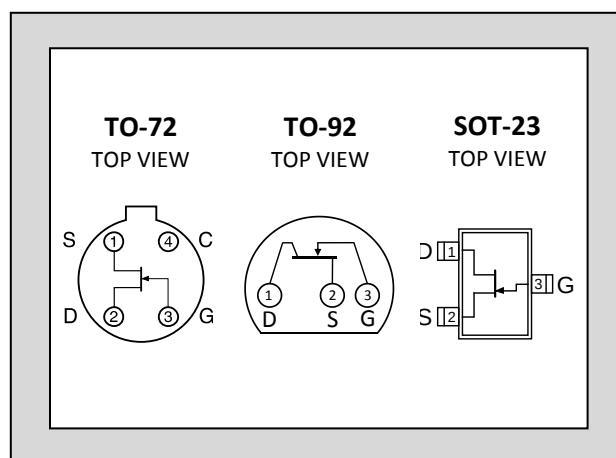


LS846

LOW NOISE LOW LEAKAGE SINGLE N-CHANNEL JFET AMPLIFIER

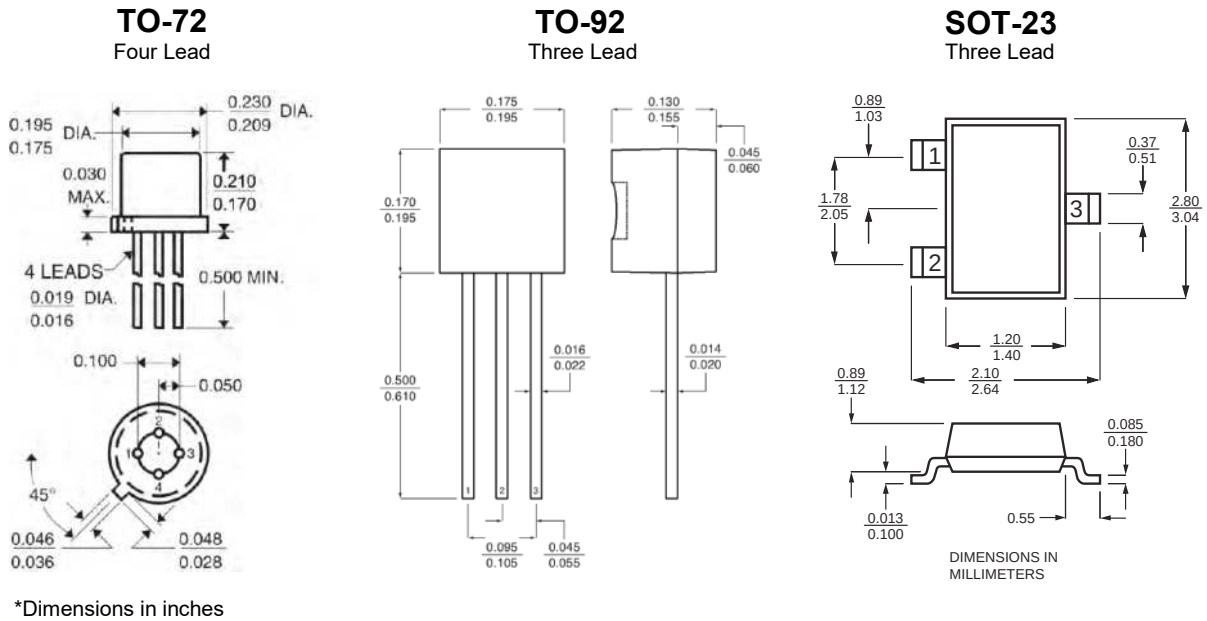
FEATURES	
ULTRA LOW NOISE	$e_n = 3\text{nV}/\sqrt{\text{Hz}}$
LOW INPUT CAPACITANCE	$C_{iss} = 4\text{pF}$
ABSOLUTE MAXIMUM RATINGS ¹ @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to +150°C
Operating Junction Temperature	-55 to +150°C
Maximum Power Dissipation	
Continuous Power Dissipation $T_A=25^\circ\text{C}$	300mW ³
Maximum Currents	
Gate Forward Current	$I_{G(F)} = 10\text{mA}$
Maximum Voltages	
Gate to Source	$V_{GSO} = 60\text{V}$
Gate to Drain	$V_{GDO} = 60\text{V}$



*For equivalent Monolithic Dual, see LS843 Family

SYMBOL	CHARACTERISTIC ²	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	-60			V	$V_{DS} = 0, I_D = 1\text{nA}$
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	-1		-3.5	V	$V_{DS} = 15\text{V}, I_D = 1\text{nA}$
V_{GS}	Gate to Source Operating Voltage	-0.5		-3.5	V	$V_{DS} = 15\text{V}, I_D = 500\mu\text{A}$
I_{DSS}	Drain to Source Saturation Current	1.5	5	15	mA	$V_{DS} = 15\text{V}, V_{GS} = 0$
I_G	Gate Operating Current		-15	-50	pA	$V_{DG} = 15\text{V}, I_D = 500\mu\text{A}$
I_G	Gate Operating Current Reduced V_{DG}		-5	-30	pA	$V_{DG} = 3\text{V}, I_D = 500\mu\text{A}$
I_{GSS}	Gate to Source Leakage Current			-100	pA	$V_{GS} = 15\text{V}, V_{DS} = 0$
G_{fss}	Full Conductance Transconductance	1500			μS	$V_{DS} = 15\text{V}, V_{GS} = 0, f = 1\text{kHz}$
G_{fs}	Typical Operation Transconductance	1000	1500		μS	$V_{DS} = 15\text{V}, I_D = 200\mu\text{A}$
G_{OSS}	Full Output Conductance			40	μS	$V_{DS} = 15\text{V}, V_{GS} = 0$
G_{OS}	Typical Operation Output Conductance		2.0	2.70	μS	$V_{DS} = 15\text{V}, I_D = 200\mu\text{A}$
NF	Noise 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	Noise Voltage		3	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	Noise Voltage			11	$\text{nV}/\sqrt{\text{Hz}}$	$V_{DS} = 15\text{V}, I_D = 500\mu\text{A}, f = 10\text{Hz}, \text{NBW} = 1\text{Hz}$
C_{iss}	Common Source Input Capacitance		4	8	pF	$V_{DS} = 15\text{V}, I_D = 500\mu\text{A}, f = 1\text{MHz}$
C_{RSS}	Common Source Reverse Transfer Cap.			3	pF	

STANDARD PACKAGE DIMENSIONS:



NOTES:

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. All MIN/TYP/MAX limits are absolute numbers. Negative signs indicate negative electrical polarity only.
3. Derate 2.8mW/°C above 25°C.

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