

N-Channel JFET

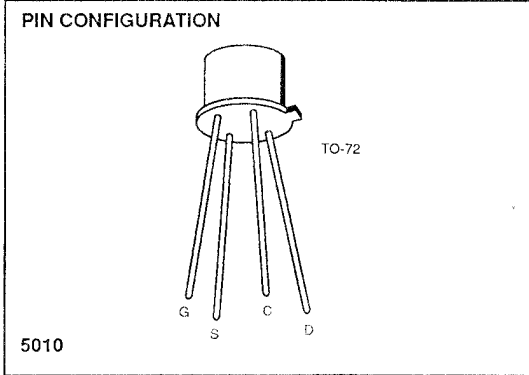
General Purpose Amplifier/Switch



2N4220 - 2N4222

FEATURES

- $C_{rss} < 2\text{pF}$
- Moderately High Forward Transconductance



ABSOLUTE MAXIMUM RATINGS

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

Gate-Source or Gate-Drain Voltage -30V
Gate Current 10mA
Storage Temperature Range -65°C to $+200^\circ\text{C}$
Operating Temperature Range -55°C to $+175^\circ\text{C}$
Lead Temperature (Soldering, 10sec) $+300^\circ\text{C}$
Power Dissipation 300mW
Derate above 25°C $2.0\text{mW}/^\circ\text{C}$

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
2N4220	Hermetic TO-72	-55°C to $+175^\circ\text{C}$
X2N4220	Sorted Chips in Carriers	-55°C to $+175^\circ\text{C}$
2N4221	Hermetic TO-72	-55°C to $+175^\circ\text{C}$
X2N4221	Sorted Chips in Carriers	-55°C to $+175^\circ\text{C}$
2N4222	Hermetic TO-72	-55°C to $+175^\circ\text{C}$
X2N4222	Sorted Chips in Carriers	-55°C to $+175^\circ\text{C}$

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

SYMBOL	PARAMETER	2N4220		2N4221		2N4222		UNITS	TEST CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX		
I_{GSS}	Gate Reverse Current		-0.1		-0.1		-0.1	nA	$V_{GS} = -15\text{V}, V_{DS} = 0$ $T_A = 150^\circ\text{C}$
			-0.1		-0.1		-0.1	μA	
BV_{GSS}	Gate-Source Breakdown Voltage	-30		-30		-30		V	$I_G = -10\mu\text{A}, V_{DS} = 0$
$V_{GS(off)}$	Gate-Source Cutoff Voltage		-4		-6		-8	V	$V_{DS} = 15\text{V}, I_D = 0.1\text{nA}$
V_{GS}	Gate-Source Voltage	-0.5	-2.5	-1	-5	-2	-6	V	$V_{DS} = 15\text{V}$ $I_D = 50\mu\text{A}$ (2N4220) $I_D = 200\mu\text{A}$ (2N4221) $I_D = 500\mu\text{A}$ (2N4222)
I_{DSS}	Saturation Drain Current (Note 1)	0.5	3	2	6	5	15	mA	$V_{DS} = 15\text{V}, V_{GS} = 0$
g_{fs}	Common-Source Forward Transconductance (Note 1)	1000	4000	2000	5000	2500	6000		$f = 1\text{kHz}$
$ y_{fs} $	Common-Source Forward Transadmittance (Note 2)	750		750		750		μS	$f = 100\text{MHz}$
g_{os}	Common-Source Output Conductance (Note 1)		10		20		40		$V_{DS} = 15\text{V}, V_{GS} = 0$ $f = 1\text{kHz}$
C_{iss}	Common-Source Input Capacitance (Note 2)		6		6		6	pF	$f = 1\text{MHz}$
C_{rss}	Common-Source Reverse Transfer Capacitance (Note 2)		2		2		2	pF	$f = 1\text{MHz}$

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