2N3821, 2N3822
N-Channel JFET

FEATURES

- **Low Capacitance**
- **Up to 6500 μmho Transconductance**

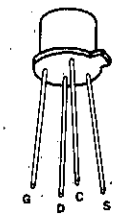
ABSOLUTE MAXIMUM RATINGS

(T_A = 25°C unless otherwise noted)

Gate-Source Voltage	-50V
Gate-Drain Voltage	-50V
Gate Current	10 mA
Storage Temperature Range	-65°C to +200°C
Operating Temperature Range	-55°C to +150°C
Lead Temperature (Soldering, 10 sec.)	+300°C
Power Dissipation	300 mW
Derate above 25°C	1.7 mW/°C

PIN CONFIGURATION

TO-72



CHIP TOPOGRAPHY

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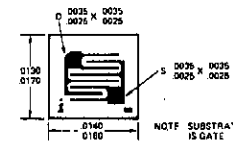

ORDERING INFORMATION*

TO-72	WAFER	DICE
2N3821	2N3821/W	2N3821/D
2N3822	2N3822/W	2N3822/D

*When ordering wafer/dice refer to Appendix B-23.

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER		2N3821 MIN	2N3821 MAX	2N3822 MIN	2N3822 MAX	UNIT	TEST CONDITIONS	
I_{GSS}	Gate Reverse Current		-0.1		-0.1	nA	V_{GS} = -30 V, V_{DS} = 0	
	T_A = 150°C		-0.1		-0.1	μA		
BV_{GSS}	Gate-Source Breakdown Voltage	-50		-50		V	I_G = -1 μA, V_{DS} = 0	
$V_{GS(off)}$	Gate-Source Cutoff Voltage		-4		-6		V_{DS} = 15 V, I_D = 0.5 nA	
V_{GS}	Gate-Source Voltage	-0.5	-2				V_{DS} = 15 V, I_D = 50 μA	
				-1	-4		V_{DS} = 15 V, I_D = 200 μA	
I_{DSS}	Saturation Drain Current	0.5	2.5	2	10	mA	V_{DS} = 15 V, V_{GS} = 0	
g_{fs}	Common-Source Forward Transconductance (Note 1)	1500	4500	3000	6500	μmho	V_{DS} = 15 V, V_{GS} = 0	f = 1 kHz
$\lvert y_{fs} \rvert$	Common-Source Forward Transadmittance	1500		3000				f = 100 MHz
g_{os}	Common-Source Output Conductance (Note 1)		10		20			f = 1 kHz
C_{iss}	Common-Source Input Capacitance		6		6	pF		f = 1 MHz
C_{rss}	Common-Source Reverse Transfer Capacitance		3		3			
NF	Noise Figure		5		5	dB	V_{DS} = 15 V, V_{GS} = 0, R_{gen} = 1 meg, BW = 5 Hz	f = 10 Hz
$\overline{e_n}$	Equivalent Input Noise Voltage		200		200	$\frac{nV}{\sqrt{Hz}}$	V_{DS} = 15 V, V_{GS} = 0, BW = 5 Hz	

Note 1: These parameters are measured during a 2 msec interval 100 msec after DC power is applied.