

Linear Systems replaces discontinued Siliconix J308

The LSJ308 is a high frequency n-channel JFET offering a wide range and low noise performance. The SOT-23 package is well suited for cost sensitive applications and mass production.

(See Packaging Information).

LSJ308 Benefits:

- High Power Low Noise gain
- Dynamic Range greater than 100dB
- Easily matched to 75Ω input

LSJ308 Applications:

- UHV / VHF Amplifiers
- Mixers
- Oscillators

FEATURES

DIRECT REPLACEMENT FOR SILICONIX J308

OUTSTANDING HIGH FREQUENCY GAIN $G_{DG} = 11.5\text{dB}$

LOW HIGH FREQUENCY NOISE $NF = 2.7\text{dB}$

ABSOLUTE MAXIMUM RATINGS @ 25°C¹

Maximum Temperatures

Storage Temperature -55°C to +150°C

Operating Junction Temperature -55°C to +135°C

Maximum Power Dissipation

Continuous Power Dissipation 350mW

MAXIMUM CURRENT

Gate Current 10mA

MAXIMUM VOLTAGES

Gate to Drain Voltage or Gate to Source Voltage -25V

LSJ308 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

| SYMBOL | CHARACTERISTIC | MIN | TYP. | MAX | UNIT | CONDITIONS |
|---------------|---|-----|------|------|------|------------------------------|
| BV_{GSS} | Gate to Source Breakdown Voltage | -25 | -- | -- | V | $V_{DS} = 0V, I_G = -1\mu A$ |
| $V_{GS(F)}$ | Gate to Source Forward Voltage | 0.7 | -- | 1 | | $V_{DS} = 0V, I_G = 10mA$ |
| $V_{GS(off)}$ | Gate to Source Cutoff Voltage | -1 | -- | -6.5 | | $V_{DS} = 10V, I_D = 1nA$ |
| I_{DSS} | Drain to Source Saturation Current ² | 12 | -- | 60 | mA | $V_{DS} = 10V, V_{GS} = 0V$ |
| I_G | Gate Operating Current (Note 3) | -- | -15 | -- | pA | $V_{DG} = 9V, I_D = 10mA$ |
| $r_{DS(on)}$ | Drain to Source On Resistance | -- | 35 | -- | Ω | $V_{GS} = 0V, I_D = 1mA$ |

LSJ308 DYNAMIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

| SYMBOL | CHARACTERISTIC | MIN | TYP. | MAX | UNIT | CONDITIONS |
|-----------|------------------------------|-----|------|-----|--------|---|
| g_{fs} | Forward Transconductance | 8 | 14 | | mS | $V_{DS} = 10V, I_D = 10mA, f = 1kHz$ |
| g_{os} | Output Conductance | -- | 110 | 250 | μS | |
| C_{iss} | Input Capacitance | -- | 4 | 5 | pF | $V_{DS} = 10V, V_{GS} = -10V, f = 1MHz$ |
| C_{rss} | Reverse Transfer Capacitance | -- | 1.9 | 2.5 | | |
| e_n | Equivalent Noise Voltage | 6 | -- | -- | nV/√Hz | $V_{DS} = 10V, I_D = 10mA, f = 100Hz$ |

LSJ308 HIGH FREQUENCY CHARACTERISTICS @ 25°C (unless otherwise noted)

| SYMBOL | CHARACTERISTIC | MIN | TYP. | MAX | UNIT | CONDITIONS | |
|----------|--------------------------|------------|------|------|------|------------|----------------------------|
| NF | Noise Figure | f = 105MHz | -- | 1.5 | -- | dB | $V_{DS} = 10V, I_D = 10mA$ |
| | | f = 450MHz | -- | 2.7 | -- | dB | |
| G_{pg} | Power Gain ³ | f = 105MHz | -- | 16 | -- | | |
| | | f = 450MHz | -- | 11.5 | -- | | |
| g_{fg} | Forward Transconductance | f = 105MHz | -- | 14 | -- | mS | |
| | | f = 450MHz | -- | 13 | -- | | |
| g_{og} | Output Conductance | f = 105MHz | -- | 0.16 | -- | | |
| | | f = 450MHz | -- | 0.55 | -- | | |

Note 1 - Absolute maximum ratings are limiting values above which LSJ308 serviceability may be impaired.

Note 2 - Pulse test : $PW \leq 300\mu s$, Duty Cycle $\leq 3\%$

Note 3 - Measured at optimum input noise match

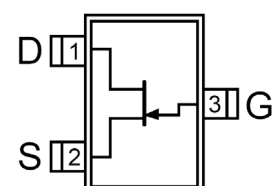
Micross Components Europe

Available Packages:

LSJ308 in SOT-23
LSJ308 in bare die.

Please contact Micross for full package and die dimensions

SOT-23 (Top View)



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