

LINEAR SYSTEMS

Linear Integrated Systems

LS421, LS422, LS423, LS424, LS425, LS426

LOW LEAKAGE LOW DRIFT
MONOLITHIC DUAL N-CHANNEL JFET

FEATURES

HIGH INPUT IMPEDANCE	$I_G=0.25\text{pA MAX}$
HIGH GAIN	$gfs=120\mu\text{mho MIN}$
LOW POWER OPERATION	$V_{GS(off)}=2\text{V MAX}$

ABSOLUTE MAXIMUM RATINGS NOTE 1

@ 25°C (unless otherwise noted)

Maximum Temperatures

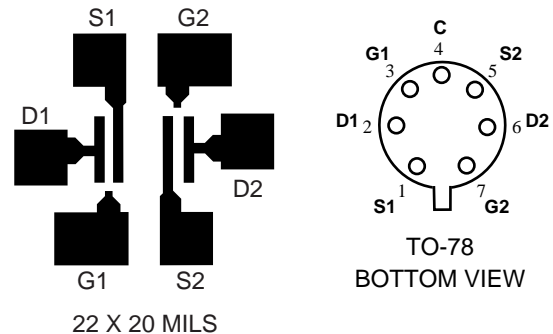
Storage Temperature	-65° to +150°C
Operating Junction Temperature	+150°C

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
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ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

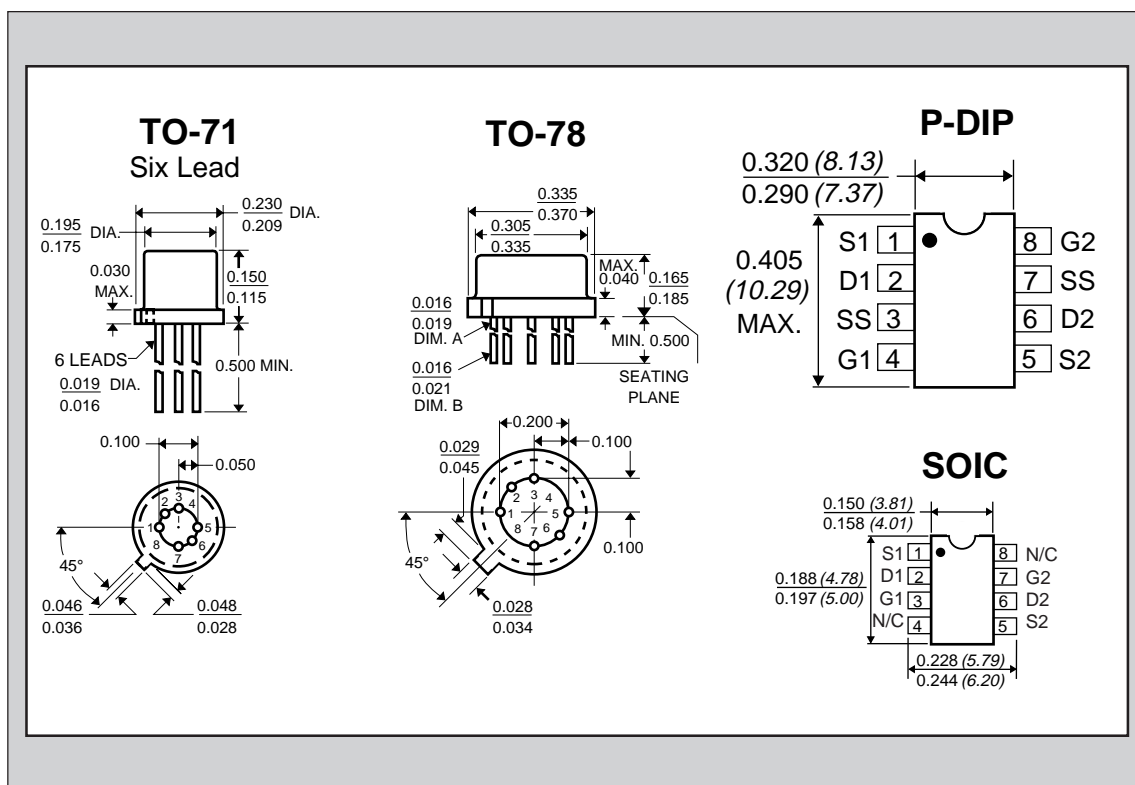
SYMBOL	CHARACTERISTICS	LS421	LS422	LS423	LS424	LS425	LS426	UNITS MAX	CONDITIONS
$ \Delta V_{GS1-2}/\Delta T \text{ max.}$	Drift vs. Temperature	10	25	40	10	25	40	$\mu\text{V}/^\circ\text{C}$	$V_{DG}=10\text{V}$ $I_D=30\mu\text{A}$ $T_A=-55^\circ\text{C}$ to $+125^\circ\text{C}$
$ V_{GS1-2} \text{ max.}$	Offset Voltage	10	15	25	10	15	25	mV	$V_{DG}=10\text{V}$ $I_D=30\mu\text{A}$
$V_{GS(off)}$	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	$V_{DG}=10\text{V}$ $I_D=30\mu\text{A}$
$I_G \text{ max.}$	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}	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	$V_{DS}=10\text{V}$ $V_{GS}=0$
		60	--	1800	μA	

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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 f= 10Hz	I _D = 30μA R _G = 10MΩ
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.