

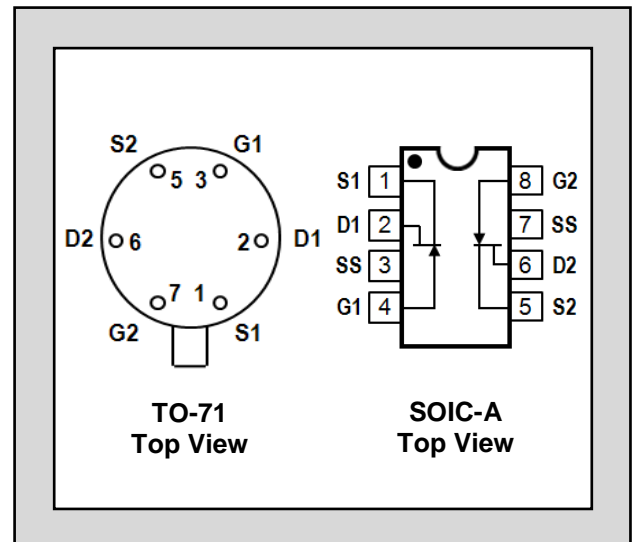
LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

LSK389

ULTRA LOW NOISE
MONOLITHIC DUAL
N-CANNEL JFET AMPLIFIER

FEATURES	
ULTRA LOW NOISE	$e_n = 0.9nV/\sqrt{Hz}$ (typ)
TIGHT MATCHING	$ V_{GS1-2} = 20mV$ max
HIGH BREAKDOWN VOLTAGE	$BV_{GSS} = 40V$ max
HIGH GAIN	$G_{fs} = 20mS$ (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
Junction Operating 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	$V_{GSS} = 40V$
Gate to Drain	$V_{GDS} = 40V$



* For equivalent single version, see LSK170 family

MATCHING CHARACTERISTICS @ 25°C (unless otherwise stated)

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

ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise stated)

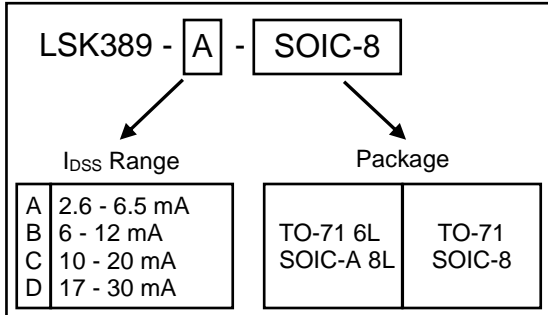
SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	-40			V	$V_{DS} = 0, I_D = -100\mu A$
$V_{GS(OFF)}$	Gate to Source Pinch-off Voltage	-0.15		-2	V	$V_{DS} = 10V, I_D = 0.1\mu A$
I_{DSS}	Drain to Source Saturation Current	LSK389A	2.6	6.5	mA	$V_{DS} = 10V, V_{GS} = 0$
		LSK389B	6	12		
		LSK389C	10	20		
		LSK389D	17	30		
I_{GSS}	Gate to Source Leakage Current			-200	pA	$V_{GS} = -30V, V_{DS} = 0$
I_{G1G2}	Gate to Gate Isolation Current			± 1.0	μA	$V_{G1-G2} = \pm 45V, I_D = I_S = 0A$

Note: All MIN/TYP/MAX limits are absolute numbers. Negative signs indicate electrical polarity only.

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

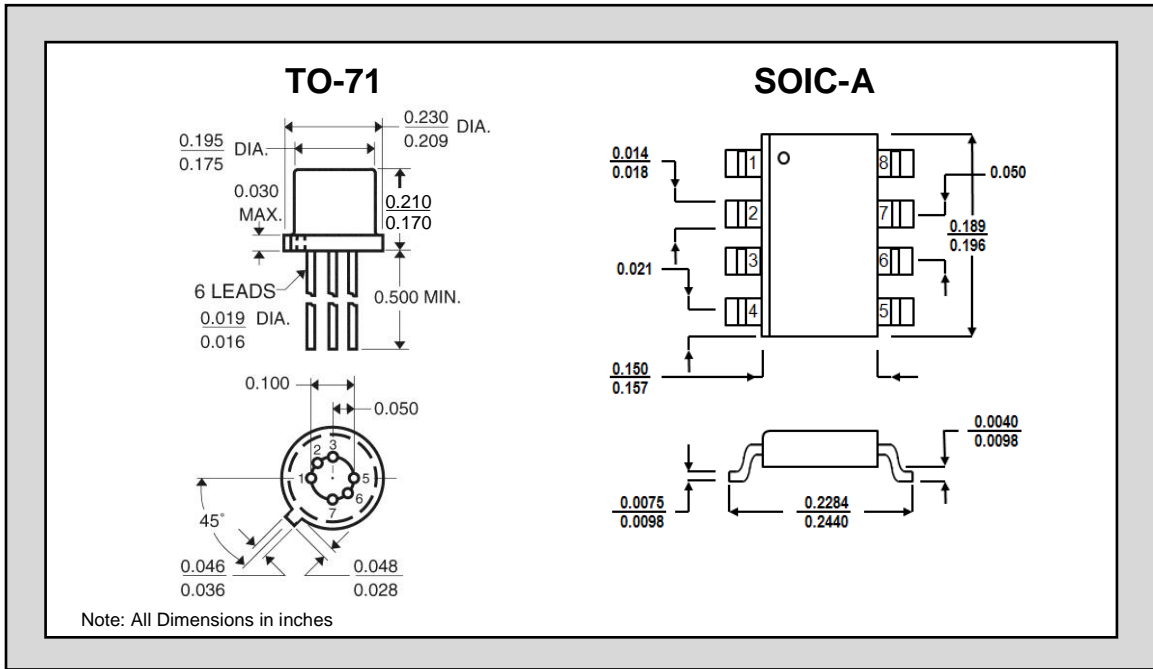
SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
G_{fs}	Full Conduction Transconductance	8	20		mS	$V_{DS} = 10V, V_{GS} = 0, f = 1kHz$
e_n	Noise Voltage		0.9	1.9	Nv/ \sqrt{Hz}	$V_{DS} = 10V, I_D = 2mA, f = 1kHz,$ $NBW = 1Hz$
e_n	Noise Voltage		2.5	4	Nv/ \sqrt{Hz}	$V_{DS} = 10V, I_D = 2mA, f = 10Hz,$ $NBW = 1Hz$
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	$V_{DG} = 10V, I_D = 0, f = 1MHz,$

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PACKAGE DIMENSIONS



NOTES:

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