

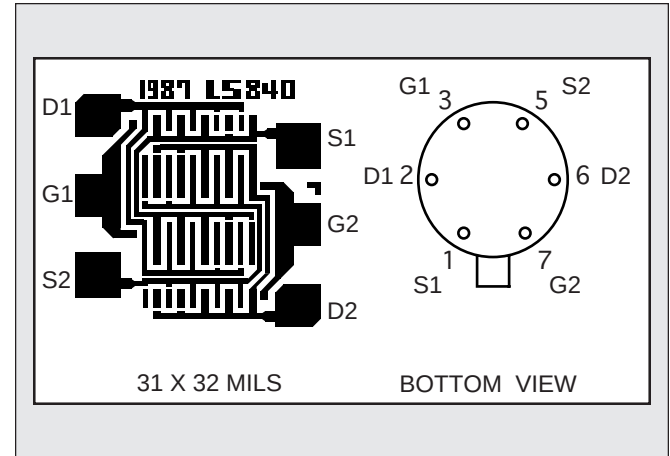
LINEAR SYSTEMS

Linear Integrated Systems

LS840 LS841 LS842

LOW NOISE LOW DRIFT
LOW CAPACITANCE
MONOLITHIC DUAL N-CANNEL JFET

FEATURES		
LOW NOISE		$e_n = 8\text{nV}/\sqrt{\text{Hz}}$ TYP.
LOW LEAKAGE		$I_G = 10\text{pA}$ TYP.
LOW DRIFT		$ \Delta V_{GS1-2} / \Delta T = 5\mu\text{V}/^\circ\text{C}$ max.
LOW OFFSET VOLTAGE		$ V_{GS1-2} = 2\text{mV}$ TYP.
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	60V
-V _{DSO}	Drain to Source Voltage	60V
-I _{G(f)}	Gate Forward Current	50mA
Maximum Power Dissipation		
Device Dissipation @ Free Air - Total		400mW @ +125°C



ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

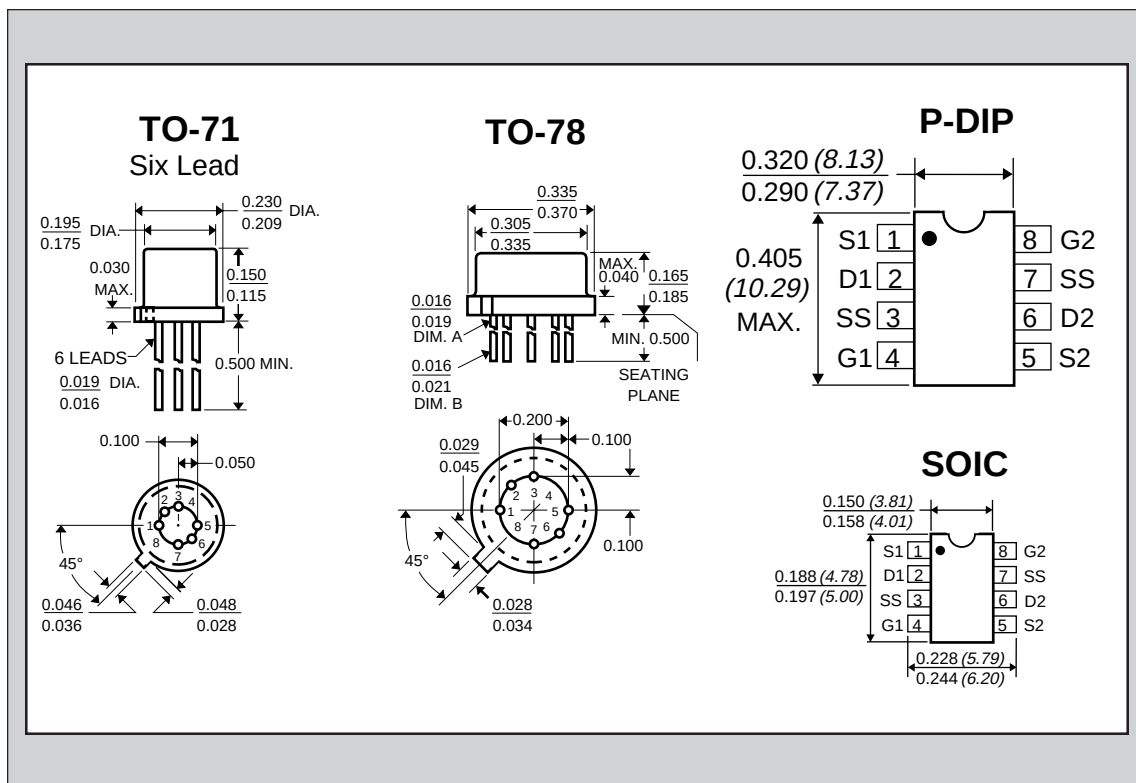
SYMBOL	CHARACTERISTICS	LS840	LS841	LS842	UNITS	CONDITIONS
$ \Delta V_{GS1-2}/\Delta T $ max.	Drift vs. Temperature	5	10	40	$\mu\text{V}/^\circ\text{C}$	$V_{DG} = 20\text{V}$ $T_A = -55^\circ\text{C}$ to $+125^\circ\text{C}$ $I_D = 200\mu\text{A}$
$ V_{GS1-2} $ max.	Offset Voltage	5	10	25	mV	$V_{DG} = 20\text{V}$ $I_D = 200\mu\text{A}$

