

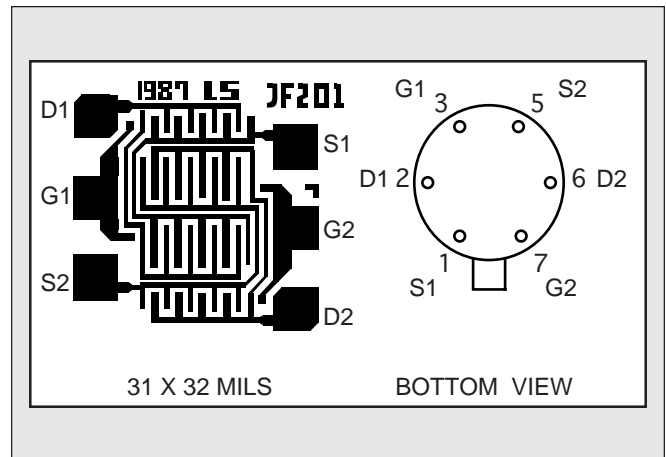
# LINEAR SYSTEMS

## Linear Integrated Systems

# LS843 LS844 LS845

ULTRA LOW NOISE LOW DRIFT  
MONOLITHIC DUAL N-CANNEL JFET

FEATURES		
ULTRA LOW NOISE	$e_n = 3nV/\sqrt{Hz}$ TYP.	
LOW LEAKAGE	$I_G = 15pA$ TYPs.	
LOW DRIFT	$ \Delta V_{GS1-2}/\Delta T  = 5\mu V/^\circ C$ max.	
ULTRA LOW OFFSET VOLTAGE	$ V_{GS1-2}  = 1mV$ 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	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

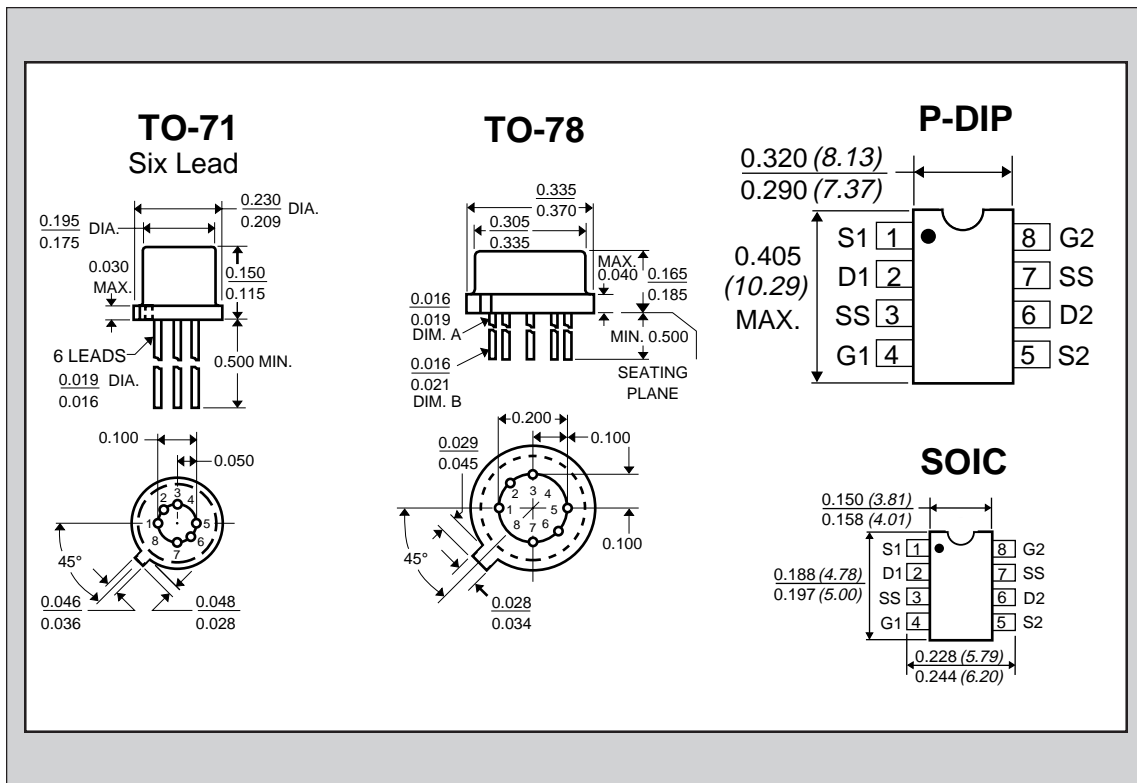


### ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	LS843	LS844	LS845	UNITS	CONDITIONS
$ \Delta V_{GS1-2}/\Delta T $ max.	Drift vs. Temperature	5	10	25	$\mu V/^\circ C$	$V_{DG} = 10V$ $T_A = -55^\circ C$ to $+125^\circ C$ $I_D = 500\mu A$
$ V_{GS1-2} $ max.	Offset Voltage	1	5	15	mV	$V_{DG} = 10V$ $I_D = 500\mu A$

