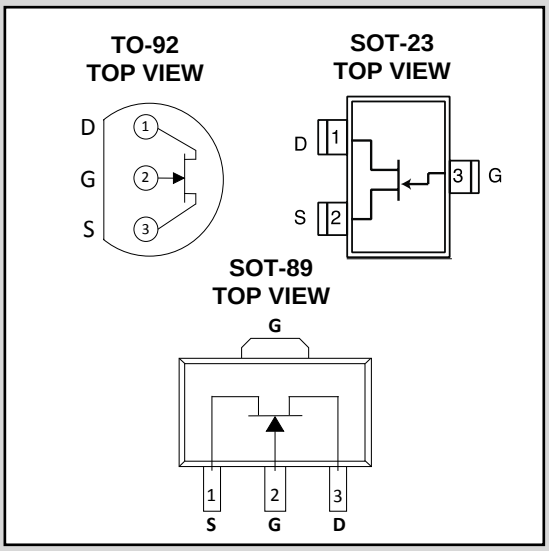
LINEAR SYSTEMS

Improved Standard Products®

LSK170X-1

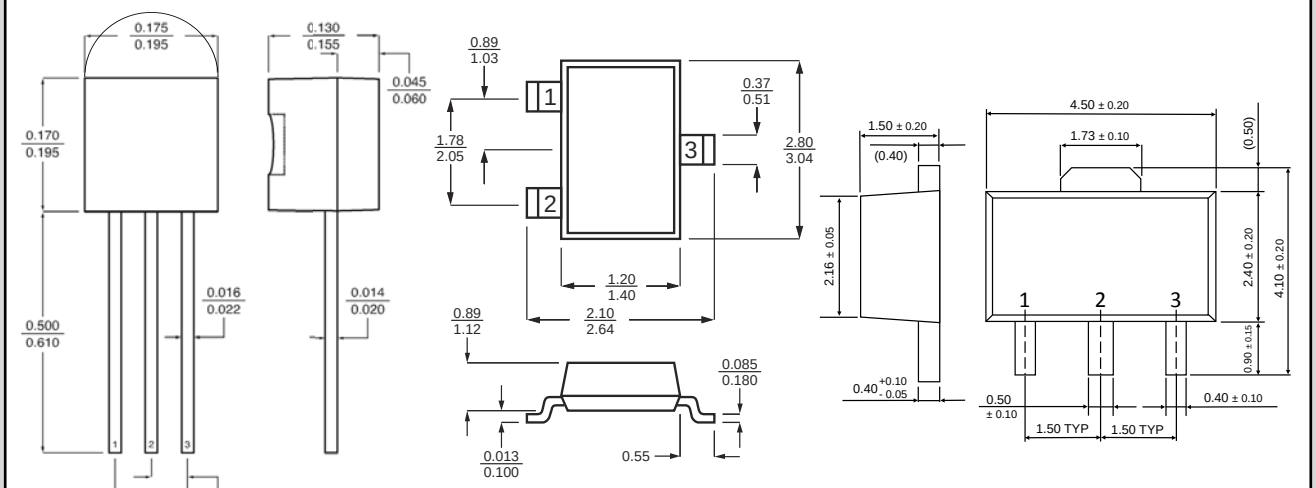
ULTRA LOW NOISE, HIGH IDSS SINGLE N-CHANNEL JFET AMPLIFIER

FEATURESss	
ULTRA LOW NOISE (f=1kHz)	e_n = 1.9NV/√HZ
HIGH BREAKDOWN VOLTAGE	BV_{GSS}=40V min
HIGH GAIN	G_{fs}=22mS (typ)
HIGH INPUT IMPEDENCE	I_G= -500pA max
LOW CAPACITANCE	20pF (typ)
ABSOLUTE MAXIMUM RATINGS[1] @ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-55 to +150 °C
Operating Junction Temperature	-55 to +135 °C
Maximum Power Dissipation	
Continuous Power Dissipation@+25°C	400mW
Maximum Currents	
Gate Forward Current	$I_{G(F)}$= 10mA
Maximum Voltages	
Gate to Source	V_{GS} = 40V
Gate to Drain	V_{GD} = 40V



ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	-40			V	V_{DS} = 0, I_D = 100µA
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	-0.2		-2	V	V_{DS} = 10V, I_D = 1nA
V_{GS}	Gate to Source Operating Voltage		0.5		V	V_{DS} = 10V, I_D = 1mA
I_{DSS2}	Drain to Source Saturation Current	20		50	mA	V_{DS} = 10V, V_{GS} = 0
I_G	Gate Operating Current			-0.5	nA	V_{DG} = 10V, I_D = 1mA
I_{GSS}	Gate to Source Leakage Current			-1	nA	V_{GS} = -10V, V_{DS} = 0
G_{fS}	Full Conduction Transconductance		22		mS	V_{GD} = 10V, V_{GS} = 0, *f* = 1kHz
G_{fS}	Typical Conduction Transconductance		10		mS	V_{DG} = 15V, I_D = 1mA
e_n	Noise Voltage		1.9		nV/√Hz	V_{DS} = 10V, I_D = 2mA, *f* = 1kHz, NBW=1Hz
e_n	Noise Voltage		4.0		nV/√Hz	V_{DS} = 10V, I_D = 2mA, *f* = 10 Hz, NBW=1Hz
C_{ISS}	Common Source Input Capacitance		20		pF	V_{DS} = 15V, I_D = 100µA, *f* = 1MHz
C_{RSS}	Common Source Reverse Transfer Cap.		5		pF	



NOTES:

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 3%
3. All characteristics MIN/TYP/MAX numbers are absolute values. Negative values indicate electrical polarity only.

Linear Integrated Systems develops and produces the highest performance semiconductors of their kind in the industry. Linear Systems, founded in 1987, uses patented and proprietary processes and designs to create its high performance discrete semiconductors. Expertise brought to the company is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company founder John H. Hall.