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 _{GS} = 0 |
| Inss | | 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 |
| Gis | 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)

| 1 | 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 |

Maximum Currents: Gate Forward CurrentIG(F)= 10mA Maximum Voltages: Gate to SourceVGSS= 40

Idss: 4.25 mA

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 VGate to DrainVGDS= 40V

> All resistors, FETs and capacitators are THT. Use 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: Baland | ed amplifier for piezo elements. | |
|------------------|----------------------------------|---------|
| Size: A4 | Date: | Rev: |
| KiCad E.D.A. kid | ad 5.1.10 | ld: 1/1 |

This line represent the outside of a metal box. XLR3 Connect outer cable shield and plug shield to metal box. R5 680pF 150 220 220 R1 3.3M 3.3M TO-71 22nF 22nF Q2 LSK389B R2 3.3M R10 ×1 J3 3.3M ×1 J5 J112 (or similar) ×1 C J2 D1 1N3518A 1N3518A H GND 2x 1N5230B-TR can be used. GND 8 For connection to the piezo crystals: Use shielded cable, with 4 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.