

monolithic dual n-channel JFETs designed for . . .



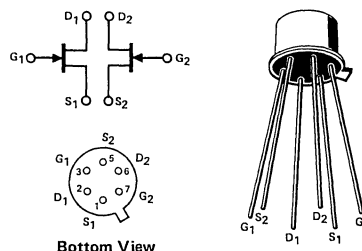
■ Differential Amplifiers

Performance Curves NQP
See Section 4

BENEFITS

- Good Matching Characteristics

TO-71
See Section 6



Bottom View

ABSOLUTE MAXIMUM RATINGS (25°C)

Gate-Drain or Gate-Source Voltage	-50 V
Gate Current	50 mA
Total Device Dissipation at 25°C (Derate 1.7 mW/°C to 200°C)	300 mW
Storage Temperature Range	-65 to +200°C
Lead Temperature (1/16" from case for 10 seconds)	300°C

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic		Min	Max	Unit	Test Conditions	
1	IGSS Gate Reverse Current		-100	pA	VGS = -30 V, VDS = 0	
2			-500	nA		150°C
3	BVGS Gate-Source Breakdown Voltage	-50			IG = -1 μA, VDS = 0	
4	VGS(off) Gate-Source Cutoff Voltage	-0.5	-4.5	V		
5	VGS Gate-Source Voltage	-0.3	-4.0		VDS = 20 V, ID = 1 nA	
6	IG Gate Operating Current		-50	pA		
			-250	nA	VDS = 20 V, ID = 200 μA	125°C
7	IDSS Saturation Drain Current (Note 1)	0.5	5.0	mA	VDS = 20 V, VGS = 0	
8	gfs Common-Source Forward Transconductance (Note 1)	1000	5000		VDS = 20 V, VGS = 0	f = 1 kHz
		1000				f = 100 MHz
9	gfs Common-Source Forward Transconductance (Note 1)	600	1600	μmho	VDS = 20 V, ID = 200 μA	f = 1 kHz
10	gos Common-Source Output Conductance		35			
11	gos Common-Source Output Conductance		10		VDS = 20 V, ID = 200 μA	f = 1 MHz
12	Ciss Common-Source Input Capacitance		6	pF		
13	Crss Common-Source Reverse Transfer Capacitance		2		VDS = 20 V, VGS = 0	f = 100 Hz
14	en Equivalent Short Circuit Input Noise Voltage		80	nV/√Hz		

Characteristic		U231 Max	U232 Max	U233 Max	U234 Max	U235 Max	Unit	Test Conditions	
15	$ I_{G1}-I_{G2} $ Differential Gate Current	10	10	10	10	10	nA	$V_{DG} = 20\text{ V}, I_D = 200\text{ }\mu\text{A}$	125°C
16	$\frac{ I_{DSS1}-I_{DSS2} }{I_{DSS1}}$ Saturation Drain Current Match (Note 1)	5	5	5	10	15	%	$V_{DS} = 20\text{ V}, V_{GS} = 0$	
17	$ V_{GS1}-V_{GS2} $ Differential Gate-Source Voltage	5	10	15	20	25	mV	$V_{DG} = 20\text{ V}, I_D = 200\text{ }\mu\text{A}$	
18	$\frac{\Delta V_{GS1}-V_{GS2} }{\Delta T}$ Gate-Source Voltage Differential Drift (Note 2)	10	25	50	75	100	$\mu\text{V}/^{\circ}\text{C}$		$T_A = 25^{\circ}\text{C}$ $T_B = 125^{\circ}\text{C}$
19		10	25	50	75	100			$T_A = -55^{\circ}\text{C}$ $T_B = 25^{\circ}\text{C}$
20	$\frac{ g_{fs1}-g_{fs2} }{g_{fs1}}$ Transconductance Match (Note 1)	3	5	5	10	15	%		
21	$ g_{os1}-g_{os2} $ Differential Output Conductance	5	5	5	5	5	μmho		$f = 1\text{ kHz}$

NOTES:

- Pulse test required, pulsewidth = 300 μs, duty cycle ≤ 3%.
- Measured at end points, TA and TB.

NQP