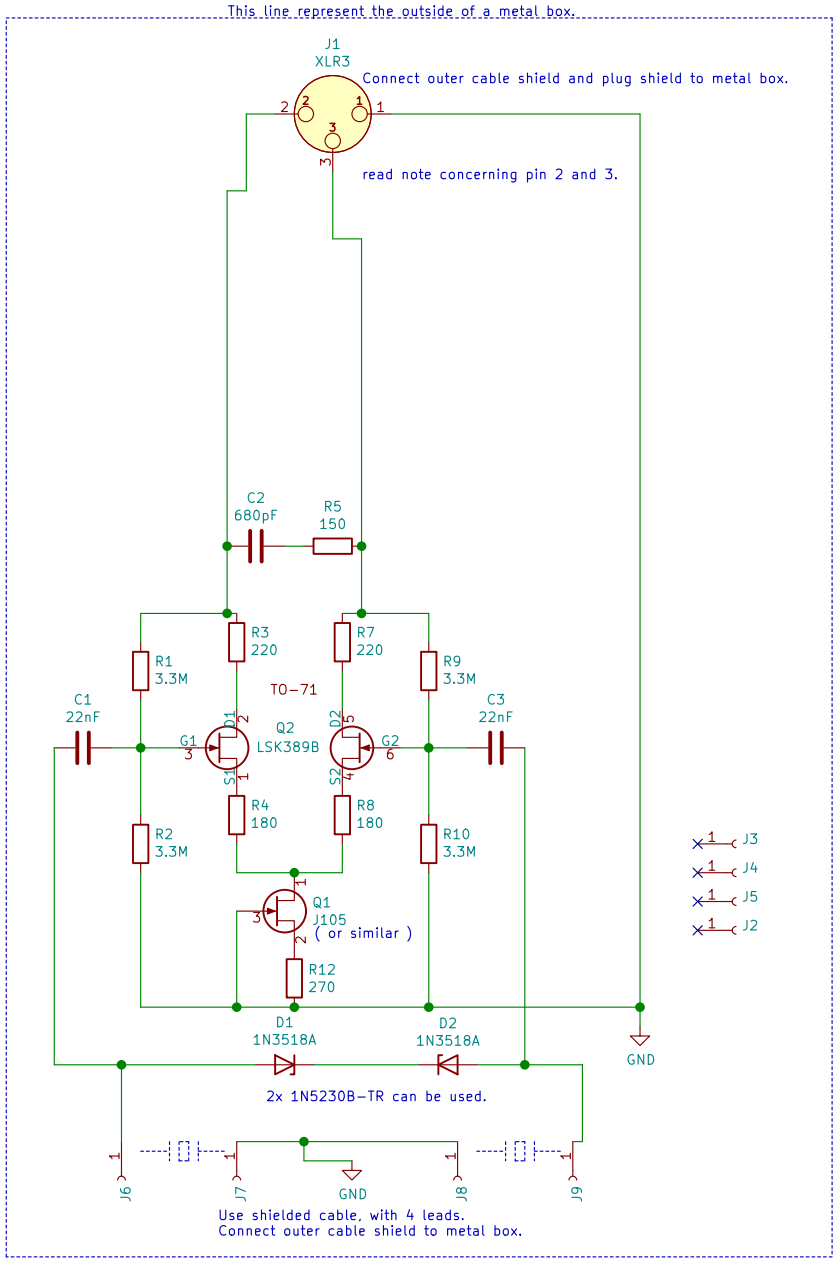



# LSK389 A/B/C/D

**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 |
| $I_{DSS}$ | 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 | | --- | -100 | -300 | pA | $V_{GS}$ = -25V, $V_{DS}$ = 0 |
| $I_{G1-G2}$ | Gate to Gate Isolation Current | | --- | ±1.0 | ±50 | nA | $V_{G1-G2}$ = ±45V, $I_D$ = $I_S$ = 0A |
| $G_{fs}$ | 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)**

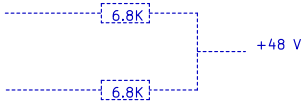
| SYMBOL | CHARACTERISTIC | MIN | TYP | MAX | UNITS | CONDITIONS |
|---|---|---|---|---|---|---|
| $\lvert V_{GS1} - V_{GS2} \rvert$ | Differential Gate to Source Cutoff Voltage | --- | 6.0 | 15 | mV | $V_{DS}$ = 10V, $I_D$ = 1mA |
| $\frac{I_{DSS1}}{I_{DSS2}}$ | Saturation Drain Current Ratio | 0.9 | 1.0 | 1.1 | n/a | $V_{DS}$ = 10V, $V_{GS}$ = 0V |

Absolute Maximum Ratings@ 25 °C (unless otherwise stated)Maximum Temperatures
Storage Temperature−65 to +150°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

Idss: 4.25 mA
vds(v): 10 v
vgs: 0.2
vds(v): 10 V
V GS(OFF): 0.4 V

DC supply voltage from XLR 3 is 1.504 Volts as it is +48 V phantom power

The voltage is the result from this voltage supply circuit:




All resistors, FETs and capacitators are THT.
Use film resistors and film caps!

Sheet: /
File: piezo-jfet.sch

**Title: Balanced amplifier for piezo elements.**

| Size: A4 | Date: | Rev: |
|---|---|---|
| KiCad E.D.A. eeschema 5.1.10 | | Id: 1/1 |