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
BV_{GSS}	Breakdown Voltage	60	--	--	V	$V_{DS} = 0$ $I_D = 1\text{nA}$
BV_{GGO}	Gate-to-Gate Breakdown	60	--	--	V	$I_G = 1\text{nA}$ $I_D = 0$ $I_S = 0$
Y_{fss}	TRANSCONDUCTANCE Full Conduction	1000		4000	μmho	$V_{DG} = 20\text{V}$ $V_{GS} = 0$ $f = 1\text{kHz}$
Y_{fs}	Typical Conduction	500		1000	μmho	$V_{DG} = 20\text{V}$ $I_D = 200\mu\text{A}$
$ Y_{fs1-2}/Y_{fs} $	Mismatch	--	0.6	3	%	
I_{DSS}	DRAIN CURRENT Full Conduction	0.5	2	5	mA	$V_{DG} = 20\text{V}$ $V_{GS} = 0$
$ I_{DSS1-2}/I_{DSS} $	Mismatch at Full Conduction	--	1	5	%	
$V_{GS(off)}$ or V_P	GATE VOLTAGE Pinchoff Voltage	1	2	4.5	V	$V_{DS} = 20\text{V}$ $I_D = 1\text{nA}$
V_{GS}	Operating Range	0.5	--	4	V	$V_{DS} = 20\text{V}$ $I_D = 200\mu\text{A}$
$-I_G$	GATE CURRENT Operating	--	10	50	pA	$V_{DG} = 20\text{V}$ $I_D = 200\mu\text{A}$
$-I_G$	High Temperature	--	--	50	nA	$V_{DG} = 20\text{V}$ $I_D = 200\mu\text{A}$ $T_A = +125^\circ\text{C}$
$-I_G$	Reduced VDG	--	5	--	pA	$V_{DG} = 10\text{V}$ $I_D = 200\mu\text{A}$
$-I_{GSS}$	At Full Conduction	--	--	100	pA	$V_{DG} = 20\text{V}$ $V_{DS} = 0$

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4042 Clipper Court, 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 _{DG} = 20V V _{GS} = 0
Y _{os}	Operating	--	0.1	1	μmho	V _{DG} = 20V I _D = 200μA
Y _{os1-2}	Differential	--	0.01	0.1	μmho	
COMMON MODE REJECTION						
CMR	-20 log ΔV _{GS1-2} /ΔV _{DS}	--	100	--	dB	ΔV _{DS} = 10 to 20V I _D = 200μA
CMR		--	75	--	dB	ΔV _{DS} = 5 to 10V I _D = 200μA
NOISE						
NF	Figure	--	--	0.5	dB	V _{DS} = 20V V _{GS} = 0 R _G = 10MΩ f= 100Hz NBW= 6Hz
e _n	Voltage	--	--	10	nV/√Hz	V _{DS} = 20V I _D = 200μA f= 1KHz NBW= 1Hz
e _n	Voltage	--	--	15	nV/√Hz	V _{DS} = 20V I _D = 200μA f= 10Hz NBW= 1Hz
CAPACITANCE						
C _{ISS}	Input	--	4	10	pF	V _{DS} = 20V I _D = 200μA
C _{RSS}	Reverse Transfer	--	1.2	5	pF	
C _{DD}	Drain-to-Drain	--	0.1	--	pF	V _{DG} = 20V I _D = 200μA



NOTES:

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