

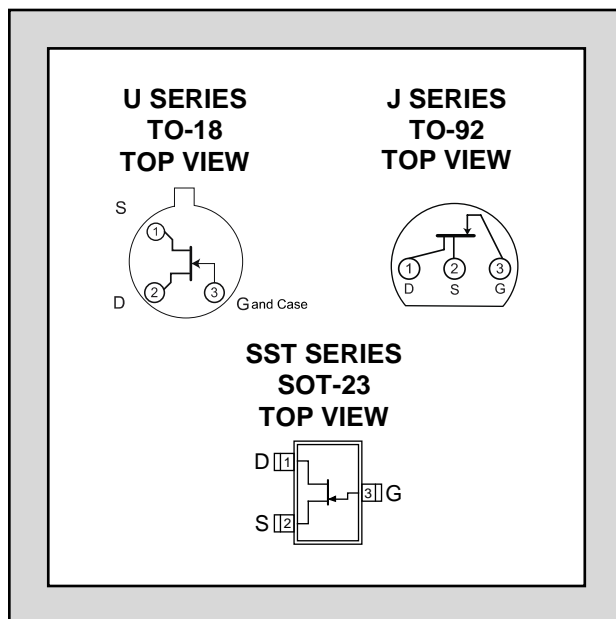
LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

U/J/SST308 SERIES

SINGLE N-CANNEL
HIGH FREQUENCY
JFET AMPLIFIER

| FEATURES | |
|--|--------------------------|
| Direct Replacement For SILICONIX U/J/SST308 SERIES | |
| OUTSTANDING HIGH FREQUENCY GAIN | $G_{pg} = 11.5\text{dB}$ |
| LOW HIGH FREQUENCY NOISE | $NF = 2.7\text{dB}$ |
| ABSOLUTE MAXIMUM RATINGS ¹ | |
| @ 25 °C (unless otherwise stated) | |
| Maximum Temperatures | |
| Storage Temperature | -55 to 150°C |
| Junction Operating Temperature | -55 to 150°C |
| Maximum Power Dissipation | |
| Continuous Power Dissipation (J/SST) ⁴ | 350mW |
| Continuous Power Dissipation (U) ⁵ | 500mW |
| Maximum Currents | |
| Gate Current (J/SST) | 10mA |
| Gate Current (U) | 20mA |
| Maximum Voltages | |
| Gate to Drain | -25V |
| Gate to Source | -25V |



COMMON ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

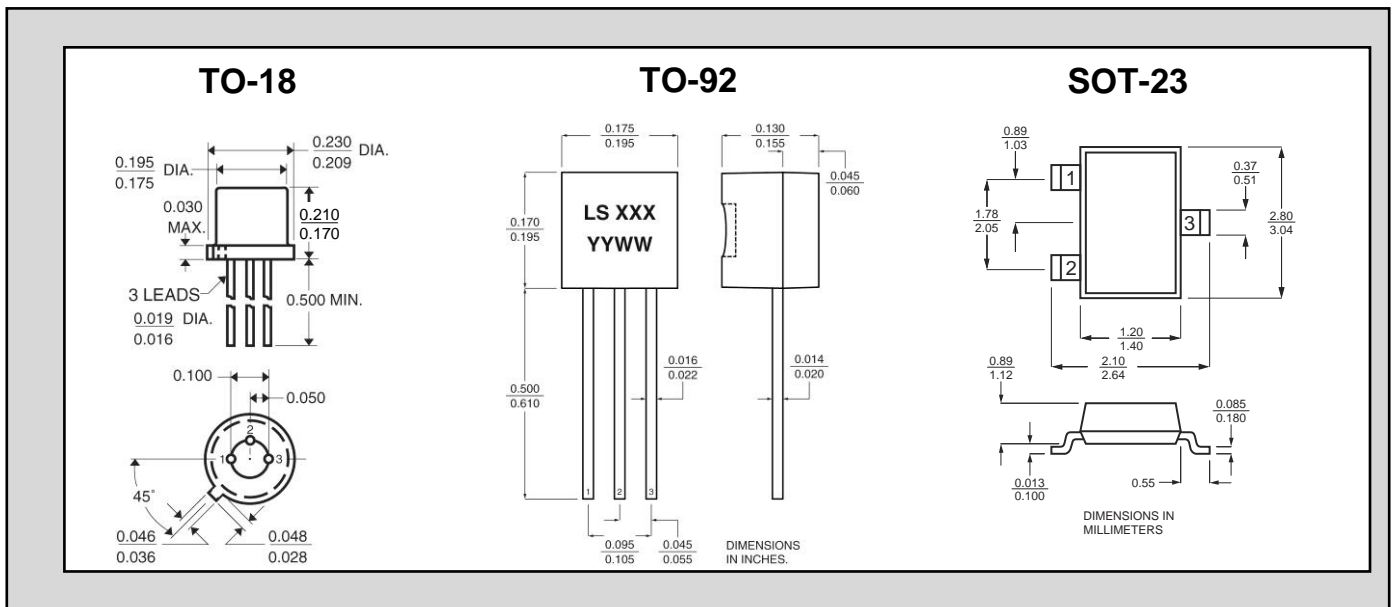
| SYMBOL | CHARACTERISTIC | MIN | TYP | MAX | UNIT | CONDITIONS |
|--------------|----------------------------------|---------------------|------|------|------------------------|--|
| BV_{GSS} | Gate to Source Breakdown Voltage | -25 | | | V | $I_G = -1\mu\text{A}, V_{DS} = 0\text{V}$ |
| $V_{GS(F)}$ | Gate to Source Forward Voltage | 0.7 | | 1.15 | | $I_G = 10\text{mA}, V_{DS} = 0\text{V}$ |
| I_G | Gate Operating Current | | -15 | | pA | $V_{DG} = 9\text{V}, I_D = 10\text{mA}$ |
| $r_{DS(on)}$ | Drain to Source On Resistance | | 35 | | Ω | $V_{GS} = 0\text{V}, I_D = 1\text{mA}$ |
| e_n | Equivalent Noise Voltage | | 6 | | nV/ $\sqrt{\text{Hz}}$ | $V_{DS} = 10\text{V}, I_D = 10\text{mA}, f = 100\text{Hz}$ |
| NF | Noise Figure | $f = 105\text{MHz}$ | 1.5 | | dB | $V_{DS} = 10\text{V}, I_D = 10\text{mA}$ |
| | | $f = 450\text{MHz}$ | 2.7 | | | |
| G_{pg} | Power Gain ² | $f = 105\text{MHz}$ | 16 | | dB | |
| | | $f = 450\text{MHz}$ | 11.5 | | | |
| g_{fg} | Forward Transconductance | $f = 105\text{MHz}$ | 14 | | mS | |
| | | $f = 450\text{MHz}$ | 13 | | | |
| g_{og} | Output Conductance | $f = 105\text{MHz}$ | 0.16 | | mS | |
| | | $f = 450\text{MHz}$ | 0.55 | | | |
| I_{GSS} | Gate Reverse Current | | | -1 | nA | $V_{GS} = -15\text{V}, V_{DS} = 0\text{V}$ |

SPECIFIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

| SYM. | CHARACTERISTIC | TYP | J/SST308 | | J/SST309 | | J/SST310 | | UNIT | CONDITIONS |
|----------------------|---|-----|----------|------|----------|-----|----------|------|------|---|
| | | | MIN | MAX | MIN | MAX | MIN | MAX | | |
| V _{GS(off)} | Gate to Source Cutoff Voltage | | -1 | -6.5 | -1 | -4 | -2 | -6.5 | V | V _{DS} = 10V, I _D = 1nA |
| I _{BSS} | Source to Drain Saturation Current ³ | | 12 | 75 | 12 | 30 | 24 | 75 | mA | V _{DS} = 10V, V _{GS} = 0V |
| C _{iss} | Input Capacitance | 4 | | | | | | | pF | V _{DS} = 10V, V _{GS} = -10V f = 1MHz |
| C _{rss} | Reverse Transfer Capacitance | 1.9 | | | | | | | | |
| g _{fs} | Forward Transconductance | 14 | 8 | | 10 | | 8 | | mS | V _{DS} = 10V, I _D = 10mA f = 1kHz |
| g _{os} | Output Conductance | 110 | | 250 | | 250 | | 250 | μS | |

SPECIFIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

| SYM. | CHARACTERISTIC | TYP | U308 | | U309 | | U310 | | UNIT | CONDITIONS |
|----------------------|---|-----|------|------|------|-----|------|------|------|---|
| | | | MIN | MAX | MIN | MAX | MIN | MAX | | |
| V _{GS(off)} | Gate to Source Cutoff Voltage | | -1 | -6.5 | -1 | -4 | -2.5 | -6.5 | V | V _{DS} = 10V, I _D = 1nA |
| I _{BSS} | Source to Drain Saturation Current ³ | | 12 | 75 | 12 | 30 | 24 | 75 | mA | V _{DS} = 10V, V _{GS} = 0V |
| C _{iss} | Input Capacitance | 4 | | 5 | | 5 | | 5 | pF | V _{DS} = 10V, V _{GS} = -10V f = 1MHz |
| C _{rss} | Reverse Transfer Capacitance | 1.9 | | 2.5 | | 2.5 | | 2.5 | | |
| g _{fs} | Forward Transconductance | 14 | 10 | | 10 | | 10 | | mS | V _{DS} = 10V, I _D = 10mA f = 1kHz |
| g _{os} | Output Conductance | 110 | | 250 | | 250 | | 250 | μS | |



NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Measured at optimum input noise match
3. Pulse test: PW ≤ 300μs, Duty Cycle ≤ 3%
4. Derate 2.8mW/°C above 25°C
5. Derate 4mW/°C above 25°C

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