LINEAR SYSTEMS

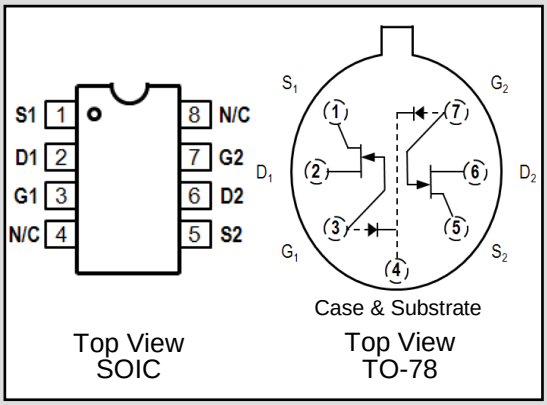
Twenty-Five Years Of Quality Through Innovation

U421, U422, U423, U424, U425, U426

LOW LEAKAGE LOW DRIFT MONOLITHIC DUAL N-CHANNEL JFET

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

ABSOLUTE MAXIMUM RATINGS NOTE 1 @ 25 °C (unless otherwise noted)		
Maximum Temperatures		
Storage Temperature		-55 to +150°C
Operating Junction Temperature		-55 to +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		
Total Device Dissipation TA = 25ºC		500^2 mW

