

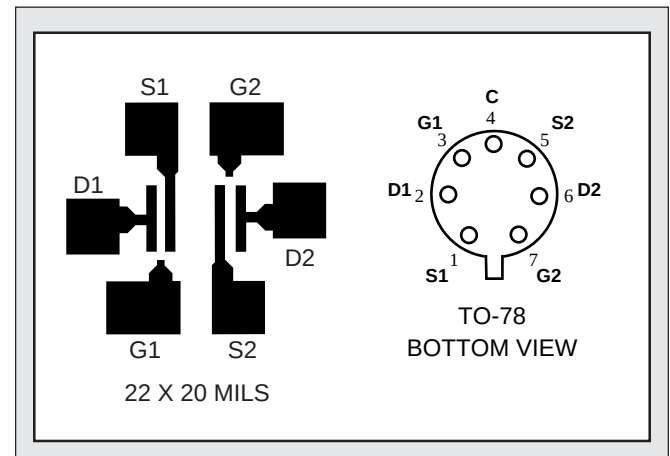
LINEAR SYSTEMS

Linear Integrated Systems

LS421, LS422, LS423, LS424, LS425, LS426

LOW LEAKAGE LOW DRIFT
MONOLITHIC DUAL N-CANNEL JFET

FEATURES		
HIGH INPUT IMPEDANCE	$I_G=0.25\text{pA MAX}$	
HIGH GAIN	$g_{fs}=120\mu\text{mho MIN}$	
LOW POWER OPERATION	$V_{GS(off)}=2\text{V MAX}$	
ABSOLUTE MAXIMUM RATINGS <u>NOTE 1</u>		
@ 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 <u>NOTE 1</u>		
-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)

