n-channel JFETs *designed for . . .*

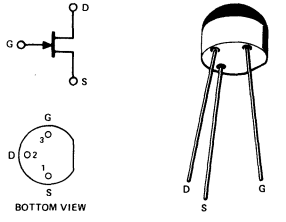
■ General Purpose Amplifiers

Performance Curves NP
See Section 4

BENEFITS

- Low Cost
- High Input Impedance
  I_G = 35 pA Typically
- Low Noise
  $\overline{e_n}$ = 5 nV/$\sqrt{Hz}$ Typically @ 1 kHz

TO-106
See Section 5



*ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage (Note 1) . . . . . −30V
Gate Current . . . . . 50 mA
Total Device Dissipation
(25°C Free-Air Temperature) . . . . . 350 mW
Power Derating (to +125°C) . . . . . 3.5 mW/°C
Storage Temperature Range . . . . . −55 to +125°C
Operating Temperature Range . . . . . −55 to +125°C
Lead Temperature
(1/16" from case for 10 seconds) . . . . . 300°C

*ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

		Characteristic		2N4302		2N4303		2N4304		Unit	Test Conditons	
				Min	Max	Min	Max	Min	Max			
1	STATIC	I_{GSS}	Gate Reverse Current (Note 2)		1		−1		−1	nA	V_{GS} = −10 V, V_{DS} = 0	
2					0.1		−0.1		−0.1	μA		T_A = 85°C
3		BV_{GSS}	Gate-Source Breakdown Voltage	−30		−30		−30		V	I_G = −1 μA, V_{DS} = 0	
4		$V_{GS(off)}$	Gate-Source Cutoff Voltage		−4.0		−6.0		−10		V_{DS} = 20 V, I_D = 10 nA	
5		I_{DSS}	Saturation Drain Current (Note 3)	0.5	5.0	4.0	10	0.5	15	mA	V_{DS} = 20 V, V_{GS} = 0	
6	DYNAMIC	g_{fs}	Common-Source Forward Transconductance (Note 3)	1000		2000		1000		μmho		f = 1 kHz
7		g_{os}	Common-Source Output Conductance		50		50		50			
8		C_{rss}	Common-Source Reverse Transfer Capacitance		3		3		3	pF		f = 1 MHz
9		C_{iss}	Common-Source Input Capacitance		6		6		6			
10		C_{DG}	Drain-Gate Capacitance		2		2		2		V_{DG} = 10 V, I_S = 0	f = 140 kHz
11		NF	Noise Figure		2.0		2.0		3.0	dB	V_{DS} = 10 V, V_{GS} = 0	f = 1 kHz, R_{gen} = 1.0M Ω
12		$\|y_{fs}\|$	Common-Source Short Circuit Forward Transadmittance (Note 3)	700		1400		700		μmho	V_{DS} = 20 V, V_{GS} = 0	f = 10 MHz

*JEDEC registered data

NP

NOTES:
1. Geometry is symmetrical. Units may be operated with source and drain leads interchanged.
2. Approximately doubles for every 10°C increase in T_A.
3. Pulse test duration = 2 ms.