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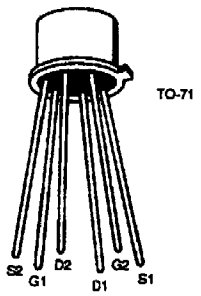
Monolithic Dual N-Channel JFET General Purpose Amplifier

2N3921 / 2N3922

FEATURES

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

PIN CONFIGURATION



6037

ABSOLUTE MAXIMUM RATINGS

(T_A = 25°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°C unless otherwise specified)

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

MATCHING CHARACTERISTICS (T_A = 25°C unless otherwise specified)

SYMBOL	PARAMETER	2N3921		2N3922		UNITS	TEST CONDITIONS	
		MIN	MAX	MIN	MAX			
$\lvert V_{GS1} - V_{GS2} \rvert$	Differential Gate-Source Voltage		5		5	mV	V_{DG} = 10V, I_D = 700μA	
$\frac{\Delta \lvert V_{GS1} - V_{GS2} \rvert}{\Delta T}$	Gate-Source Differential Voltage Change with Temperature		10		25	μV/°C		T_A = 0°C T_B = 100°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.