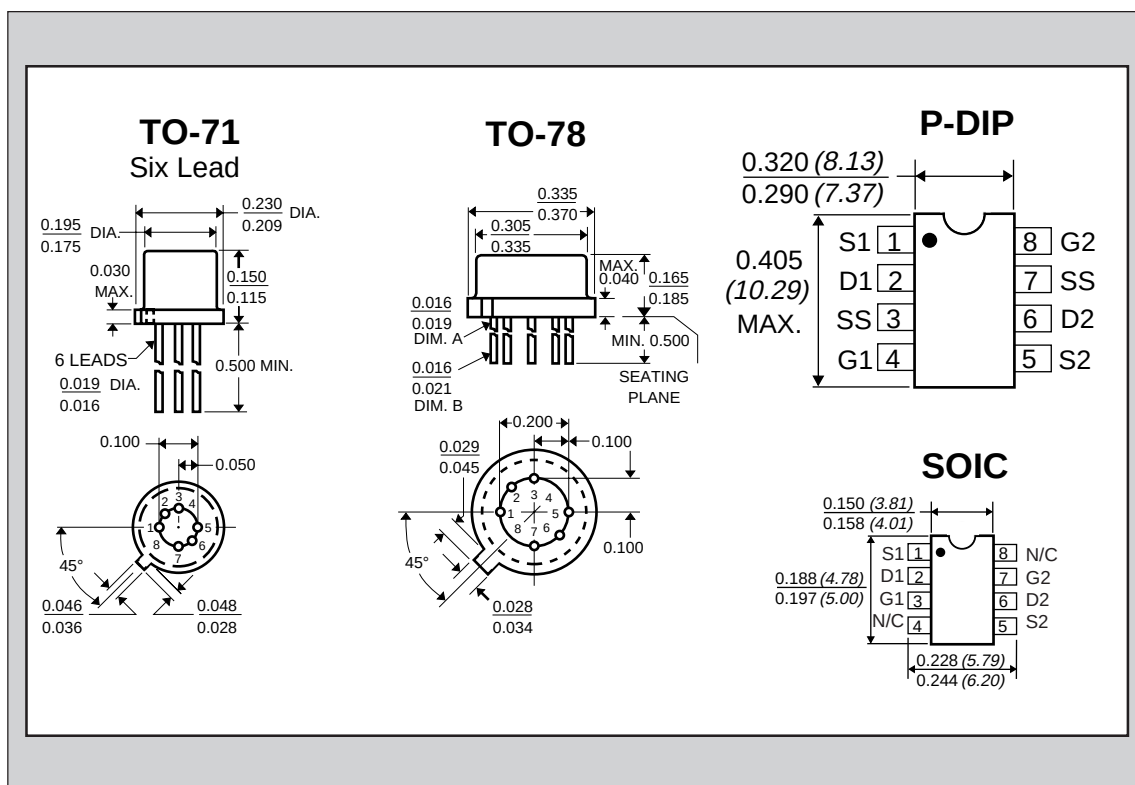
SYMBOL	CHARACTERISTICS	LS421	LS422	LS423	LS424	LS425	LS426	UNITS MAX	CONDITIONS
$ \Delta V_{GS1-2} / \Delta T \text{ max.}$	Drift vs. Temperature	10	25	40	10	25	40	$\mu\text{V}/^\circ\text{C}$	$V_{DG} = 10 \text{ V}$ $I_D = 30 \mu\text{A}$ $T_A = -55^\circ\text{C to } +125^\circ\text{C}$
$ V_{GS1-2} \text{ max.}$	Offset Voltage	10	15	25	10	15	25	mV	$V_{DG} = 10 \text{ V}$ $I_D = 30 \mu\text{A}$
$V_{GS(off)}$	<u>GATE VOLTAGE</u> 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	$V_{DG} = 10 \text{ V}$ $I_D = 30 \mu\text{A}$
$I_G \text{ max.}$	Operating	.25	.25	.25	.500	.500	.500	pA	$V_{DG} = 10 \text{ V}$ $I_D = 30 \mu\text{A}$
$-I_G \text{ max.}$	High Temperature	250	250	250	500	500	500	pA	$T_A = +125^\circ\text{C}$
$-I_{GSS} \text{ max.}$	At Full Conduction	1.0	1.0	1.0	3.0	3.0	3.0	pA	$V_{DS} = 0 \text{ V}$ $V_{GS} = 20 \text{ V}$
$-I_{GSS} \text{ max.}$	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}	<u>TRANSCONDUCTANCE</u> 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}	<u>DRAIN CURRENT</u>	60	--	1000	μA	LS421-3	$V_{DS} = 10 \text{ V}$ $V_{GS} = 0$
	Full Conduction	60	--	1800	μA	LS424-6	

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4042 Clipper Ct., Fremont, CA 94538 TEL: (510) 490-9160 • FAX: (510) 353-0261

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
OUTPUT CONDUCTANCE						
Y _{oss}	Full Conduction	--	--	10	μmho	V _{DS} = 10V V _{GS} = 0
Y _{os}	Operating	--	0.1	3.0	μmho	V _{DG} = 10V I _D = 30μA
COMMON MODE REJECTION						
CMR	-20 log ΔV _{GS1-2} /ΔV _{DS}	--	90	--	dB	ΔV _{DS} = 10 to 20V I _D = 30μA
CMR	-20 log ΔV _{GS1-2} /ΔV _{DS}	--	90	--	dB	ΔV _{DS} = 5 to 10V I _D = 30μA
NOISE						
NF	Figure	--	--	1.0	dB	V _{DG} = 10V I _D = 30μA R _G = 10MΩ f= 10Hz
e _n	Voltage	--	20	70	nV/√Hz	V _{DG} = 10V I _D = 30μA f= 10Hz
			10			V _{DG} = 10V I _D = 30μA f= 1kHz
CAPACITANCE						
C _{ISS}	Input	--	--	3.0	pF	V _{DS} = 10V V _{GS} = 0 f= 1MHz
C _{RSS}	Reverse Transfer	--	--	1.5	pF	V _{DS} = 10V V _{GS} = 0 f= 1MHz



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.