



Monolithic Dual N-Channel JFET General Purpose Amplifier

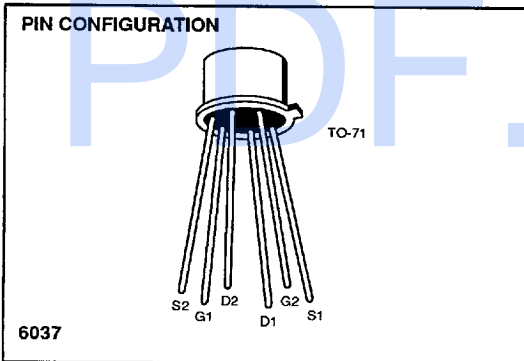
2N3954 - 2N3958 / 2N3954A / 2N3955A

T-27-27

2N3954 - 2N3958 / 2N3954A / 2N3955A

FEATURES

- Low Offset and Drift
- Low Capacitance
- Low Noise
- Superior Tracking Ability
- Low Output Conductance



ABSOLUTE MAXIMUM RATINGS

(T_A = 25°C unless otherwise noted)

Gate-Drain or Gate-Source Voltage -50V
Gate-to-Gate Voltage ±50V
Gate Current 50mA
Total Device Dissipation 85°C (Each Side) 250mW
Case Temperature (Both Sides) 500mW
Power Derating (Each Side) 2.86mW/°C
(Both Sides) 4.3mW/°C
Storage Temperature Range -65°C to +200°C
Lead Temperature (1/16" from case for 10 seconds) 300°C

NOTE: Stresses above those listed under "Absolute Maximum Ratings" may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions above those indicated in the operational sections of the specifications is not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

ORDERING INFORMATION

Part	Package	Temperature Range
2N3954	Hermetic TO-71	-65°C to +200°C
X2N3954	Sorted Chips in Carriers	-65°C to +200°C
2N3954A	Hermetic TO-71	-65°C to +200°C
2N3955	Hermetic TO-71	-65°C to +200°C
X2N3955	Sorted Chips in Carriers	-65°C to +200°C
2N3955A	Hermetic TO-71	-65°C to +200°C
2N3956	Hermetic TO-71	-65°C to +200°C
X2N3956	Sorted Chips in Carriers	-65°C to +200°C
2N3957	Hermetic TO-71	-65°C to +200°C
X2N3957	Sorted Chips in Carriers	-65°C to +200°C
2N3958	Hermetic TO-71	-65°C to +200°C
X2N3958	Sorted Chips in Carriers	-65°C to +200°C



ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise specified)

SYMBOL	PARAMETER	2N3954		2N3954A		2N3955		2N3955A		2N3956		2N3957		2N3958		UNITS	TEST CONDITIONS	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
I _{gss}	Gate Reverse Current		-100		-100		-100		-100		-100		-100		-100	pA	V _{GS} = -30V V _{DS} = 0 T _A = 150°C	
			-500		-500		-500		-500		-500		-500		-500			nA
BV _{GSS}	Gate-Source Breakdown Voltage	-50		-50		-50		-50		-50		-50		-50		V	V _{DS} = 0 I _G = -1μA	
V _{GS(off)}	Gate-Source Cutoff Voltage	-1.0	-4.5	-1.0	-4.5	-1.0	-4.5	-1.0	-4.5	-1.0	-4.5	-1.0	-4.5	-1.0	-4.5			V _{DS} = 20V I _D = 1nA
V _{GS(f)}	Gate-Source Forward Voltage		2.0		2.0		2.0		2.0		2.0		2.0		2.0			
V _{GS}	Gate-Source Voltage		-4.2		-4.2		-4.2		-4.2		-4.2		-4.2		-4.2			V _{DS} = 20V I _D = 50μA I _D = 200μA
I _G	Gate Operating Current		-50		-50		-50		-50		-50		-50		-50	pA	V _{DS} = 20V I _D = 200μA T _A = 125°C	
			-250		-250		-250		-250		-250		-250		-250			nA

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ELECTRICAL CHARACTERISTICS (Continued) (T_A = 25°C unless otherwise specified)

SYMBOL	PARAMETER	2N3954		2N3954A		2N3955		2N3955A		2N3956		2N3957		2N3958		UNITS	TEST CONDITIONS	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
I _{DSS}	Saturation Drain Current	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	0.5	5.0	mA	V _{DS} = 20V, V _{GS} = 0	
g _{fs}	Common-Source Forward Transconductance	1000	3000	1000	3000	1000	3000	1000	3000	1000	3000	1000	3000	1000	3000	μA	V _{DS} = 20V, V _{GS} = 0	f = 1kHz
		1000		1000		1000		1000		1000		1000		1000			(Note 2)	f = 200MHz
g _{os}	Common-Source Output Conductance		35		35		35		35		35		35		35			f = 1kHz
C _{iss}	Common-Source Input Capacitance (Note 2)		4.0		4.0		4.0		4.0		4.0		4.0		4.0	pF	V _{DS} = 20V, V _{GS} = 0	f = 1MHz
C _{res}	Common-Source Reverse Transfer Capacitance (Note 2)		1.2		1.2		1.2		1.2		1.2		1.2		1.2			
C _{dg0}	Drain-Gate Capacitance (Note 2)		1.5		1.5		1.5		1.5		1.5		1.5		1.5		V _{DS} = 10V, I _S = 0	
NF	Common-Source Spot Noise Figure (Note 2)		0.5		0.5		0.5		0.5		0.5		0.5		0.5	dB	V _{DS} = 20V, V _{GS} = 0, R _G = 10MΩ	f = 100Hz
I _{G1} - I _{G2}	Differential Gate Current		10		10		10		10		10		10		10	nA	V _{DS} = 20V, I _D = 200μA	T = 125°C
I _{DSS1} /I _{DSS2}	Drain Saturation Current Ratio	0.95	1.0	0.95	1.0	0.95	1.0	0.95	1.0	0.95	1.0	0.90	1.0	0.85	1.0		V _{DS} = 20V, V _{GS} = 0	
V _{GS1} - V _{GS2}	Differential Gate-Source Voltage		5.0		5.0		10.0		5.0		15		20		25	mV	V _{DS} = 20V, I _D = 200μA	T = 25°C t ₀ = -55°C
Δ V _{GS1} - V _{GS2} ΔT	Gate-Source Differential		0.8		0.4		2.0		1.2		4.0		6.0		8.0			
	Voltage Change With Temperature		1.0		0.5		2.5		1.5		5.0		7.5		10.0			T = 25°C to 125°C
g _{m1} /g _{m2}	Transconductance Ratio	0.97	1.0	0.97	1.0	0.97	1.0	0.95	1.0	0.95	1.0	0.90	1.0	0.85	1.0			f = 1kHz

NOTES: 1. Per Transistor.
2. For design reference only, not 100% tested.