2N5905
LOW NOISE, LOW DRIFT MONOLITHIC DUAL N-CHANNEL JFET

The 2N5905 is a high-performance monolithic dual JFET featuring tight matching and low drift over temperature specifications, and is targeted for use in a wide range of precision instrumentation applications where tight tracking is required.

The hermetically sealed TO-78 package is well suited for hi-reliability and harsh environment applications.

(See Packaging Information).

2N5905 Benefits:

- Tight Tracking
- Good matching
- Ultra Low Leakage
- Low Drift

FEATURES	
LOW DRIFT	$\lvert V_{GS1-2}/T \rvert$ = 5µV/°C TYP.
ULTRA LOW LEAKAGE	I_G = 150fA TYP.
LOW PINCHOFF	V_p = 2V TYP.

ABSOLUTE MAXIMUM RATINGS
@ 25°C (unless otherwise noted)

Maximum Temperatures	
Storage Temperature	-65°C to +150°C
Operating Junction Temperature	+150°C

Maximum Voltage and Current for Each Transistor – Note 1		
$-V_{GSS}$	Gate Voltage to Drain or Source	40V
$-V_{DSO}$	Drain to Source Voltage	40V
$-I_{G(f)}$	Gate Forward Current	10mA
$-I_G$	Gate Reverse Current	10µA

Maximum Power Dissipation	
Device Dissipation @ Free Air – Total	40mW @ +125°C

MATCHING CHARACTERISTICS @ 25°C UNLESS OTHERWISE NOTED

SYMBOL	CHARACTERISTICS	VALUE	UNITS	CONDITIONS
$\lvert V_{GS1-2}/T \rvert$ max.	DRIFT VS. TEMPERATURE	40	µV/°C	V_{DG}=10V, I_D=30µA T_A=-55°C to +125°C
$\lvert V_{GS1-2} \rvert$ max.	OFFSET VOLTAGE	15	mV	V_{DG}=10V, I_D=30µA

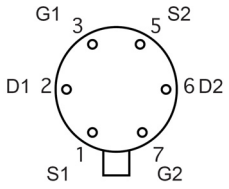
ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
BV_{GSS}	Breakdown Voltage	40	60	--	V	V_{DS} = 0 I_D=1nA
BV_{GGO}	Gate-To-Gate Breakdown	40	--	--	V	I_G= 1nA I_D= 0 I_S= 0
	TRANSCONDUCTANCE					
Y_{fss}	Full Conduction	70	300	500	µmho	V_{DG}= 10V V_{GS}= 0V f = 1kHz
Y_{fs}	Typical Operation	50	100	200	µmho	V_{DG}= 10V I_D= 30µA f = 1kHz
$\lvert Y_{FS1-2}/Y_{FS} \rvert$	Mismatch	--	1	5	%	
	DRAIN CURRENT					
I_{DSS}	Full Conduction	60	400	1000	µA	V_{DG}= 10V V_{GS}= 0V
$\lvert I_{DSS1-2}/I_{DSS} \rvert$	Mismatch at Full Conduction	--	2	5	%	
	GATE VOLTAGE					
V_{GS}(off) or V_p	Pinchoff voltage	0.6	2	4.5	V	V_{DS}= 10V I_D= 1nA
V_{GS}(on)	Operating Range	--	--	4	V	V_{DS}=10V I_D=30µA
	GATE CURRENT					
$-I_G$max.	Operating	--	--	3	pA	V_{DG}= 10V I_D= 30µA
$-I_G$max.	High Temperature	--	--	3	nA	T_A= +125°C
$-I_{GSS}$max.	At Full Conduction	--	--	5	pA	V_{DS} =0V V_{GS}= 20V
$-I_{GSS}$max.	High Temperature	--	--	10	nA	T_A= +125°C
I_{GGO}	Gate-to-Gate Leakage	--	1	--	pA	V_{GG}= 20V
	OUTPUT CONDUCTANCE					
Y_{OSS}	Full Conduction	--	--	5	µmho	V_{DG}= 10V V_{GS}= 0V
Y_{OS}	Operating	--	0.1	0.1		V_{DG}= 10V I_D=30µA
$\lvert Y_{OS1-2} \rvert$	Differential	--	0.01	0.1		
	COMMON MODE REJECTION					
CMR	-20 log $\lvert \Delta V_{GS1-2}/\Delta V_{DS} \rvert$	--	90	--	dB	ΔV_{DS} = 10 to 20V I_D=30µA
CMR	-20 log $\lvert \Delta V_{GS1-2}/\Delta V_{DS} \rvert$	--	90	--		ΔV_{DS} = 5 to 10V I_D=30µA
	NOISE					V_{DS}= 10V V_{GS}= 0V R_G= 10MΩ
NF	Figure	--	--	1	dB	f= 100Hz NBW= 6Hz
e_n	Voltage	--	20	70	nV/√Hz	V_{DG}=10V I_D=30µA f=10Hz NBW=1Hz
	CAPACITANCE					
C_{ISS}	Input	--	--	3	pF	V_{DS}= 10V V_{GS}= 0V f= 1MHz
C_{RSS}	Reverse Transfer	--	--	1.5		
C_{DD}	Drain-to-Drain	--	--	0.1		V_{DG} = 20V I_D=30µA

Note 1 – These ratings are limiting values above which the serviceability of any semiconductor may be impaired

Click To Buy

TO-78 (Bottom View)



Available Packages:

2N5905 in TO-78
2N5905 available as bare die
Please contact Micross for full package and die dimensions

Micross Components Europe

Tel: +44 1603 788967
Email: chipcomponents@micross.com
Web: http://www.micross.com/distribution

Information furnished by Linear Integrated Systems and Micross Components is believed to be accurate and reliable. However, no responsibility is assumed for its use; nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Linear Integrated Systems.