

LINEAR SYSTEMS

Linear Integrated Systems

FEATURES	
ULTRA LOW DRIFT	$I V_{GS1-2} / T_I = 5 \mu V/^{\circ}C$ max.
ULTRA LOW LEAKAGE	$I_G = 80 fA$ TYP.
LOW NOISE	$e_n = 70 nV / \sqrt{Hz}$ TYP.
LOW CAPACITANCE	$C_{ISS} = 3 pf$ 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
-I _G	Gate Reverse Current	10μA

Maximum Power Dissipation	
Device Dissipation @ Free Air - Total	40mW @ +125°C

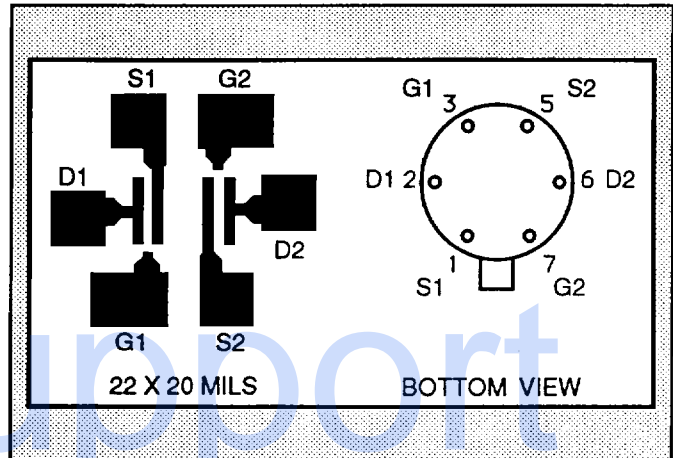
ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	LS830	LS831	LS832	LS833	UNITS	CONDITIONS
$I V_{GS1-2} / T_I$ max.	Drift vs. Temperature	5	10	20	75	μV/°C	$V_{DG} = 10V$ $I_D = 30\mu A$ $T_A = -55^{\circ}C$ to $+125^{\circ}C$
$I V_{GS1-2}$ max.	Offset Voltage	25	25	25	25	mV	$V_{DG} = 10V$ $I_D = 30\mu A$
-I _G max	Operating	0.1	0.1	0.1	0.5	pA	
-I _G max	High Temperature	0.1	0.1	0.1	0.5	nA	$T_A = +125^{\circ}C$
-I _{GSS}	At Full Conduction	0.2	0.2	0.2	1.0	pA	
-I _{GSS}	High Temperature	0.5	0.5	0.5	1.0	nA	$V_{GS} = 0$ $V_{GS} = -20V$ $T_A = +125^{\circ}C$

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
BV _{GSS}	Breakdown Voltage	40	60	--	V	$V_{DS} = 0$ $I_D = 1nA$
BV _{GG0}	Gate-to-Gate Breakdown	40	--	--	V	$I_G = 1nA$ $I_D = 0$ $I_S = 0$
TRANSCONDUCTANCE						
Y _{fs}	Full Conduction	70	300	500	μmho	$V_{DG} = 10V$ $V_{GS} = 0$ $f = 1kHz$
Y _{fs}	Typical Operation	50	100	200	μmho	$V_{DG} = 10V$ $I_D = 30\mu A$ $f = 1kHz$
$I Y_{fs1-2} / Y_{fs}$	Mismatch	--	1	5	%	
DRAIN CURRENT						
I _{DSS}	Full Conduction	60	400	1000	μA	$V_{DG} = 10V$ $V_{GS} = 0$
$I I_{DSS1-2} / I_{DSS}$	Mismatch at Full Conduction	--	2	5	%	
GATE VOLTAGE						
V _{GS(off)} or V _P	Pinchoff Voltage	0.6	2	4.5	V	$V_{DS} = 10V$ $I_D = 1nA$
V _{GS}	Operating Range	--	--	4	V	$V_{DG} = 10V$ $I_D = 30\mu A$
GATE CURRENT						
I _{GG0}	Gate-to-Gate Leakage	--	1	--	pA	$V_{GG} = 20V$

