LINEAR SYSTEMS

LS846
N-CHANNEL JFET

micross

Linear Systems Low Leakage Low Noise JFET

The LS846 is a high-performance JFET featuring extremely low noise and low leakage and is targeted for use in a wide range of precision instrumentation applications.

The hermetically sealed TO-71 & TO-78 packages are well suited for military and harsh environment applications.

(See Packaging Information).

LS846 Applications:

- Wideband Differential Amps
- High-Speed,Temp-Compensated Single-Ended Input Amps
- High-Speed Comparators
- Impedance Converters and vibrations detectors.

FEATURES	
LOW LEAKAGE	I_G = 15pA TYP.
LOW NOISE	e_n = 3nV/√Hz TYP.

ABSOLUTE MAXIMUM RATINGS @ 25°C (unless otherwise noted)		
Maximum Temperatures		
Storage Temperature		-65°C to +150°C
Operating Junction Temperature		+135°C
Maximum Voltage and Current– Note 1		
$-V_{GSS}$	Gate Voltage to Drain or Source	60V
$-V_{GDS}$	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		350mW @ +125°C

ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTICS	MIN.	TYP.	MAX.	UNITS	CONDITIONS
BV_{GSS}	Breakdown Voltage	60	--	--	V	V_{DS} = 0 I_D=1nA
	TRANSCONDUCTANCE					
Y_{fss}	Full Conduction	1500	--	--	µmho	V_{DG}= 15V V_{GS}= 0V f = 1kHz
Y_{fs}	Typical Operation	1000	1500	--	µmho	V_{DG}= 15V I_D= 500µA
	DRAIN CURRENT					
I_{DSS}	Full Conduction	1.5	5	15	mA	V_{DG}= 15V V_{GS}= 0V
	GATE VOLTAGE					
V_{GS}(off) or V_p	Pinchoff voltage	1	--	3.5	V	V_{DS}= 15V I_D= 1nA
V_{GS}(on)	Operating Range	0.5	--	3.5	V	V_{DS}=15V I_D=500µA
	GATE CURRENT					
$-I_G$max.	Operating	--	15	50	pA	V_{DG}= 15V I_D= 500µA
$-I_G$max.	High Temperature	--	--	50	nA	T_A= +125°C
$-I_G$max.	Reduced V_{DG}	--	5	30	pA	V_{DG} = 3V I_D= 500µA
$-I_{GSS}$max.	At Full Conduction	--	--	100	pA	V_{DG}= 15V , V_{DS} =0
	OUTPUT CONDUCTANCE					
Y_{OSS}	Full Conduction	--	--	20	µmho	V_{DG}= 15V V_{GS}= 0V
Y_{OS}	Operating	--	0.2	2	µmho	V_{DG}= 15V I_D= 500µA
	NOISE					V_{DS}= 15V V_{GS}= 0V R_G= 10MΩ
NF	Figure	--	--	0.5	dB	f= 100Hz NBW= 6Hz
e_n	Noise Voltage	--	3	7	nV/√Hz	V_{DS}=15V I_D=500µA f=1KHz NBW=1Hz
	CAPACITANCE					
C_{ISS}	Input	--	--	8	pF	V_{DS}= 15V, I_D=500µA
C_{RSS}	Reverse Transfer	--	--	3	pF	V_{DG}= 15V, I_D=500µA

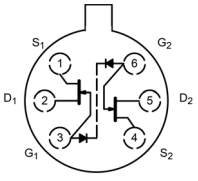
Note 1 – These ratings are limiting values above which the serviceability of any semiconductor may be impaired

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Available Packages:

LS846 / LS846 in TO-71 & TO-78
LS846 / LS846 available as bare die
Please contact Micross for full package and die dimensions

TO-71 & TO-78 (Top View)



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