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
$BV_{GSS}$	Breakdown Voltage	60	--	--	V	$V_{DS} = 0$ $I_D = 1nA$
$BV_{GGO}$	Gate-to-Gate Breakdown	60	--	--	V	$I_G = 1nA$ $I_D = 0$ $I_S = 0$
TRANSCONDUCTANCE						
$Y_{fss}$	Full Conduction	1500	--	--	$\mu mho$	$V_{DG} = 15V$ $V_{GS} = 0$ $f = 1kHz$
$Y_{fs}$	Typical Conduction	1000	1500	--	$\mu mho$	$V_{DG} = 15V$ $I_D = 500\mu A$
$ Y_{fs1-2}/Y_{fs} $	Mismatch	--	0.6	3	%	
DRAIN CURRENT						
$I_{DSS}$	Full Conduction	1.5	5	15	mA	$V_{DG} = 15V$ $V_{GS} = 0$
$ I_{DSS1-2}/I_{DSS} $	Mismatch at Full Conduction	--	1	5	%	
GATE VOLTAGE						
$V_{GS(off)}$ or $V_P$	Pinchoff Voltage	1	--	3.5	V	$V_{DS} = 15V$ $I_D = 1nA$
$V_{GS}$	Operating Range	0.5	--	3.5	V	$V_{DS} = 15V$ $I_D = 500\mu A$
GATE CURRENT						
$-I_G$	Operating	--	15	50	pA	$V_{DG} = 15V$ $I_D = 500\mu A$
$-I_G$	High Temperature	--	--	50	nA	$V_{DG} = 15V$ $I_D = 500\mu A$ $T_A = +125^\circ C$
$-I_G$	Reduced VDG	--	5	30	pA	$V_{DG} = 3V$ $I_D = 500\mu A$
$-I_{GSS}$	At Full Conduction	--	--	100	pA	$V_{DG} = 15V$ $V_{DS} = 0$

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
<b>OUTPUT CONDUCTANCE</b>						
$Y_{OSS}$	Full Conduction	--	--	20	$\mu\text{mho}$	$V_{DG} = 15\text{V}$ $V_{GS} = 0$
$Y_{OS}$	Operating	--	0.2	2	$\mu\text{mho}$	$V_{DG} = 15\text{V}$ $I_D = 500\mu\text{A}$
$ Y_{OS1-2} $	Differential	--	0.02	0.2	$\mu\text{mho}$	
<b>COMMON MODE REJECTION</b>						
CMR	$-20 \log  \Delta V_{GS1-2} / \Delta V_{DS} $	90	110	--	dB	$\Delta V_{DS} = 10 \text{ to } 20\text{V}$ $I_D = 500\mu\text{A}$
CMR		--	85	--	dB	$\Delta V_{DS} = 5 \text{ to } 10\text{V}$ $I_D = 500\mu\text{A}$
<b>NOISE</b>						
NF	Figure	--	--	0.5	dB	$V_{DS} = 15\text{V}$ $V_{GS} = 0$ $R_G = 10\text{M}\Omega$ $f = 100\text{Hz}$ $\text{NBW} = 6\text{Hz}$
$e_n$	Voltage	--	--	7	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DS} = 15\text{V}$ $I_D = 500\mu\text{A}$ $f = 1\text{kHz}$ $\text{NBW} = 1\text{Hz}$
$e_n$	Voltage	--	--	11	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DS} = 15\text{V}$ $I_D = 500\mu\text{A}$ $f = 10\text{Hz}$ $\text{NBW} = 1\text{Hz}$
<b>CAPACITANCE</b>						
$C_{ISS}$	Input	--	--	8	$\text{pF}$	$V_{DS} = 15\text{V}$ $I_D = 500\mu\text{A}$
$C_{RSS}$	Reverse Transfer	--	--	3	$\text{pF}$	
$C_{DD}$	Drain-to-Drain	--	0.5	--	$\text{pF}$	$V_{DG} = 15\text{V}$ $I_D = 500\mu\text{A}$



**NOTES:**

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