

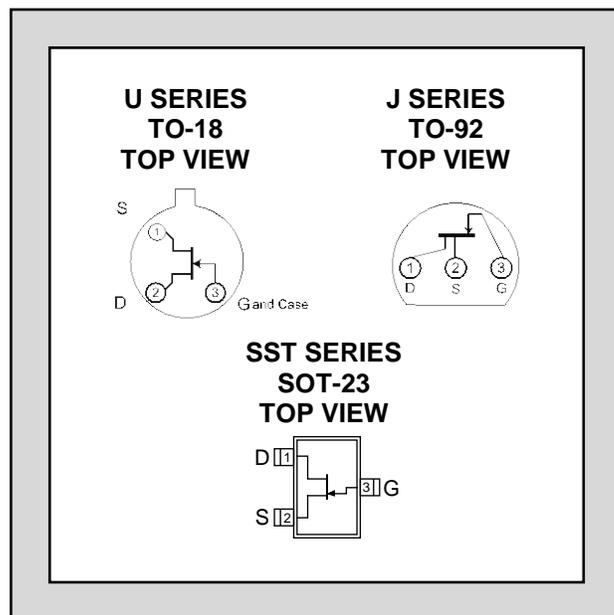
LINEAR SYSTEMS

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 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)

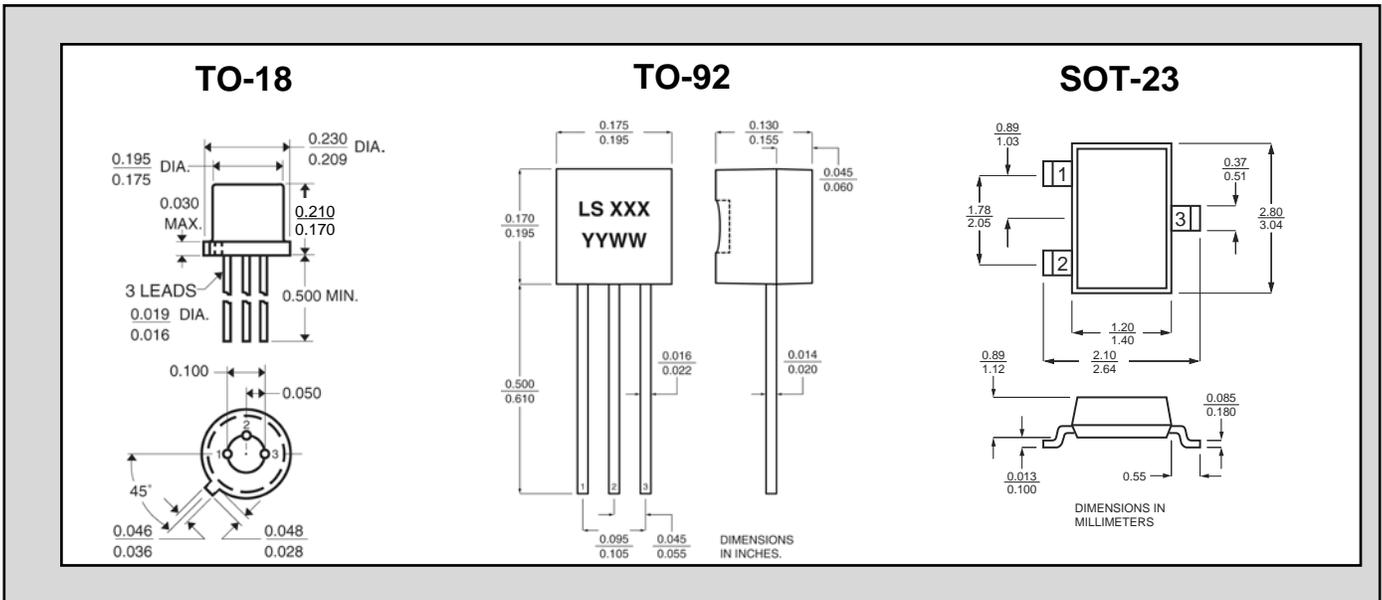
SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNIT	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	-25			V	$I_G = -1\mu\text{A}, V_{DS} = 0\text{V}$
$V_{GS(F)}$	Gate to Source Forward Voltage	0.7		1.15		$I_G = 10\text{mA}, V_{DS} = 0\text{V}$
I_G	Gate Operating Current		-15		pA	$V_{DG} = 9\text{V}, I_D = 10\text{mA}$
$r_{DS(on)}$	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			
		$f = 450\text{MHz}$	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 _{GS(off)}	Gate to Source Cutoff Voltage		-1	-6.5	-1	-4	-2	-6.5	V	V _{DS} = 10V, I _D = 1nA
I _{DSS}	Source to Drain Saturation Current ³		12	75	12	30	24	75	mA	V _{BS} = 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 _{DSS}	Source to Drain Saturation Current ³		12	75	12	30	24	75	mA	V _{BS} = 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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