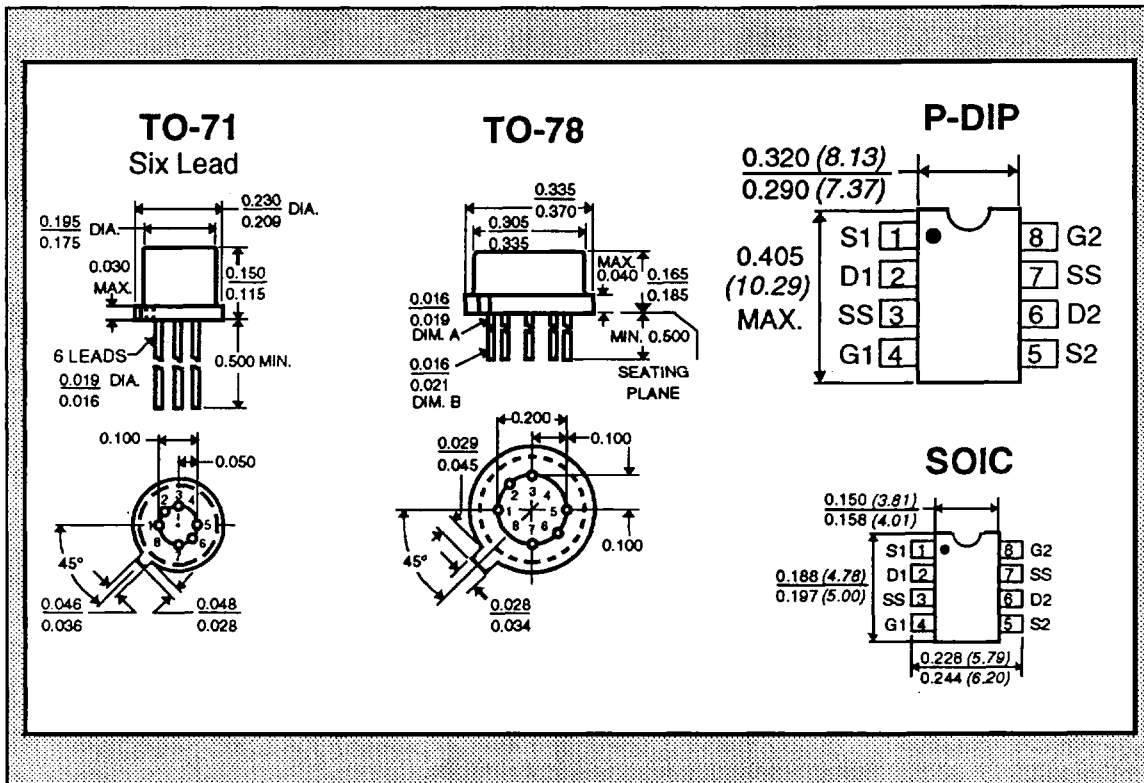
LS830 LS831 LS832 LS833

ULTRA LOW LEAKAGE LOW DRIFT MONOLITHIC DUAL N-CHANNEL JFET



LIST1012

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
OUTPUT CONDUCTANCE						
Y_{OSS}	Full Conduction	--	--	5	μmho	$V_{DG} = 10\text{V}$ $V_{GS} = 0$
Y_{OS}	Operating	--	--	0.5	μmho	$V_{DG} = 10\text{V}$ $I_D = 30\mu\text{A}$
$ Y_{OS1-2} $	Differential	--	--	0.1	μmho	
COMMON MODE REJECTION						
CMR	$-20 \log V_{GS1-2}/V_{DS} $	--	90	--	dB	$V_{DS} = 10 \text{ to } 20\text{V}$ $I_D = 30\mu\text{A}$
CMR	$-20 \log V_{GS1-2}/V_{DS} $	--	90	--	dB	$V_{DS} = 5 \text{ to } 10\text{V}$ $I_D = 30\mu\text{A}$
NOISE						
NF	Figure	--	--	1	dB	$V_{DS} = 10\text{V}$ $V_{GS} = 0$ $R_G = 10\text{M}$ $f = 100\text{Hz}$ $\text{NBW} = 6\text{Hz}$
e_n	Voltage	--	20	70	nV/Hz	$V_{DG} = 10\text{V}$ $I_D = 30\mu\text{A}$ $f = 10\text{Hz}$ $\text{NBW} = 1\text{Hz}$
CAPACITANCE						
C_{ISS}	Input	--	--	3	pF	$V_{DS} = 10\text{V}$ $V_{GS} = 0$ $f = 1\text{MHz}$
C_{RSS}	Reverse Transfer	--	--	1.5	pF	$V_{DS} = 10\text{V}$ $V_{GS} = 0$ $f = 1\text{MHz}$
C_{DD}	Drain-to-Drain	--	--	0.1	pF	$V_{DG} = 10\text{V}$ $I_D = 30\mu\text{A}$



NOTES:

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