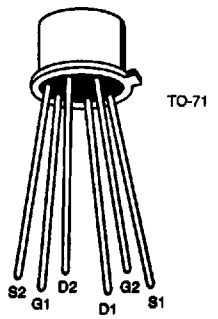
calogic
CORPORATION

Dual N-Channel JFET General Purpose Amplifier

T-27-27

2N5196 – 2N5199

PIN CONFIGURATION



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ABSOLUTE MAXIMUM RATINGS
(T_A = 25°C unless otherwise noted)

Gate-Source or Gate-Drain Voltage (Note 1) ..... -50V
Gate Current (Note 1) 50mA
Storage Temperature Range .....-65°C to +200°C
Operating Temperature Range .....-55°C to +150°C
Lead Temperature (Soldering, 10sec) .....+300°C

	One Side	Both Sides
Power Dissipation(T_A = 85°C)	250mW	500mW
Derating	2.6mW/°C	4.3mW/°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
2N5196	Hermetic TO-71	-55°C to +150°C
2N5197	Hermetic TO-71	-55°C to +150°C
2N5198	Hermetic TO-71	-55°C to +150°C
X2N5198	Sorted Chips in Carriers	-55°C to +150°C
2N5199	Hermetic TO-71	-55°C to +150°C
X2N5199	Sorted Chips in Carriers	-55°C to +150°C

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

SYMBOL	PARAMETER	MIN	MAX	UNITS	TEST CONDITIONS	
I_{GSS}	Gate Reverse Current		-25	pA	V_{GS} = -30V, V_{DS} = 0	
			-50	nA		T_A = 150°C
BV_{GSS}	Gate-Source Breakdown Voltage	-50		V	I_G = -1μA, V_{DS} = 0	
$V_{GS(off)}$	Gate-Source Cutoff Voltage	-0.7	-4		V_{DS} = 20V, I_D = 1nA	
V_{GS}	Gate-Source Voltage	-0.2	-3.8		V_{DG} = 20V, I_D = 200μA	
I_G	Gate Operating Current		-15	pA		
			-15	nA		T_A = 125°C
I_{DSS}	Saturation Drain Current (Note 2)	0.7	7	mA	V_{DS} = 20V, V_{GS} = 0	
g_{fs}	Common-Source Forward Transconductance (Note 2)	1000	4000	μs	V_{DS} = 20V, V_{GS} = 0	f = 1kHz
g_{fs}	Common-Source Forward Transconductance (Note 2)	700	1600		V_{DG} = 20V, I_D = 200μA	
g_{os}	Common-Source Output Conductance (Note 2)		50		V_{DS} = 20V, V_{GS} = 0	
g_{os}	Common-Source Output Conductance (Note 2)		4		V_{DG} = 20V, I_D = 200μA	
C_{iss}	Common-Source Input Capacitance (Note4)		6	pF	V_{DS} = 20V, V_{GS} = 0	f = 1MHz
C_{rss}	Common-Source Reverse Transfer Capacitance (Note 4)		2			
NF	Spot Noise Figure (Note 4)		0.5	dB		f = 100Hz, R_G = 10MΩ
$\bar{e}_n$	Equivalent Input Noise Voltage (Note 4)		20	$\frac{nV}{\sqrt{Hz}}$		f = 1kHz

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

SYMBOL	PARAMETER	2N5196		2N5197		2N5198		2N5199		UNITS	TEST CONDITIONS	
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX			
$\lvert I_{G1} - I_{G2} \rvert$	Differential Gate Current		5		5		5		5	nA	V_{DG} = 20V, I_D = 200μA T_A = 125°C	
I_{DSS1} / I_{DSS2}	Saturation Drain Current Ratio (Note 2)	0.95	1	0.95	1	0.95	1	0.95	1		V_{DS} = 20V, V_{GS} = 0V	
g_{fs1} / g_{fs2}	Transconductance Ratio (Note 2)	0 97	1	0.97	1	0.95	1	0.95	1		V_{DG} = 20V, I_D = 200μA	f = 1kHz
$\lvert V_{GS1} - V_{GS2} \rvert$	Differential Gate-Source Voltage		5		5		10		15	mV		
$\frac{\Delta \lvert V_{GS1} - V_{GS2} \rvert}{\Delta T}$	Gate-Source Differential Voltage Change with Temperature (Note 3)		5		10		20		40	μV/°C		T_A = 25°C T_B = 125°C
			5		10		20		40			T_A = -55°C T_B = 25°C
$\lvert g_{os1} - g_{os2} \rvert$	Differential Output Conductance		1		1		1		1	μs		f = 1kHz

NOTES: 1. Per transistor.
2. Pulse test required, pulsewidth = 300μs, duty cycle <3%
3. Measured at endpoints T_A and T_B.
4. For design reference only, not 100% tested.