

LINEAR SYSTEMS

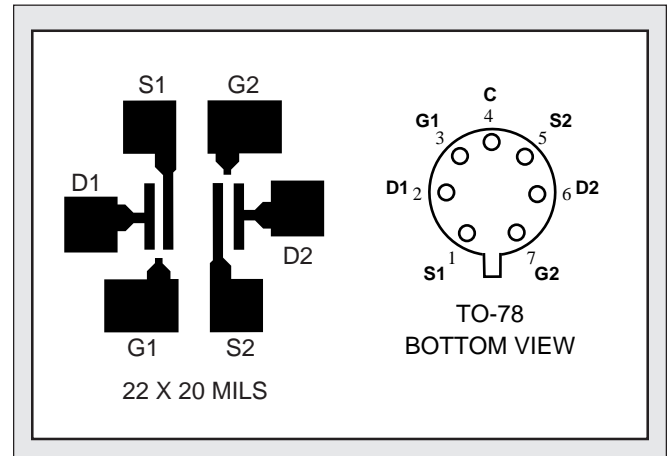
Linear Integrated Systems

LS421, LS422, LS423, LS424, LS425, LS426

LOW LEAKAGE LOW DRIFT
MONOLITHIC DUAL N-CHANNEL JFET

FEATURES

HIGH INPUT IMPEDANCE	$I_G=0.25\mu\text{A MAX}$	
HIGH GAIN	$g_{fs}=120\mu\text{mho MIN}$	
LOW POWER OPERATION	$V_{GS(off)}=2\text{V MAX}$	
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
Maximum Power Dissipation		
Device Dissipation @ Free Air - Total	400mW @ +125°C	



ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

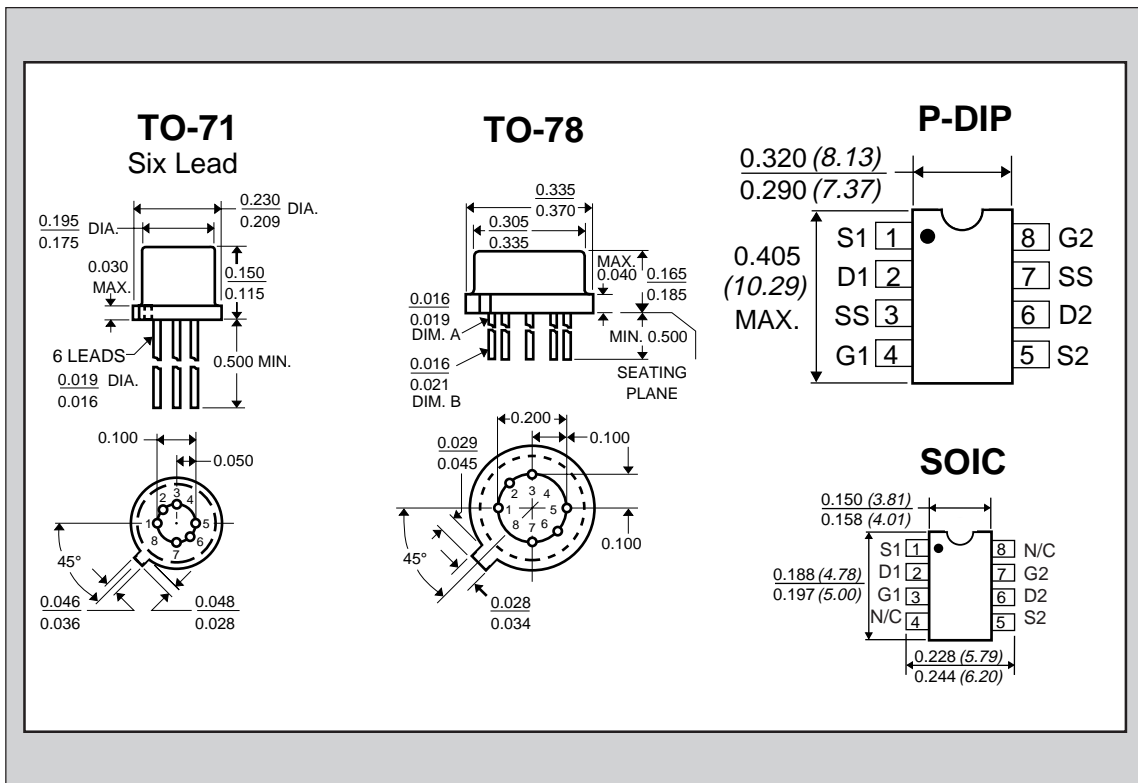
SYMBOL	CHARACTERISTICS	LS421	LS422	LS423	LS424	LS425	LS426	UNITS MAX	CONDITIONS
$ \Delta V_{GS1-2}/\Delta T $ max.	Drift vs. Temperature	10	25	40	10	25	40	$\mu\text{V}/^\circ\text{C}$	$V_{DG}=10\text{V}$ $I_D=30\mu\text{A}$ $T_A=-55^\circ\text{C}$ to $+125^\circ\text{C}$
$ V_{GS1-2} $ max.	Offset Voltage	10	15	25	10	15	25	mV	$V_{DG}=10\text{V}$ $I_D=30\mu\text{A}$
$V_{GS(off)}$	GATE VOLTAGE Pinchoff Voltage	2.0	2.0	2.0	3.0	3.0	3.0	V	$V_{DS}=10\text{V}$ $I_D=1\text{nA}$
V_{GS}	Operating Range	1.8	1.8	1.8	2.9	2.9	2.9	V	$V_{DG}=10\text{V}$ $I_D=30\mu\text{A}$
I_G max.	Operating	.25	.25	.25	.500	.500	.500	pA	$V_{DG}=10\text{V}$ $I_D=30\mu\text{A}$
$-I_G$ max.	High Temperature	250	250	250	500	500	500	pA	$T_A=+125^\circ\text{C}$
$-I_{GSS}$ max.	At Full Conduction	1.0	1.0	1.0	3.0	3.0	3.0	pA	$V_{DS}=0\text{V}$ $V_{GS}=20\text{V}$
$-I_{GSS}$ max.	High Temperature	1.0	1.0	1.0	3.0	3.0	3.0	nA	$T_A=+125^\circ\text{C}$

