INTERSIL

2N5902-2N5909
Dual Monolithic N-Channel JFET

FEATURES

- Tracking < 5 μV/°C
- I_G < 1 pa
- Matched V_{GS}, $\Delta V_{GS}/\Delta T$, g_{fs}, & g_{oss}

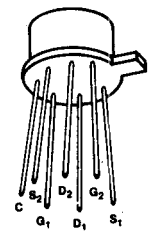
ABSOLUTE MAXIMUM RATINGS

@ 25°C (unless otherwise noted)

Gate-Drain or Gate-Source Voltage	-40 V
Gate Current	10 mA
Device Dissipation (Each Side), T_A = 25°C (Derate 3 mW/°C)	367 mW
Total Device Dissipation, T_A = 25°C (Derate 4 mW/°C)	500 mW
Storage Temperature Range	-65°C to +150°C

PIN CONFIGURATION

TO-99



CHIP TOPOGRAPHY

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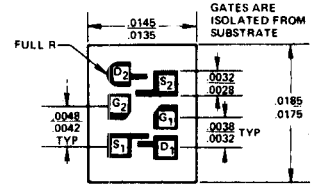

ORDERING INFORMATION

TO-99	WAFER	DICE	TO-99	WAFER	DICE
2N5902	2N5902/W	2N5902/D	2N5906	2N5906/W	2N5906/D
2N5903	2N5903/W	2N5903/D	2N5907	2N5907/W	2N5907/D
2N5904	2N5904/W	2N5904/D	2N5908	2N5908/W	2N5908/D
2N5905	2N5905/W	2N5905/D	2N5909	2N5905/W	2N5909/D

ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

PARAMETER		2N5902-5 MIN	2N5902-5 MAX	2N5906-9 MIN	2N5906-9 MAX	UNIT	TEST CONDITIONS	
I_{GSS}	Gate Reverse Current		-5		-2	pA	V_{GS} = -20 V, V_{DS} = 0	
			-10		-5	nA		125°C
BV_{GSS}	Gate-Source Breakdown Voltage	-40		-40		V	I_G = -1 μA, V_{DS} = 0	
$V_{GS(off)}$	Gate-Source Cutoff Voltage	-0.6	-4.5	-0.6	-4.5		V_{DS} = 10 V, I_D = 1 nA	
V_{GS}	Gate Source Voltage		-4		-4			
I_G	Gate Operating Current		-3		-1	pA	V_{DG} = 10 V, I_D = 30 μA	
			-3		-1	nA		125°C
I_{DSS}	Saturation Drain Current	30	500	30	500	μA		
g_{fs}	Common-Source Forward Transconductance	70	250	70	250	μmho	V_{DS} = 10 V, V_{GS} = 0	f = 1 kHz
g_{os}	Common-Source Output Conductance		5		5			
C_{iss}	Common-Source Input Capacitance		3		3	pF		f = 1 MHz
C_{rss}	Common-Source Reverse Transfer Capacitance		1.5		1.5			
g_{fs}	Common-Source Forward Transconductance	50	150	50	150	μmho	V_{DG} = 10 V, I_D = 30 μA	f = 1 kHz
g_{os}	Common-Source Output Conductance		1		1			
$\overline{e_n}$	Equivalent Short Circuit Input Noise Voltage		0.2		0.1	$\frac{\mu V}{\sqrt{Hz}}$	V_{DS} = 10 V, V_{GS} = 0	
NF	Spot Noise Figure		3		1	dB		f = 100 Hz, R_G = 10 M

PARAMETER		2N5902-6 MIN	2N5902-6 MAX	2N5903-7 MIN	2N5903-7 MAX	2N5904-8 MIN	2N5904-8 MAX	2N5905-9 MIN	2N5905-9 MAX	UNIT	TEST CONDITIONS	
$\lvert I_{G1}-I_{G2}\rvert$	Differential Gate Current		2.0		2.0		2.0		2.0	nA	V_{DG} = 10 V, I_D = 30 μA, T_A = 125°C	2N5902-5
			0.2		0.2		0.2		0.2			2N5906-9
$\frac{I_{DSS1}}{I_{DSS2}}$	Saturation Drain Current Ratio	0.95	1	0.95	1	0.95	1	0.95	1	—	V_{DS} = 10 V, V_{GS} = 0	
$\frac{g_{fs1}}{g_{fs2}}$	Transconductance Ratio	0.97	1	0.97	1	0.95	1	0.95	1		V_{DG} = 10 V, I_D = 30 μA	f = 1 kHz
$\lvert V_{GS1}-V_{GS2}\rvert$	Differential Gate-Source Voltage		5		5		10		15	mV		
$\frac{\Delta\lvert V_{BS1}-V_{GS2}\rvert}{\Delta T}$	Gate-Source Voltage Differential Drift (Measured at end points T_A and T_B)		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		0.2		0.2		0.2		0.2	μmho		f = 1 kHz