

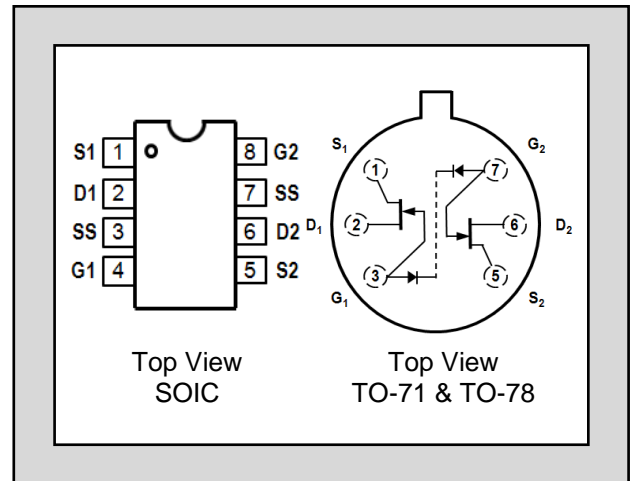
LINEAR SYSTEMS

Over 30 Years of Quality Through Innovation

LS830 LS831 LS832 LS833

ULTRA LOW LEAKAGE LOW DRIFT
MONOLITHIC DUAL N-CANNEL
JFET AMPLIFIER

FEATURES		
ULTRA LOW DRIFT	$ \Delta V_{GS1-2}/\Delta T = 5\mu V/^{\circ}C$ max.	
ULTRA LOW NOISE	$I_G=80fA$ TYP.	
LOW NOISE	$e_n=70nV/\sqrt{Hz}$ TYP.	
LOW CAPACITANCE	$C_{ISS}=3pf$ 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 _{DSS}	Drain to Source Voltage	40V
-I _{G(f)}	Gate Forward Current	10mA
-I _G	Gate Reverse Current	10µA
Maximum Power Dissipation @ TA = 25°C		
Continuous Power Dissipation (Total)		500mW

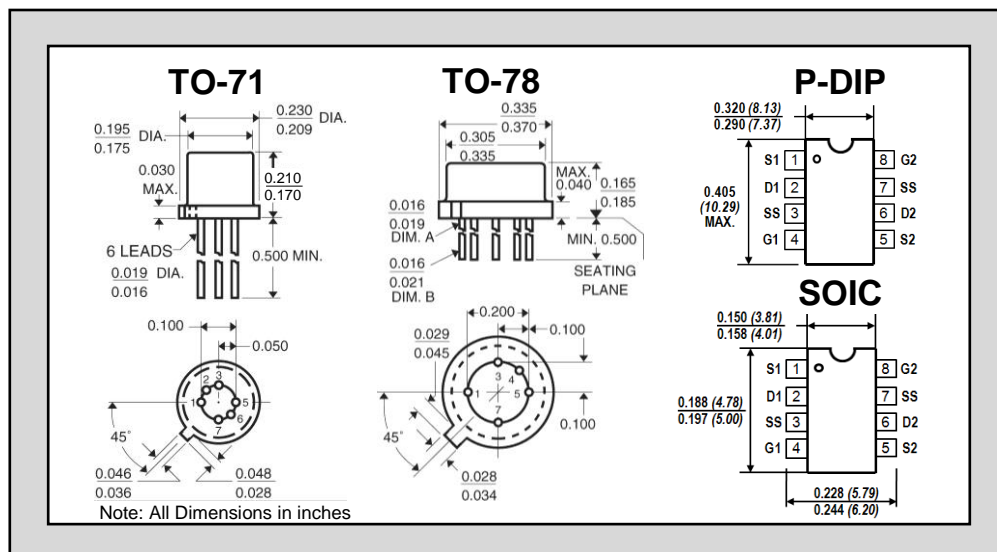


SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNITS	CONDITIONS
BV _{GSS}	Breakdown Voltage	-40	-60	--	V	V _{DS} = 0 I _G = -1nA
BV _{GGO}	Gate-to-Gate Breakdown	±40	--	--	V	I _G = ±1µA I _D = 0 I _S = 0
TRANSCONDUCTANCE						
g _{fs}	Full Conduction	70	300	500	µS	V _{DG} = 10V V _{GS} = 0 f = 1kHz
g _{fs}	Typical Operation	50	100	200	µS	V _{DG} = 10V I _D = 30µA f = 1kHz
$ g_{fs1-2}/g_{fs} $	Differential	--	1	5	%	
DRAIN CURRENT						
I _{DSS}	Full Conduction	60	400	1000	µA	V _{DG} = 10V V _{GS} = 0
$ I_{DSS1-2}/I_{DSS} $	Differential at Full Conduction	--	2	5	%	

ELECTRICAL CHARACTERISTICS TA = 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	LS830	LS831	LS832	LS833	UNITS	CONDITIONS
$ \Delta V_{GS1-2}/\Delta T $ max.	Drift vs. Temperature	5	10	20	75	µV/°C	V _{DG} = 10V I _D = 30µA TA = -55°C to +125°C
$ V_{GS1-2} $ max.	Offset Voltage	25	25	25	25	mV	V _{DG} = 10V I _D = 30µA
-I _G typical	Operating	0.1	0.1	0.1	0.5	pA	
-I _G typical	High Temperature	0.1	0.1	0.1	0.5	nA	TA = +125°C
I _{GSS} typical	At Full Conduction	0.2	0.2	0.2	1.0	pA	V _{GS} = 20V, V _{GS} = 0V
I _{GSS} typical	High Temperature	0.5	0.5	0.5	1.0	nA	V _{GS} = 0 V _{GS} = 20V TA = +125°C

SYMBOL	CHARACTERISTIC	MIN.	TYP.	MAX.	UNITS	CONDITIONS
$V_{GS(off)}$	GATE-SOURCE Cutoff Voltage	-0.6	-2	-4.5	V	$V_{DS}= 10V$ $I_D= 1nA$
V_{GS}	Operating Range	--	--	-4	V	$V_{DG}= 10V$ $I_D= 30\mu A$
I_{GGO}	GATE CURRENT Gate-to-Gate Leakage	--	1	--	pA	$V_{GG}= \pm 20V$ $I_D = I_S = 0A$
g_{OSS}	OUTPUT CONDUCTANCE Full Conduction	--	--	5	μS	$V_{DG}= 10V$ $V_{GS}= 0$
g_{OS}	Operating	--	--	0.5	μS	$V_{DG}= 10V$ $I_D= 30\mu A$
$ g_{OS1-2} $	Differential	--	--	0.1	μS	
CMRR	COMMON MODE REJECTION $-20 \log \Delta V_{GS1-2}/ \Delta V_{DS} $	--	90	--	dB	$\Delta V_{DS}= 10$ to $20V$ $I_D=30\mu A$
CMRR	$-20 \log \Delta V_{GS1-2}/ \Delta V_{DS} $	--	90	--	dB	$\Delta V_{DS}= 5$ to $10V$ $I_D=30\mu A$
NF	NOISE Figure	--	--	1	dB	$V_{DS}= 10V$ $V_{GS}= 0$ $R_G=10M\Omega$ $f= 100Hz$ $NBW= 6Hz$
e_n	Voltage	--	20	70	nV/ \sqrt{Hz}	$V_{DG}= 10V$ $I_D= 30\mu A$ $f= 10Hz$ $NBW= 1Hz$
C_{ISS}	CAPACITANCE 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	$V_{DG}= 10V$ $I_D= 30\mu A$



NOTES:

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

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