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monolithic dual n-channel JFETs designed for . . .



■ Differential Amplifiers

Performance Curves NNP See Section 5

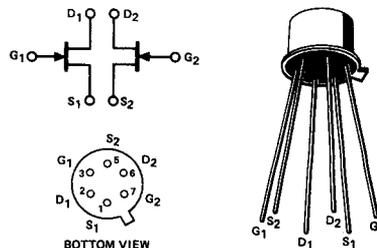
BENEFITS

- Good Matching Characteristics

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

TO-71
See Section 7



ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic		Min	Max	Unit	Test Conditions	
S T A T I C	I_{GSS} Gate Reverse Current		-100	pA	$V_{GS} = -30 V, V_{DS} = 0$ 150°C	
			-500	nA		
	BV_{GSS} Gate-Source Breakdown Voltage	-50			$I_G = -1 \mu A, V_{DS} = 0$ $V_{DS} = 20 V, I_D = 1 nA$	
	$V_{GS(off)}$ Gate-Source Cutoff Voltage	-0.5	-4.5	V		
	V_{GS} Gate-Source Voltage	-0.3	-4.0			
	I_G Gate Operating Current		-50	pA	$V_{DG} = 20 V, I_D = 200 \mu A$ 125°C	
			-250	nA		
I_{DSS} Saturation Drain Current (Note 1)	0.5	5.0	mA	$V_{DS} = 20 V, V_{GS} = 0$		
D Y N A M I C	g_{fs} Common-Source Forward Transconductance (Note 1)	1000	3000		$V_{DS} = 20 V, V_{GS} = 0$ $V_{DG} = 20 V, I_D = 200 \mu A$	
		1000		μmho		$f = 1 kHz$ $f = 100 MHz$
	g_{os} Common-Source Output Conductance		35		$V_{DS} = 20 V, V_{GS} = 0$ $V_{DG} = 20 V, I_D = 200 \mu A$	
	g_{os} Common-Source Output Conductance		10			$f = 1 kHz$
	C_{iss} Common-Source Input Capacitance		6	pF		
	C_{rss} Common-Source Reverse Transfer Capacitance		2		$V_{DS} = 20 V, V_{GS} = 0$ $f = 1 MHz$ $f = 100 Hz$	
	\bar{e}_n Equivalent Short Circuit Input Noise Voltage		80	$\frac{nV}{\sqrt{Hz}}$		

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

NOTES:

1. Pulse test required, pulsewidth = 300 μs , duty cycle $\leq 3\%$.
2. Measured at end points, T_A and T_B .

NNP
NP-D