LSK389 A/B/C/D

Ultra Low Noise Monolithic Dual N-Channel JFET Amplifier

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		-0.3		-1.6	V	V _{DS} = 10V, I _D = 0.1μA
	Drain to Source Saturation Current	LSK389A	2.6		6.5	mA	$V_{DS}=10V,\ V_{OS}=0$
Ines		LSK389B	6		12		
loss		LSK389C	10		20		
		LSK389D	17		30		
I _{GSS}	Gate to Source Leakage Current			-100	-300	pA	V _{GS} = -25V, V _{DS} = 0
la162	Gate to Gate Isolation Current			±1.0	±50	nA	V _{G1-G2} = ±45V, I _D = I _S = 0A
Gts	Full Conduction Transconductance		8	20		mS	V _{DS} = 10V, V _{GS} = 0, f = 1kHz
e _n	Noise Voltage			1.3	1.9	nV/√Hz	V _{DS} = 10V, I _D = 2mA, f = 1kHz, NBW = 1Hz
e _n	Noise Voltage			1.5	4.0	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,

Matching Characteristics @ 25°C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
Vası – Vasz	Differential Gate to Source Cutoff Voltage		6.0	15	mV	$V_{DS} = 10V, I_D = 1mA$
IDSS1 IDSS2	Saturation Drain Current Ratio	0.9	1.0	1.1	n/a	V _{DS} = 10V, V _{GS} = 0V

Absolute Maximum Ratings@ 25 $^{\circ}\text{C}$ (unless otherwise stated)Maximum Temperatures Storage Temperature—65 to +150 $^{\circ}\text{C}$ Junction Operating Temperature-55 to +150°C

Maximum Continuous Power Dissipation @ +25°C 400mW Maximum Currents: Gate Forward CurrentIG(F)= 10mA Maximum Voltages: Gate to SourceVGSS= 40 VGate to DrainVGDS= 40V

ldss: 4.25 mA

If a 40 om resistor is not possible to get, replace Q1 with a small jumper connected from pin 1 to 2 and use a 1K resistor in place of R12

All resistors, FETs and capacitators are THT.
Use high tolerance film resistors and X7R caps! All resistors and caps must be audio grade. All shield connections must be short as possible.

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Title: Balanced amplifier for piezo elements. Size: A4 Date: Rev: KiCad E.D.A. eeschema 5.1.10 ld: 1/1

150 220 220 R1 3.3M 3.3M TO-71 22nF 22nF Q2 LSK389B R2 3.3M R10 \times 1 \cup J3 3.3M ×1 (J5 LSK170B ×1 C J2 D1 1N3518A 1N3518A GND 2x 1N5230B-TR can be used. For connection to the piezo crystals: Use shielded cable, with 3 leads. Connect outer cable shield to metal box. Outer end of cable shield may be connected to the outer box that houses the crystals if that is used. If not, leave unconnected.

This line represent the outside of a metal box.

Connect outer cable shield and plug shield to metal box.

17

R5

680pF