

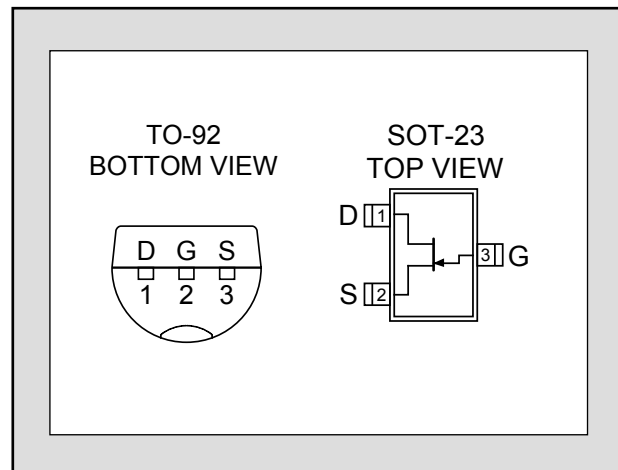
LINEAR SYSTEMS

Linear Integrated Systems

FEATURES	
ULTRA LOW NOISE ($f = 1\text{kHz}$)	$e_n = 0.9\text{nV}/\sqrt{\text{Hz}}$
HIGH BREAKDOWN VOLTAGE	$BV_{GSS} = 40\text{V max}$
HIGH GAIN	$Y_{fs} = 22\text{mS (typ)}$
HIGH INPUT IMPEDANCE	$I_G = -500\text{pA max}$
LOW CAPACITANCE	22pF max
IMPROVED SECOND SOURCE REPLACEMENT FOR 2SK170	
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	400mW
Maximum Currents	
Gate Forward Current	$I_{G(F)} = 10\text{mA}$
Maximum Voltages	
Gate to Source	$V_{GSS} = 40\text{V}$
Gate to Drain	$V_{GDS} = 40\text{V}$

LSK170

**ULTRA LOW NOISE
SINGLE N-CHANNEL JFET**



*For equivalent monolithic dual, see LSK389 family.

ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	40			V	$V_{DS} = 0, I_D = 100\mu\text{A}$
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	0.2		2	V	$V_{DS} = 10\text{V}, I_D = 1\text{nA}$
V_{GS}	Gate to Source Operating Voltage		0.5		V	$V_{DS} = 10\text{V}, I_D = 1\text{mA}$
I_{DSS}	Drain to Source Saturation Current	LSK170A	2.6	6.5	mA	$V_{DG} = 10\text{V}, V_{GS} = 0$
		LSK170B	6	12		
		LSK170C	10	20		
I_G	Gate Operating Current			0.5	nA	$V_{DG} = 10\text{V}, I_D = 1\text{mA}$
I_{GSS}	Gate to Source Leakage Current			1	nA	$V_{DG} = 10\text{V}, V_{DS} = 0$
Y_{fss}	Full Conduction Transconductance		22		mS	$V_{GD} = 10\text{V}, V_{GS} = 0, f = 1\text{kHz}$
Y_{fs}	Typical Conduction Transconductance		10		mS	$V_{DG} = 15\text{V}, I_D = 1\text{mA}$
e_n	Noise Voltage		0.9	1.9	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 10\text{V}, I_D = 2\text{mA}, f = 1\text{kHz}, \text{NBW} = 1\text{Hz}$
e_n	Noise Voltage		2.5	4	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 10\text{V}, I_D = 2\text{mA}, f = 10\text{Hz}, \text{NBW} = 1\text{Hz}$
C_{ISS}	Common Source Input Capacitance		20		pF	$V_{DS} = 15\text{V}, I_D = 500\mu\text{A}$
C_{RSS}	Common Source Reverse Transfer Cap.		5		pF	

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

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