

LINEAR SYSTEMS

Linear Integrated Systems

U/J/SST308 SERIES SINGLE N-CHANNEL HIGH FREQUENCY JFET

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 RATINGS¹

@ 25 °C (unless otherwise stated)

Maximum Temperatures

Storage Temperature -55 to 150°C

Junction Operating Temperature -55 to 135°C

Maximum Power Dissipation

Continuous Power Dissipation (J/SST) 350mW

Continuous Power Dissipation (U) 500mW

Maximum Currents

Gate Current (J/SST) 10mA

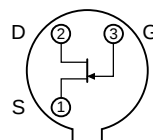
Gate Current (U) 20mA

Maximum Voltages

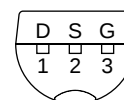
Gate to Drain -25V

Gate to Source -25V

TO-18
BOTTOM VIEW

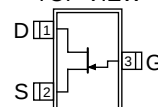


J SERIES
TO-92
BOTTOM VIEW



SST SERIES

SOT-23
TOP VIEW



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 = -1μA, V _{DS} = 0V
V _{GS(F)}	Gate to Source Forward Voltage		0.7		1		I _G = 10mA, V _{DS} = 0V
I _G	Gate Operating Current			-15		pA	V _{DG} = 9V, I _D = 10mA
r _{DS(on)}	Drain to Source On Resistance			35		Ω	V _{GS} = 0V, I _D = 1mA
e _n	Equivalent Noise Voltage		6			nV/√Hz	V _{DS} = 10V, I _D = 10mA, f = 100Hz
NF	Noise Figure	f = 105MHz		1.5		dB	V _{DS} = 10V, I _D = 10mA
		f = 450MHz		2.7			
G _{pg}	Power Gain ²	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			

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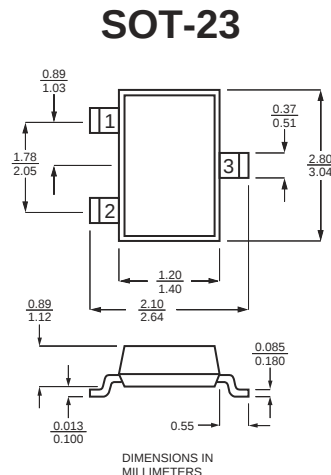
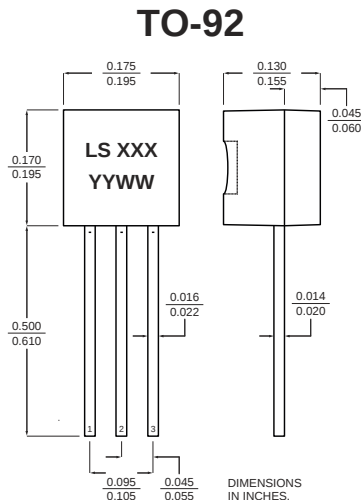
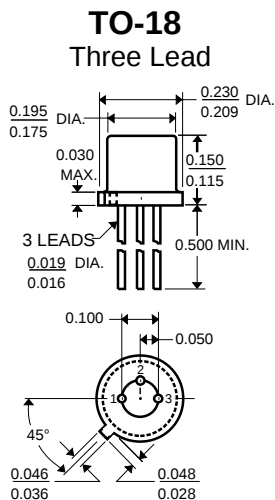
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SPECIFIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

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	60	12	30	24	60	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	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	60	12	30	24	60	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	



1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Measured at optimum input noise match.
3. Pulse test: $PW \leq 300\mu s$, Duty Cycle $\leq 3\%$

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