

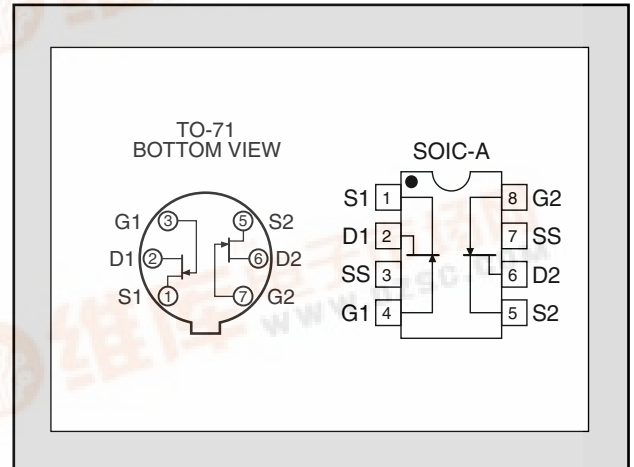
LINEAR SYSTEMS

Linear Integrated Systems

LSK389

**ULTRA LOW NOISE
MONOLITHIC DUAL
N-CHANNEL JFET**

FEATURES	
ULTRA LOW NOISE	$e_n = 0.9\text{nV}/\sqrt{\text{Hz}}$ (typ)
TIGHT MATCHING	$ V_{GS1-2} = 20\text{mV}$ max
HIGH BREAKDOWN VOLTAGE	$BV_{GSS} = 40\text{V}$ max
HIGH GAIN	$Y_{fs} = 20\text{mS}$ (typ)
LOW CAPACITANCE	25pF typ
IMPROVED SECOND SOURCE REPLACEMENT FOR 2SK389	
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	$V_{GDS} = 40\text{V}$



*For equivalent single version, see LSK170 family.

MATCHING CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNIT	CONDITIONS
$ V_{GS1} - V_{GS2} $	Differential Gate to Source Cutoff Voltage			20	mV	$V_{DS} = 10\text{V}$, $I_D = 1\text{mA}$
$\frac{I_{DSS1}}{I_{DSS2}}$	Gate to Source Saturation Current Ratio	0.9			-	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$

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	0.15		2	V	$V_{DS} = 10\text{V}$, $I_D = 0.1\mu\text{A}$
I_{DSS}	Drain to Source Saturation Current	LSK389A	2.6	6.5	mA	$V_{DS} = 10\text{V}$, $V_{GS} = 0$
		LSK389B	6	12		
		LSK389C	10	20		
I_{GSS}	Gate to Source Leakage Current			200	pA	$V_{GS} = -30\text{V}$, $V_{DS} = 0$

