

*New Jersey Semi-Conductor Products, Inc.*

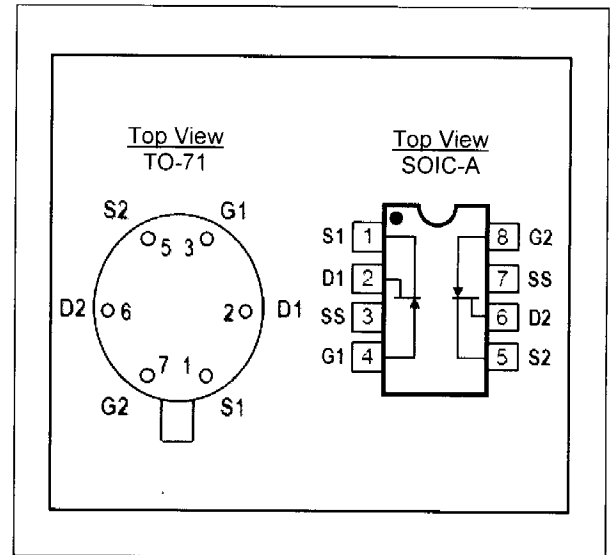
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# LSK389

## ULTRA LOW NOISE MONOLITHIC DUAL N-CHANNEL JFET

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 <sup>1</sup>	
@ 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			$\pm 1.0$	$\mu A$	$V_{G1-G2} = \pm 45V, I_D = I_S = 0A$

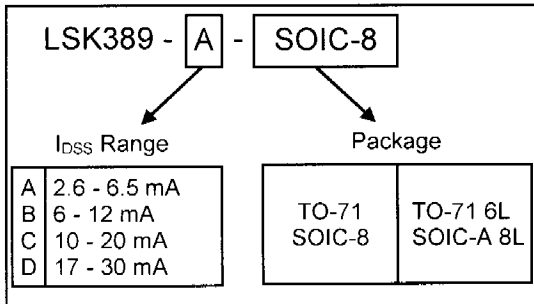
Note: All MIN/TYP/MAX limits are absolute numbers. Negative signs indicate electrical polarity only.



**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/√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	$V_{DS} = 10V, I_D = 0, f = 1MHz,$

**ORDERING INFORMATION**



**PACKAGE DIMENSIONS**

