2N5911, 2N5912

Dual N-Channel Silicon Junction Field-Effect Transistor

- **Wideband Differential Amplifiers**

Absolute maximum ratings at T_A = 25°C

Continuous Forward Gate Current	50 mA
Total Device Power Dissipation	500 mW
Power Derating	4 mW°C
Storage Temperature Range	–65°C to + 200°C

At 25°C free air temperature:		2N5911		2N5912		Process NJ30L or NJ36D		
Static Electrical Characteristics		**Min**	**Max**	**Min**	**Max**	**Unit**	**Test Conditions**	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 25		– 25		V	I_G = – 1 µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}		– 100		– 100	pA	V_{GS} = – 15V, V_{DS} = ØV	
			– 250		– 250	nA	V_{GS} = – 15V, V_{DS} = ØV	T_A = 150°C
Gate Operating Current	I_G		– 100		– 100	pA	V_{DG} = 10V, I_D = 5 mA	
			– 100		– 100	nA	V_{DG} = 10V, I_D = 5 mA	T_A = 125°C
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 1	– 5	– 1	– 5	V	V_{DS} = 10V, I_D = 1 nA	
Gate Source Voltage	V_{GS}	– 0.3	– 4	– 0.3	– 4	V	V_{DS} = 10V, I_D = 5 mA	
Drain Saturation Current (Pulsed)	I_{DSS}	7	40	7	40	mA	V_{DS} = 10V, V_{GS} = ØV	
Dynamic Electrical Characteristics								
Common Source Forward Transconductance	g_{fs}	5000	10000	5000	10000	µS	V_{DG} = 10V, I_D = 5 mA	f = 1 kHz
		5000	10000	5000	10000	µS	V_{DG} = 10V, I_D = 5 mA	f = 100 MHz
Common Source Output Conductance	g_{os}		100		100	µS	V_{DG} = 10V, I_D = 5 mA	f = 1 kHz
			150		150	µS	V_{DG} = 10V, I_D = 5 mA	f = 100 MHz
Common Source Input Capacitance	C_{iss}		5		5	pF	V_{DG} = 10V, I_D = 5 mA	f = 1 MHz
Common Source Reverse Transfer Capacitance	C_{rss}		1.2		1.2	pF	V_{DG} = 10V, I_D = 5 mA	f = 1 MHz
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		20		20	nV/√Hz	V_{DG} = 10V, I_D = 5 mA	f = 10 kHz
Noise Figure	NF		1		1	dB	V_{DG} = 10V, I_D = 5 mA R_G = 100 KΩ	f = 10 kHz
Differential Gate Current	$I_{G1} - I_{G2}$		20		20	nA	V_{DG} = 10V, I_D = 5 mA	T_A = 125°C
Saturation Drain Current Ratio	I_{DSS1} / I_{DSS2}	0.95	1	0.95	1		V_{DG} = 20V, V_{GS} = ØV	
Differential Gate Source Voltage	$\lvert V_{GS1} - V_{GS2} \rvert$		10		15	mV	V_{DG} = 10V, I_D = 5 mA	
Gate Source Voltage Differential Drift	$\frac{\Delta V_{GS1} - V_{GS2}}{\Delta T}$		20		40	mV	V_{DG} = 10V, I_D = 5 mA	T_A = 25°C, T_B = 125°C
			20		40	mV	V_{DG} = 10V, I_D = 5 mA	T_A = – 55°C, T_B = 25°C
Transconductance Ratio	g_{fs1} / g_{fs2}	0.9	1	0.85	1		V_{DG} = 10V, I_D = 5 mA	f = 1 kHz

SOIC-8 Package
See Section G for Outline Dimensions

Pin Configuration
1 Source 1, 2 Drain 1, 3 Gate 1, 4 N/C,
5 Source 2, 6 Drain 2, 7 Gate 2, 8 Omitted

TO-78 Package
See Section G for Outline Dimensions

Pin Configuration
1 Source 1, 2 Drain 1, 3 Gate 1,
4 Case, 5 Source 2, 6 Drain 2,
7 Gate 2, 8 Omitted

Surface Mount
SMP5911, SMP5912

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