monolithic dual n-channel JFETs *designed for . . .*

- **Low and Medium Frequency Differential Amplifiers**
- **High Input Impedance Amplifiers**

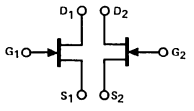
Siliconix

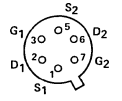
Performance Curves NQP
See Section 4

BENEFITS

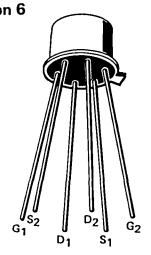
- High Accuracy & Stability
  Offset Less Than 5 mV (2N3954, 54A)
  Drift Less Than 5 μV/°C (2N3954A)
- Wide Dynamic Range
  I_G Specified @ V_{DS} = 20 V
- Low Capacitance
  $C_{iss} < 4$ pF

TO-71
See Section 6





Bottom View



ABSOLUTE MAXIMUM RATINGS (25°C)

Any Case-To-Lead Voltage . . . . . ±100 V
Gate-Drain or Gate-Source Voltage . . . . . -50 V
Gate Current . . . . . 50 mA
Total Device Dissipation at (Each Side) . . . . . .250 mW
85°C Case Temperature (Both Sides) . . . . . .500 mW
Power Derating (Each Side) . . . . . 2.86 mW/°C
(Both Sides) . . . . . 4.3 mW/°C
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		2N3954		2N3954A		2N3955		2N3955A		Unit	Test Conditions	
				Min	Max	Min	Max	Min	Max	Min	Max			
1	STATIC	I_{GSS}	Gate Reverse Current		-100		-100		-100		-100	pA	V_{GS} = -30 V,	
2					-500		-500		-500		-500	nA	V_{DS} = 0	T_A = 125°C
3		BV_{GSS}	Gate-Source Breakdown Voltage	-50		-50		-50		-50		V	V_{DS} = 0, I_G = -1 μA	
4		$V_{GS(off)}$	Gate-Source Cutoff Voltage	-1 0	-4.5	-1.0	-4.5	-1.0	-4 5	-1.0	-4 5		V_{DS} = 20 V, I_D = 1 nA	
5		$V_{GS(f)}$	Gate-Source Forward Voltage		2.0		2 0		2 0		2 0		V_{DS} = 0, I_G = 1 mA	
6		V_{GS}	Gate-Source Voltage		-4 2		-4.2		-4 2		-4.2		V_{DS} = 20 V	I_D = 50 μA
7				-0 5	-4.0	-0 5	-4 0	-0.5	-4 0	-0.5	-4 0			I_D = 200 μA
8		I_G	Gate Operating Current		-50		-50		-50		-50	pA	V_{DS} = 20 V,	
9					-250		-250		-250		-250	nA	I_D = 200 μA	T_A = 125°C
10		I_{DSS}	Saturation Drain Current	0 5	5 0	0 5	5 0	0 5	5 0	0 5	5.0	mA	V_{DS} = 20 V, V_{GS} = 0	
11	DYNAMIC	g_{fs}	Common-Source Forward Transconductance	1000	3000	1000	3000	1000	3000	1000	3000	μmho	V_{DS} = 20 V, V_{GS} = 0	f = 1 kHz
12				1000		1000		1000		1000				f = 200 MHz
13		g_{os}	Common-Source Output Conductance		35		35		35		35			f = 1 kHz
14		C_{iss}	Common-Source Input Capacitance		4 0		4 0		4.0		4 0	pF		f = 1 MHz
15		C_{rss}	Common-Source Reverse Transfer Capacitance		1 2		1 2		1 2		1.2			
16		C_{dgo}	Drain-Gate Capacitance		1.5		1.5		1.5		1.5		V_{DG} = 10 V, I_S = 0	
17		NF	Common Source Spot Noise Figure		0 5		0.5		0 5		0 5	dB	V_{DS} = 20 V, V_{GS} = 0, R_G = 10 MΩ	f = 100 Hz
18	MATCHING	$\lvert I_{G1}-I_{G2}\rvert$	Differential Gate Current		10		10		10		10	nA	V_{DS} = 20 V, I_D = 200 μA,	T = 125°C
19		I_{DSS1}/I_{DSS2}	Saturation Drain Current Ratio (Note 1)	0.95	1.0	0 95	1.0	0.95	1.0	0 95	1.0	–	V_{DS} = 20 V V_{GS} = 0	
20		$\lvert V_{GS1}-V_{GS2}\rvert$	Differential Gate-Source Voltage		5 0		5.0		10.0		5.0	mV	V_{DS} = 20 V, I_D = 200 μA	
21		$\Delta\lvert V_{GS1}-V_{GS2}\rvert$	Gate-Source Differential Voltage Change with Temperature		0 8		0.4		2.0		1.2			T = 25°C to -55°C
22					1.0		0.5		2.5		1.5			T = 25°C to 125°C
23		g_{fs1}/g_{fs2}	Transconductance Ratio (Note 1)	0 97	1 0	0 97	1 0	0 97	1.0	0.95	1 0	–		f = 1 kHz

*JEDEC registered data

NOTE:
1. Assumes smaller value in numerator.

NQP