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS	
BV_{GSS}	Breakdown Voltage	40	60	--	V	$V_{DS}=0$	$I_G=1\text{nA}$
BV_{GGO}	Gate-to-Gate Breakdown	40	--	--	V	$I_G=1\mu\text{A}$	$I_D=0$ $I_S=0$
Y_{fss}	TRANSCONDUCTANCE Full Conduction	300	--	1500	μmho	$V_{DS}=10\text{V}$	$V_{GS}=0$ $f=1\text{kHz}$
Y_{fs}	Typical Operation	120	200	350	μmho	$V_{DG}=10\text{V}$	$I_D=30\mu\text{A}$ $f=1\text{kHz}$
I_{DSS}	DRAIN CURRENT Full Conduction	60	--	1000	μA	LS421-3	$V_{DS}=10\text{V}$ $V_{GS}=0$
		60	--	1800	μA	LS424-6	

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SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
OUTPUT CONDUCTANCE						
Y_{oss}	Full Conduction	--	--	10	μmho	$V_{DS} = 10\text{V}$ $V_{GS} = 0$
Y_{os}	Operating	--	0.1	3.0	μmho	$V_{DG} = 10\text{V}$ $I_D = 30\mu\text{A}$
COMMON MODE REJECTION						
CMR	$-20 \log \Delta V_{GS1-2} / \Delta V_{DS} $	--	90	--	dB	$\Delta V_{DS} = 10 \text{ to } 20\text{V}$ $I_D = 30\mu\text{A}$
CMR	$-20 \log \Delta V_{GS1-2} / \Delta V_{DS} $	--	90	--	dB	$\Delta V_{DS} = 5 \text{ to } 10\text{V}$ $I_D = 30\mu\text{A}$
NOISE						
NF	Figure	--	--	1.0	dB	$V_{DG} = 10\text{V}$ $I_D = 30\mu\text{A}$ $R_G = 10\text{M}\Omega$ $f = 10\text{Hz}$
e_n	Voltage	--	20	70	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DG} = 10\text{V}$ $I_D = 30\mu\text{A}$ $f = 10\text{Hz}$
			10			$V_{DG} = 10\text{V}$ $I_D = 30\mu\text{A}$ $f = 1\text{kHz}$
CAPACITANCE						
C_{ISS}	Input	--	--	3.0	pF	$V_{DS} = 10\text{V}$ $V_{GS} = 0$ $f = 1\text{MHz}$
C_{RSS}	Reverse Transfer	--	--	1.5	pF	$V_{DS} = 10\text{V}$ $V_{GS} = 0$ $f = 1\text{MHz}$



S1 N/C
D1 G2
G1 D2
N/C S2

NOTES:

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