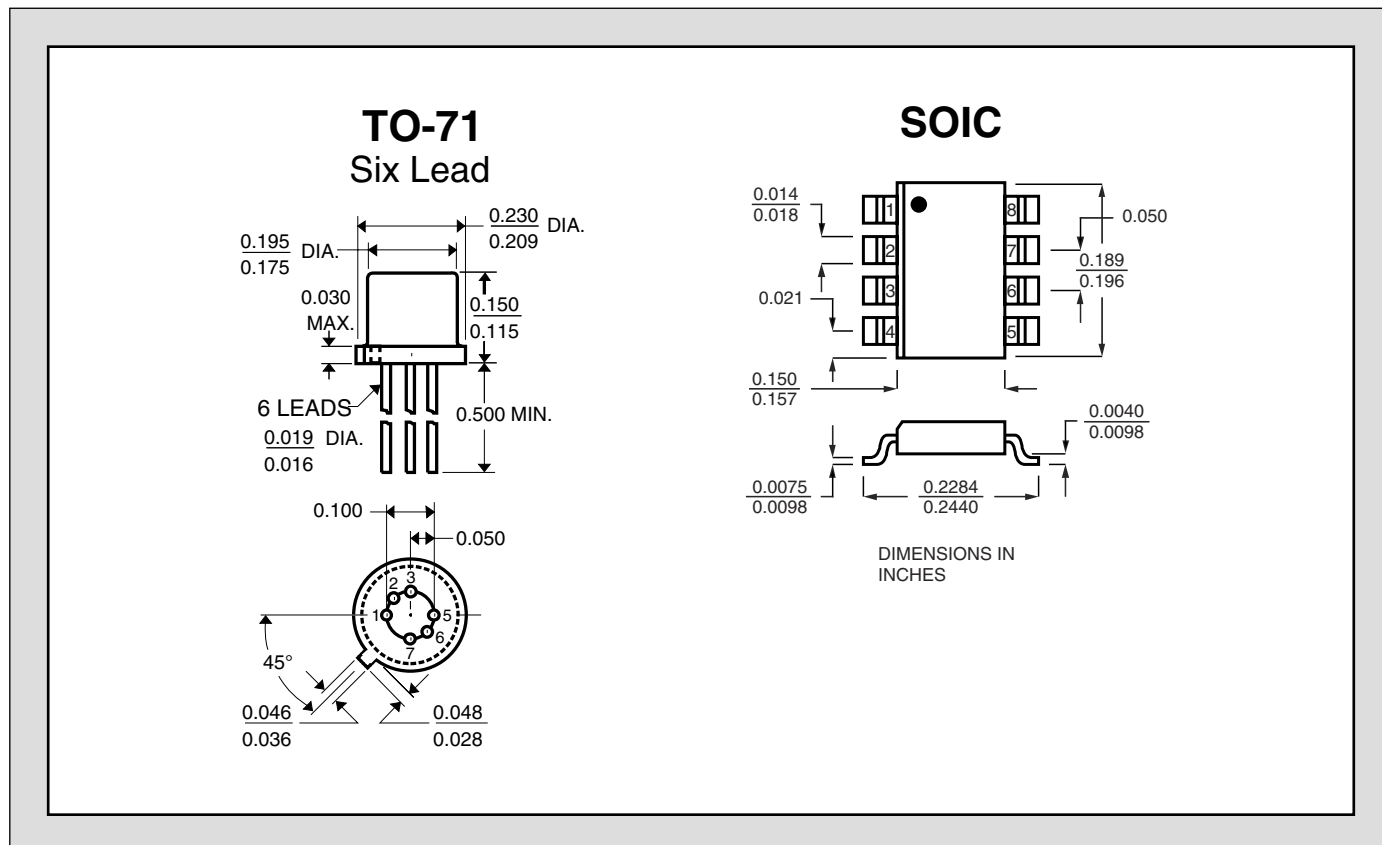
ELECTRICAL CHARACTERISTICS CONT. @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
Y_{fs}	Full Conduction Transconductance	8	20		mS	$V_{DS} = 10V$, $V_{GS} = 0$, $I_{DSS} = 3mA$, $f = 1kHz$
e_n	Noise Voltage		0.9	1.9	nV/ \sqrt{Hz}	$V_{DS} = 10V$, $I_D = 2mA$, $f = 1kHz$, NBW = 1Hz
e_n	Noise Voltage		2.5	4	nV/ \sqrt{Hz}	$V_{DS} = 10V$, $I_D = 2mA$, $f = 10Hz$, NBW = 1Hz
C_{ISS}	Common Source Input Capacitance		25		pF	$V_{DS} = 10V$, $V_{GS} = 0$, $f = 1MHz$
C_{RSS}	Common Source Reverse Transfer Cap.		5.5		pF	$V_{DG} = 10V$, $I_D = 0$, $f = 1MHz$

ORDERING INFORMATION

LSK389 - A - SOIC-8	
I_{DSS} Range	Package
A 2.6 - 6.5 mA	71 TO-71 6L
B 6 - 12 mA	SOIC-8 SOIC-A 8L
C 10 - 20 mA	

PACKAGE DIMENSIONS



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

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