LINEAR SYSTEMS

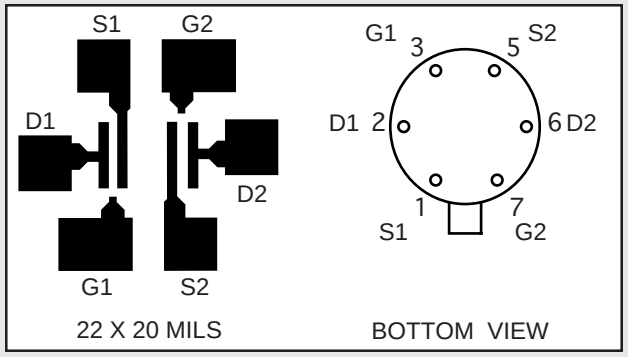
Linear Integrated Systems

LS5905 LS5906 LS5907 LS5908 LS5909

LOW LEAKAGE LOW DRIFT MONOLITHIC DUAL N-CHANNEL JFET

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

ABSOLUTE MAXIMUM RATINGS NOTE 1 @ 25°C (unless otherwise noted)		
Maximum Temperatures		
Storage Temperature		-65° 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

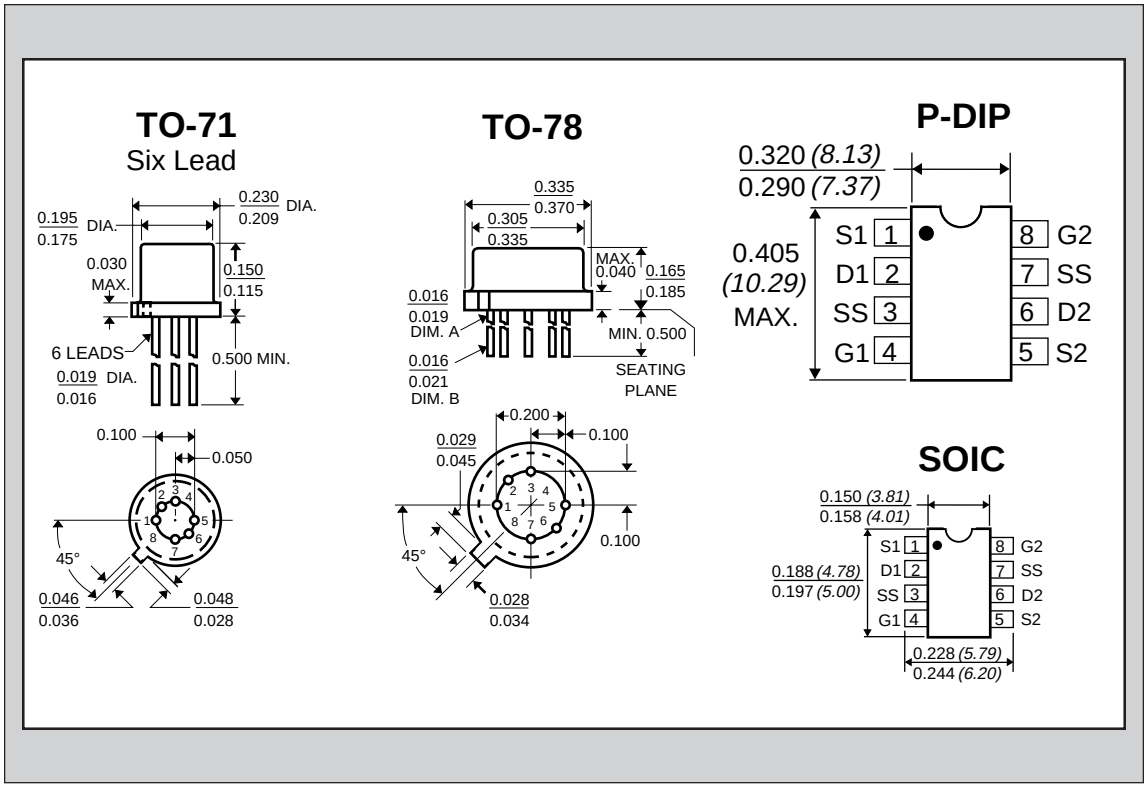


ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	LS5906	LS5907	LS5908	LS5909	LS5905	UNITS	CONDITIONS
$\lvert\Delta V_{GS1-2}/\Delta T\rvert$ max.	Drift vs. Temperature	5	10	20	40	40	µV/°C	V_{DG}= 10V, I_D= 30µA T_A=-55°C to +125°C
$\lvert V_{GS1-2}\rvert$ max.	Offset Voltage	5	5	10	15	15	mV	V_{DG}=10V I_D= 30µA
$-I_G$max.	Operating	1	1	1	1	3	pA	
$-I_G$max.	High Temperature	1	1	1	1	3	nA	T_A= +125°C
$-I_{GSS}$max.	At Full Conduction	2	2	2	2	5	pA	V_{DS}= 0V V_{GS}= 20V
$-I_{GSS}$max.	High Temperature	5	5	5	5	10	nA	T_A= +125°C

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}= 0	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}= 0	
$\lvert I_{DSS1-2}/I_{DSS}\rvert$	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}	Operating Range	--	--	4	V	V_{DS}= 10V	I_D= 30µA	
	GATE CURRENT							
I_{GGO}	Gate-to-Gate Leakage	--	1	--	pA	V_{GG}=20V		

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
	OUTPUT CONDUCTANCE					
Y_{OSS}	Full Conduction	--	--	5	µmho	V_{DG}= 10V V_{GS}= 0
Y_{OS}	Operating	--	0.1	0.1	µmho	V_{DG}= 10V I_D= 30µA
$\|Y_{OS1-2}\|$	Differential	--	0.01	0.1	µmho	
	COMMON MODE REJECTION					
CMR	-20 log $\|\Delta V_{GS1-2}/\Delta V_{DS}\|$	--	90	--	dB	ΔV_{DS}= 10 to 20V I_D= 30µA
CMR	-20 log $\|\Delta V_{GS1-2}/\Delta V_{DS}\|$	--	90	--	dB	ΔV_{DS}= 5 to 10V I_D= 30µA
	NOISE					
NF	Figure	--	--	1	dB	V_{DS}= 10V V_{GS}= 0 R_G= 10MΩ 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}= 0 f= 1MHz
C_{RSS}	Reverse Transfer	--	--	1.5	pF	V_{DS}= 10V V_{GS}= 0 f= 1MHz
C_{DD}	Drain-to-Drain	--	--	0.1	pF	V_{DG}= 20V I_D= 30µA



NOTES:

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