LINEAR SYSTEMS

Linear Integrated Systems

LSK389
ULTRA LOW NOISE MONOLITHIC DUAL N-CHANNEL JFET

FEATURES	
ULTRA LOW NOISE	e_n = 0.9nV/√Hz (typ)
TIGHT MATCHING	$|V_{GS1-2}|$ = 20mV max
HIGH BREAKDOWN VOLTAGE	BV_{GSS} = 40V max
HIGH GAIN	Y_{fs} = 20mS (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	$I_{G(F)}$ = 10mA
Maximum Voltages	
Gate to Source	V_{GSS} = 40V
Gate to Drain	V_{GDS} = 40V

TO-71 BOTTOM VIEW / SOIC-A
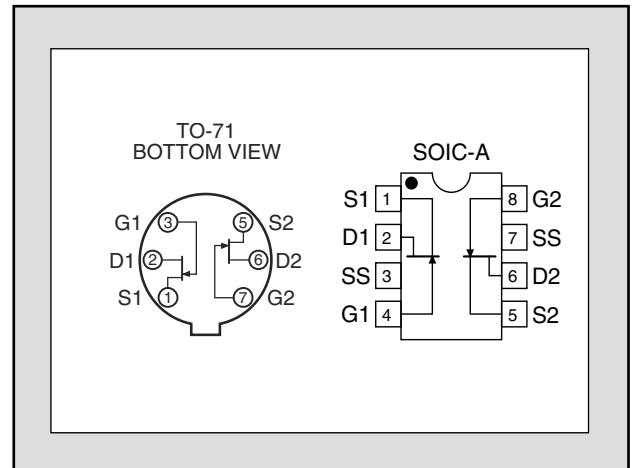
*For equivalent single version, see LSK170 family.

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} = 10V, I_D = 1mA
$\dfrac{I_{DSS1}}{I_{DSS2}}$	Gate to Source Saturation Current Ratio	0.9			-	V_{DS} = 10V, V_{GS} = 0V

ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

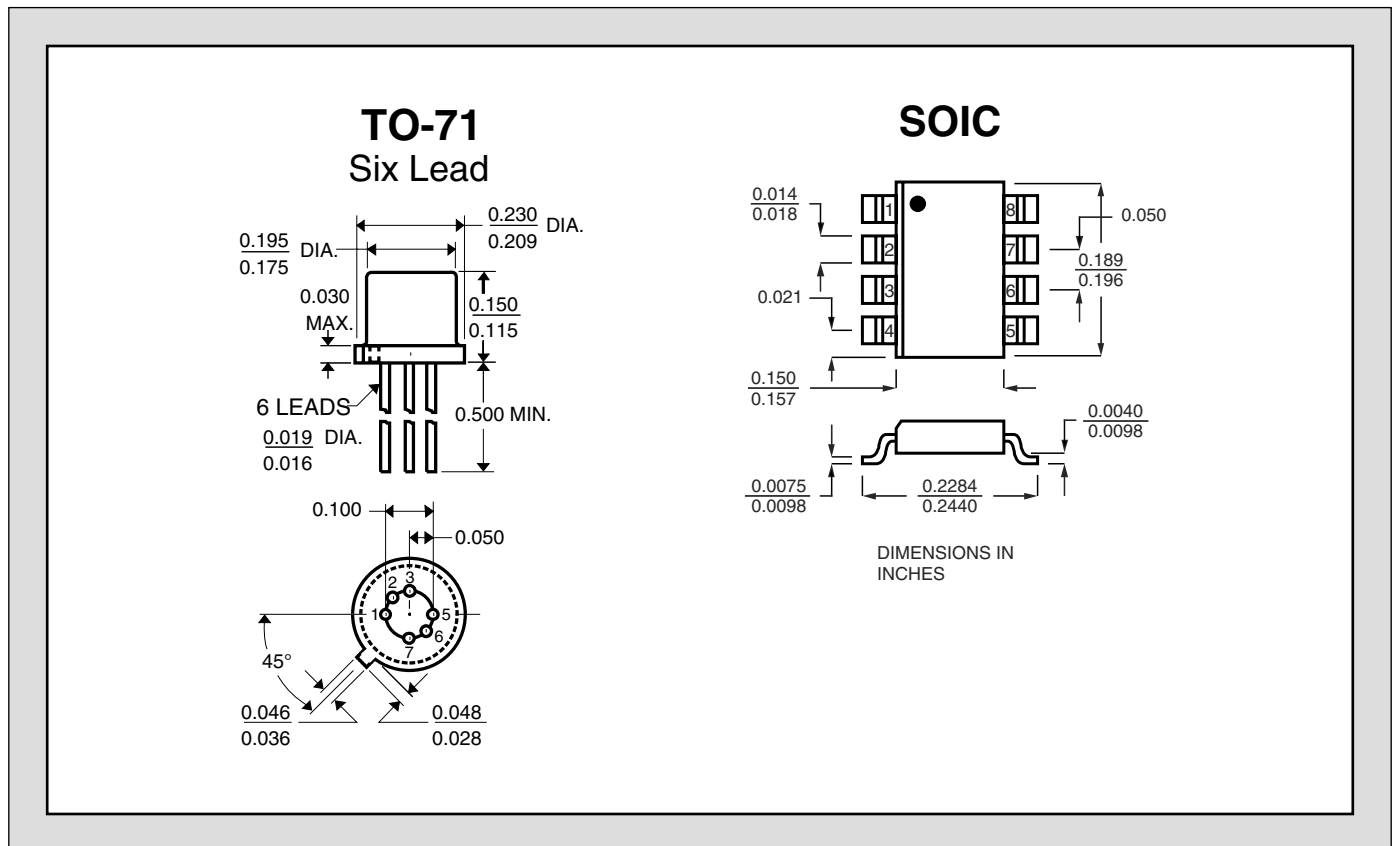| SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage		40			V	V_{DS} = 0, I_D = 100µA
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage		0.15		2	V	V_{DS} = 10V, I_D = 0.1µA
I_{DSS}	Drain to Source Saturation Current	LSK389A	2.6		6.5	mA	V_{DS} = 10V, V_{GS} = 0
		LSK389B	6		12		
		LSK389C	10		20		
I_{GSS}	Gate to Source Leakage Current				200	pA	V_{GS} = -30V, 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/√Hz	V_{DS} = 10V, I_D = 2mA, f = 1kHz, NBW = 1Hz
e_n	Noise Voltage		2.5	4	nV/√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

A	2.6 - 6.5 mA
B	6 - 12 mA
C	10 - 20 mA

Package

| 71 | TO-71 6L |
| SOIC-8 | SOIC-A 8L |

PACKAGE DIMENSIONS

TO-71
Six Lead

$\frac{0.230}{0.209}$ DIA.

$\frac{0.195}{0.175}$ DIA.

0.030 MAX.

$\frac{0.150}{0.115}$

6 LEADS

$\frac{0.019}{0.016}$ DIA.

0.500 MIN.

0.100

0.050

45°

$\frac{0.046}{0.036}$

$\frac{0.048}{0.028}$

SOIC

$\frac{0.014}{0.018}$

0.050

0.021

$\frac{0.189}{0.196}$

$\frac{0.150}{0.157}$

$\frac{0.0040}{0.0098}$

$\frac{0.0075}{0.0098}$

$\frac{0.2284}{0.2440}$
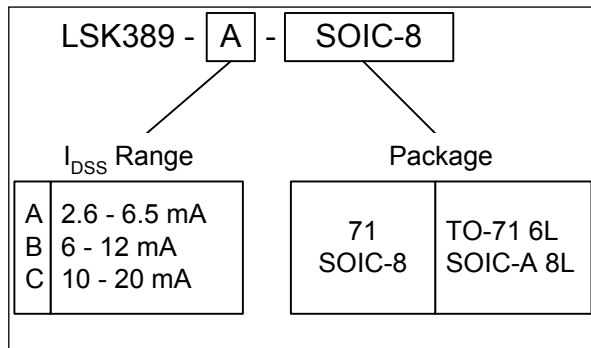
DIMENSIONS IN INCHES

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

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