Source Forward Transconductance	1500		$\mu\text{S}$	$V_{DG} = 10V, I_D = 700\mu\text{A}$ $f = 1\text{kHz}$
$g_{oss}$	Common-Source Output Conductance		20		
NF	Spot Noise Figure (Note 3)		2	dB	$V_{DS} = 10V, V_{GS} = 0$ $f = 1\text{kHz}, R_G = 1\text{meg}\Omega$

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

SYMBOL	PARAMETER	2N3921		2N3922		UNITS	TEST CONDITIONS	
		MIN	MAX	MIN	MAX			
$ V_{GS1} - V_{GS2} $	Differential Gate-Source Voltage		5		5	mV	$V_{DG} = 10\text{V}$ $I_D = 700\mu\text{A}$	
$\frac{\Delta  V_{GS1} - V_{GS2} }{\Delta T}$	Gate-Source Differential Voltage Change with Temperature		10		25	$\mu\text{V}/^\circ\text{C}$		$T_A = 0^\circ\text{C}$ $T_B = 100^\circ\text{C}$
$g_{fs1}/g_{fs2}$	Transconductance Ratio	0.95	1.0	0.95	1.0			f = 1kHz

- NOTES:**
1. Per transistor.
  2. Pulse test duration = 2 ms.
  3. For design reference only, not 100% tested.