

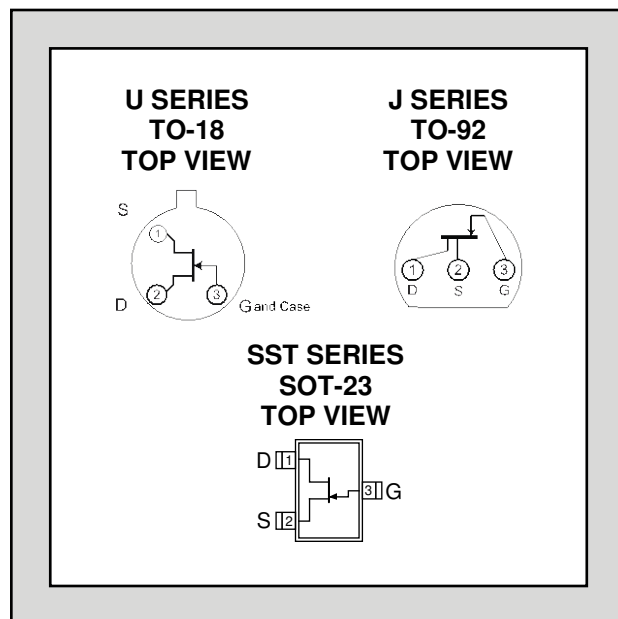
# LINEAR SYSTEMS

Improved Standard Products®

## 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 <sup>1</sup>	
@ 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) <sup>4</sup>	350mW
Continuous Power Dissipation (U) <sup>5</sup>	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)

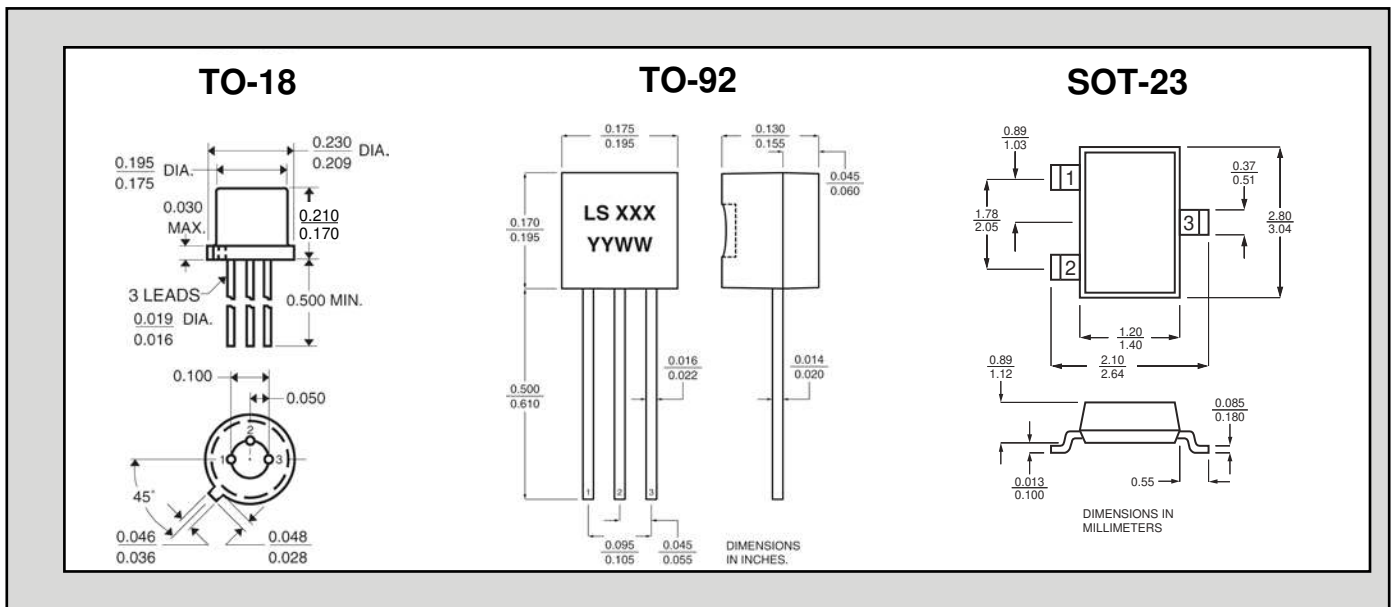
SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNIT	CONDITIONS
$BV_{GSS}$	Gate to Source Breakdown Voltage	-25			V	$I_G = -1\mu\text{A}, V_{DS} = 0\text{V}$
$V_{GS(F)}$	Gate to Source Forward Voltage	0.7		1.15		$I_G = 10\text{mA}, V_{DS} = 0\text{V}$
$I_G$	Gate Operating Current		-15		pA	$V_{DG} = 9\text{V}, I_D = 10\text{mA}$
$r_{DS(on)}$	Drain to Source On Resistance		35		$\Omega$	$V_{GS} = 0\text{V}, I_D = 1\text{mA}$
$e_n$	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 <sup>2</sup>	$f = 105\text{MHz}$	16			
		$f = 450\text{MHz}$	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			
		$f = 450\text{MHz}$	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 <sub>GS(off)</sub>	Gate to Source Cutoff Voltage		-1	-6.5	-1	-4	-2	-6.5	V	V <sub>DS</sub> = 10V, I <sub>D</sub> = 1nA
I <sub>DSS</sub>	Source to Drain Saturation Current <sup>3</sup>		12	75	12	30	24	75	mA	V <sub>BS</sub> = 10V, V <sub>GS</sub> = 0V
C <sub>iss</sub>	Input Capacitance	4							pF	V <sub>DS</sub> = 10V, V <sub>GS</sub> = -10V f = 1MHz
C <sub>rss</sub>	Reverse Transfer Capacitance	1.9								
g <sub>fs</sub>	Forward Transconductance	14	8		10		8		mS	V <sub>DS</sub> = 10V, I <sub>D</sub> = 10mA f = 1kHz
g <sub>os</sub>	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 <sub>GS(off)</sub>	Gate to Source Cutoff Voltage		-1	-6.5	-1	-4	-2.5	-6.5	V	V <sub>DS</sub> = 10V, I <sub>D</sub> = 1nA
I <sub>DSS</sub>	Source to Drain Saturation Current <sup>3</sup>		12	75	12	30	24	75	mA	V <sub>BS</sub> = 10V, V <sub>GS</sub> = 0V
C <sub>iss</sub>	Input Capacitance	4		5		5		5	pF	V <sub>DS</sub> = 10V, V <sub>GS</sub> = -10V f = 1MHz
C <sub>rss</sub>	Reverse Transfer Capacitance	1.9		2.5		2.5		2.5		
g <sub>fs</sub>	Forward Transconductance	14	10		10		10		mS	V <sub>DS</sub> = 10V, I <sub>D</sub> = 10mA f = 1kHz
g <sub>os</sub>	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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