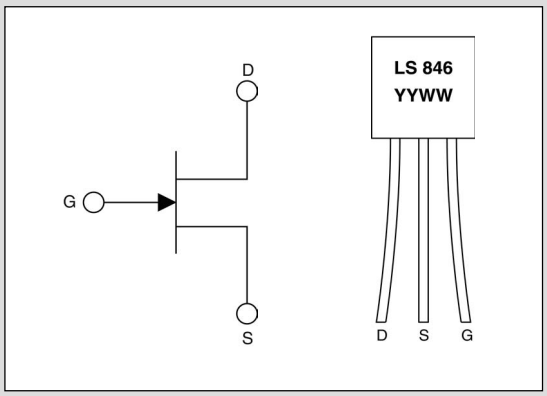
LINEAR SYSTEMS

Linear Integrated Systems

LS846

LOW NOISE, LOW LEAKAGE SINGLE N-CHANNEL JFET

FEATURES	
ULTRA LOW NOISE	e_n = 3nV/√Hz
LOW GATE LEAKAGE	I_G = 15pA
ABSOLUTE MAXIMUM RATINGS[1] @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-65 to +150 °C
Operating Junction Temperature	-55 to +135 °C
Maximum Power Dissipation	
Continuous Power Dissipation @ +125 °C	350mW
Maximum Currents	
Gate Forward Current	$I_{G(F)}$ = 50mA
Maximum Voltages	
Drain to Source	V_{DSO} = 60V
Gate to Source	V_{GSS} = 60V
Gate to Drain	V_{GDS} = 60V



*For equivalent monolithic dual, see LS843 family.

ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	60			V	V_{DS} = 0, I_D = 1nA
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	1		3.5	V	V_{DS} = 15V, I_D = 1nA
V_{GS}	Gate to Source Operating Voltage	0.5		3.5	V	V_{DS} = 15V, I_D = 500µA
I_{DSS}	Drain to Source Saturation Current	1.5	5	15	mA	V_{DG} = 15V, V_{GS} = 0
I_G	Gate Operating Current		15	50	pA	V_{DG} = 15V, I_D = 500µA
I_G	Gate Operating Current Reduced V_{DG}		5	30	pA	V_{DG} = 3V, I_D = 500µA
I_{GSS}	Gate to Source Leakage Current			100	pA	V_{DG} = 15V, V_{DS} = 0
Y_{fss}	Full Conductance Transconductance	1500			µmho	V_{GD} = 15V, V_{GS} = 0, *f* = 1kHz
Y_{fs}	Typical Conductance Transconductance	1000	1500		µmho	V_{DG} = 15V, I_D = 500µA
Y_{oss}	Full Output Conductance			20	µmho	V_{DG} = 15V, V_{GS} = 0
Y_{os}	Typical Output Conductance		0.2	2	µmho	V_{DG} = 15V, I_D = 500µA
NF	Noise Figure			0.5	dB	V_{DS} = 15V, V_{GS} = 0, R_G = 10MΩ, *f* = 100Hz, NBW = 6Hz
e_n	Noise Voltage		3	7	nV/√Hz	V_{DS} = 15V, I_D = 500µA, *f* = 1kHz, NBW = 1Hz
e_n	Noise Voltage			11	nV/√Hz	V_{DS} = 15V, I_D = 500µA, *f* = 10Hz, NBW = 1Hz
C_{ISS}	Common Source Input Capacitance			8	pF	V_{DS} = 15V, I_D = 500µA
C_{RSS}	Common Source Reverse Transfer Cap.			3	pF	

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.

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