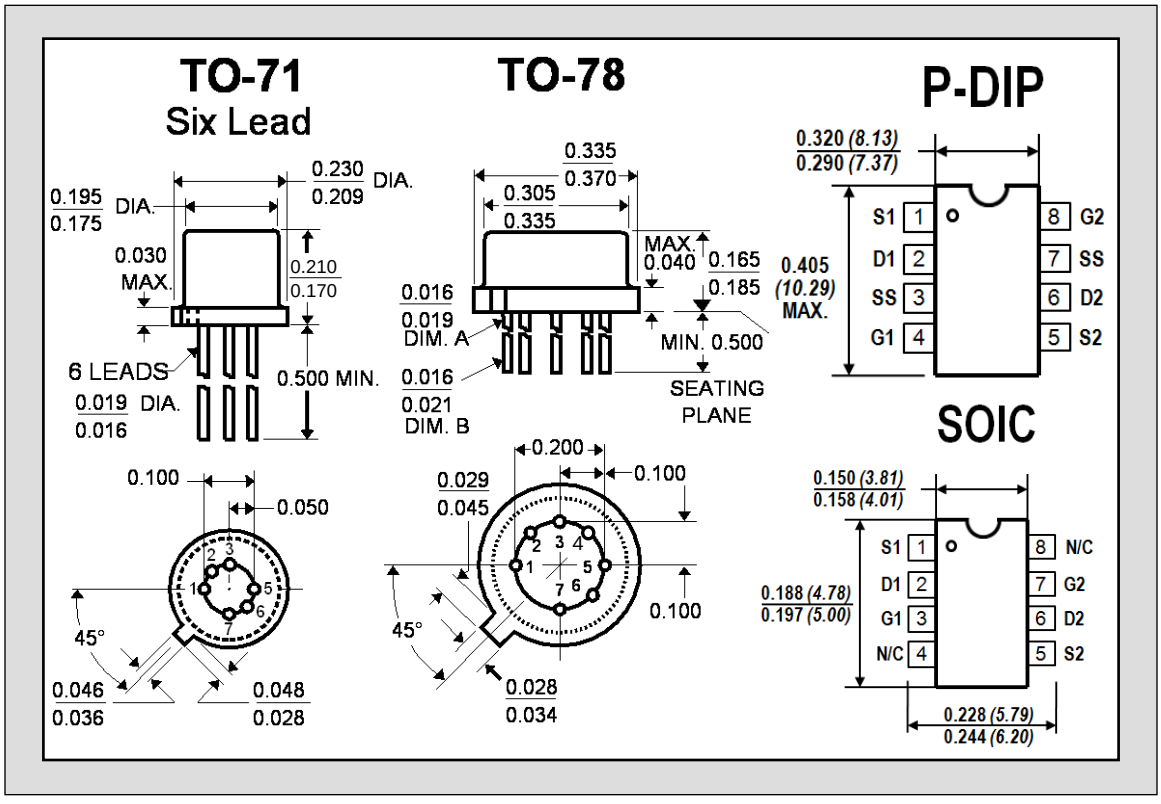


ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC[3]		U421	U422	U423	U424	U425	U426	UNITS	CONDITIONS
$\lvert\Delta V_{GS1-2}/\Delta T\rvert$ max.	Drift vs. Temperature		10	25	40	10	25	40	µV/ºC	V_{DG} = 10V I_D = 30µA T_A = -55ºC to +125ºC
$\lvert V_{GS1-2}\rvert$ max.	Offset Voltage		10	15	25	10	15	25	mV	V_{DG} =10V I_D = 30µA
	GATE VOLTAGE									
$V_{GS(off)}$	Pinchoff Voltage	Max	-2.0	-2.0	-2.0	-3.0	-3.0	-3.0	V	V_{DS}=10V I_D=1nA
		Min	-0.4	-0.4	-0.4	-0.4	-0.4	-0.4		
V_{GS}	Operating Range	Max	-1.8	-1.8	-1.8	-2.9	-2.9	-2.9	V	V_{DS}=10V I_D=30µA
$I_G$max.	Operating		-.25	-.25	-.25	-.500	-.500	-.500	pA	V_{DS}=10V I_D=30µA
$I_G$max.	High Temperature		-250	-250	-250	-500	-500	-500	pA	T_A=+125ºC
I_{GSS}max.	Gate Reverse Current		-1.0	-1.0	-1.0	-3.0	-3.0	-3.0	pA	V_{DS}=0V V_{GS}=-20V
I_{GSS}max.	Gate Reverse Current		1.0	1.0	1.0	3.0	3.0	3.0	nA	T_A=+125ºC

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNITS	CONDITIONS		
BV_{GSS}	Breakdown Voltage	-40	-60	--	V	V_{DS}= 0V	I_G= -1nA	
BV_{GGO}	Gate-to-Gate Breakdown	±40	--	--	V	I_{G1G2}= ±1µA	I_D= 0A	I_S= 0A
	TRANSCONDUCTANCE							
gfs	Full Conduction	300	--	1500	µS	V_{DS}= 10V	V_{GS}= 0	f = 1kHz
gfs	Typical Operation	120	200	350	µS	V_{DG}= 10V	I_D= 30µA	f = 1kHz
	DRAIN CURRENT	60	--	1000	µA	U421-3	V_{DS}= 10V	V_{GS}= 0
I_{DSS}	Full Conduction	60	--	1800	µA	U424-6		

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNITS	CONDITIONS
	OUTPUT CONDUCTANCE					
g_{os}	Full Conduction	--	--	10	µS	V_{DS}= 10V V_{GS}= 0
g_{os}	Operating	--	0.1	3.0	µS	V_{DG}= 10V I_D= 30µA
	COMMON MODE REJECTION					
CMRR	-20 log $\lvert V_{GS1-2}/\Delta V_{DS} \rvert$	--	90	--	dB	ΔV_{DS}= 10 to 20V I_D=30µA
CMRR	-20 log $\lvert V_{GS1-2}/\Delta V_{DS} \rvert$	--	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



NOTES:

1. These ratings are limiting values above which the serviceability of any semiconductor may be impaired
2. Derate 4mW/ºC above 25ºC
3. All MIN/TYP/MAX limits are absolute numbers. Negative signs indicate electrical polarity only.

Linear Integrated Systems (LIS) is a 25-year-old, third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to LIS is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company President John H. Hall. Hall, a protégé of Silicon Valley legend Dr. Jean Hoerni, was the director of IC Development at Union Carbide, co-founder and vice president of R&D at Intersil, and founder/president of Micro Power Systems.

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