2N5911, 2N5912 N-Channel Monolithic Dual JFETs

General Description

The 2N5911 thru 2N5912 series of N-channel monolithic dual JFETs is designed for wideband, low noise differential amplifiers.

Absolute Maximum Ratings (25°C)

Gate-to-Gate Voltage	±25V
Gate-Drain or Gate-Source Voltage	−25V
Gate Current	50 mA
Device Dissipation (Each Side), (Derate 3 mW/°C)	367 mW
Total Device Dissipation, (Derate 4 mW/°C)	500 mW
Storage Temperature Range	−65°C to +200°C
Lead Temperature (1/16" from case for 10 seconds)	300°C

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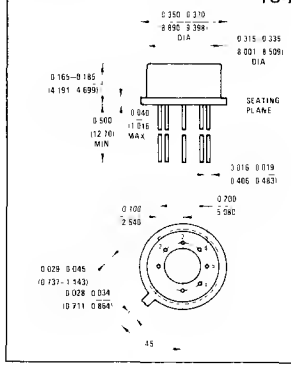

PIN	FET
1	S
2	D
3	G
4	Case
5	S
6	D
7	G

Electrical Characteristics (25° unless otherwise noted)

PARAMETER		CONDITIONS		MIN	MAX	UNITS
I_{GSS}	Gate Reverse Current	V_{GS} = −15V, V_{DS} = 0			−100	pA
			150 C		−250	nA
BV_{GSS}	Gate Reverse Breakdown Voltage	I_G = −1 μA, V_{DS} = 0		−25		V
$V_{GS(off)}$	Gate-Source Cutoff Voltage	V_{DS} = 10V, I_D = 1 nA		1	−5	V
V_{GS}	Gate-Source Voltage	V_{DG} = 10V, I_D = 5 mA		−0.3	−4	V
I_G	Gate Operating Current				−100	pA
			125°C		−100	nA
I_{DSS}	Saturation Drain Current	V_{DS} = 10V, V_{GS} = 0V, (Note 1)		7	40	mA
g_{fs}	Common-Source Forward Transconductance	V_{DG} = 10V, I_D = 5 mA	f = 1 kHz	5000	10,000	μmho
g_{fs}	Common-Source Forward Transconductance		f = 100 MHz	5000	10,000	
g_{os}	Common-Source Output Conductance		f = 1 kHz		100	
g_{oss}	Common-Source Output Conductance		f = 100 MHz		150	
C_{iss}	Common-Source Input Capacitance		f = 1 MHz		5	pF
C_{rss}	Common-Source Reverse Transfer Capacitance				1.2	pF
e_n	Equivalent Short-Circuit Input Noise Voltage		f = 10 kHz		20	$\frac{nV}{\sqrt{Hz}}$
NF	Spot Noise Figure		f = 10 kHz, R_G = 100k		1	dB

Matching Characteristics

PARAMETER		CONDITIONS		2N5911		2N5912		UNITS
				MIN	MAX	MIN	MAX	
$\lvert I_{G1}-I_{G2}\rvert$	Differential Gate Current	V_{DG} = 10V, I_D = 5 mA	125°C		20		20	nA
$\frac{I_{DSS1}}{I_{DSS2}}$	Saturation Drain Current Ratio	V_{DS} = 10V, V_{GS} = 0, (Note 1)		0.95	1	0.95	1	
$\lvert V_{GS1}-V_{GS2}\rvert$	Differential Gate-Source Voltage	V_{DG} = 10V, I_D = 5 mA			10		15	mV
$\frac{\Delta\lvert V_{GS1}-V_{GS2}\rvert}{\Delta T}$	Gate-Source Voltage Differential Drift (Measured at End Points, T_A and T_B)		T_A = 25°C, T_B = 125°C		20		40	μV/°C
			T_A = −55°C, T_B = 25°C		20		40	
$\frac{g_{fs1}}{g_{fs2}}$	Transconductance Ratio		f = 1 kHz	0.95	1	0.95	1	

Note 1: Pulse width 300 μs, duty cycle ≤ 3%.