

2N5196 2N5197 2N5198 2N5199

monolithic dual n-channel JFETs designed for . . .

- Differential Amplifiers
- FET Input Op Amps

*ABSOLUTE MAXIMUM RATINGS (25°C)

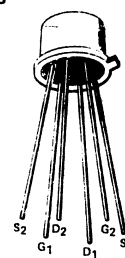
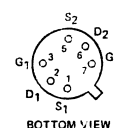
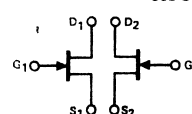
Gate-Drain or Gate-Source Voltage	-50 V
Gate Current	50 mA
Device Dissipation (Each Side), $T_A = 85^\circ\text{C}$ (Derate 2.56 mW/°C)	250 mW
Total Device Dissipation, $T_A = 85^\circ\text{C}$ (Derate 4.3 mW/°C)	500 mW
Storage Temperature Range	-65 to +200°C

Performance Curves NNP See Section 4

BENEFITS

- Minimum System Error and Calibration
5 mV Maximum Offset (2N5196, 97)
- Low Drift
5 $\mu\text{V}/^\circ\text{C}$ Maximum (2N5196)
- Simplifies Amplifier Design
Low Output Conductance

TO-71
See Section 5



*ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

Characteristic		Min	Max	Unit	Test Conditions	
S T A T I C	1 IGSS Gate Reverse Current		-25	pA	VGS = -30 V, VDS = 0	150°C
	2 BVGSS Gate-Source Breakdown Voltage	-50	-50	nA		
	4 VGS(off) Gate-Source Cutoff Voltage	-0.7	-4	V	IG = -1 μA, VDS = 0	
	5 VGS Gate-Source Voltage	-0.2	-3.8		VDS = 20 V, ID = 1 nA	
	6 IG Gate Operating Current		-15	pA	VDS = 20 V, ID = 200 μA	125°C
		-15	nA			
D Y N A M I C	7 IDSS Saturation Drain Current	0.7	7	mA	VDS = 20 V, VGS = 0	
	8 gfs Common-Source Forward Transconductance	1000	4000	μmho	VDS = 20 V, VGS = 0	f = 1 kHz
	9 gfs Common-Source Forward Transconductance	700	1600		VDS = 20 V, ID = 200 μA	
	10 gos Common-Source Output Conductance		50		VDS = 20 V, VGS = 0	
	11 gos Common-Source Output Conductance		4		VDS = 20 V, ID = 200 μA	
	12 Ciss Common-Source Input Capacitance		6	pF	VDS = 20 V, VGS = 0	f = 1 MHz
	13 Crss Common-Source Reverse Transfer Capacitance		2			f = 100 Hz, RG = 10 MΩ
	14 NF Spot Noise Figure		0.5	dB	VDS = 20 V, VGS = 0	f = 1 kHz
15 ēn Equivalent Short-Circuit Input Noise Voltage		20	$\frac{nV}{\sqrt{Hz}}$			

Characteristic		2N5196		2N5197		2N5198		2N5199		Unit	Test Conditions	
		Min	Max	Min	Max	Min	Max	Min	Max			
16	IG1-IG2 Differential Gate Current		5		5		5		5	nA	VDS = 20 V, ID = 200 μA	125°C
17	IDSS1 IDSS2 Saturation Drain Current Ratio (Note 1)	0.95	1	0.95	1	0.95	1	0.95	1	—	VDS = 20 V, VGS = 0 V	
18	gfs1 gfs2 Transconductance Ratio (Note 1)	0.97	1	0.97	1	0.95	1	0.95	1	—	VDS = 20 V, ID = 200 μA	f = 1 kHz
19	VGS1-VGS2 Differential Gate-Source Voltage		5		5		10		15	mV		
20	ΔVGS1-VGS2 ΔT Gate-Source Differential Voltage Change with Temperature (Note 2)		5		10		20		40	μV/°C		TA = 25°C TB = 125°C
21			5		10		20		40			TA = -55°C TB = 25°C
22	gos1-gos2 Differential Output Conductance		1		1		1		1	μmho	f = 1 kHz	

*JEDEC registered data.

NOTES:

1. Assumes smaller value in numerator.

2. Measured at end points, T_A and T_B .

NNP