LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

J/SST111 SERIES

SINGLE N-CHANNEL
JFET SWITCH

FEATURES	
DIRECT REPLACEMENT FOR SILICONIX J/SST111 SERIES	
LOW GATE LEAKAGE CURRENT	5pA
FAST SWITCHING	4ns
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)[3]	360mW
Continuous Power Dissipation (SST)[3]	350mW
Maximum Currents	
Gate Current	50mA
Maximum Voltages	
Gate to Drain	-35V
Gate to Source	-35V

**J SERIES
TO-92
TOP VIEW**

**SST SERIES
SOT-23
TOP VIEW**
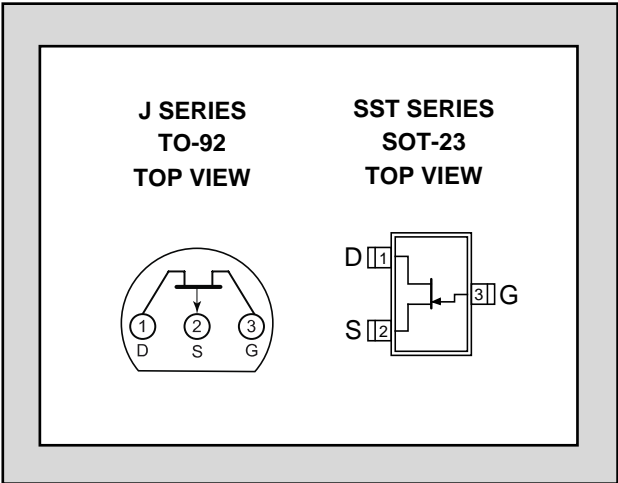
STATIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYM.	CHARACTERISTIC	TYP	J/SST111		J/SST112		J/SST113		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
BV$_{GSS}$	Gate to Source Breakdown Voltage		-35		-35		-35			I_G = -1µA, V_{DS} = 0V
V$_{GS(off)}$	Gate to Source Cutoff Voltage		-3	-10	-1	-5		-3	V	V_{DS} = 5V, I_D = 1µA
V$_{GS(F)}$	Gate to Source Forward Voltage	0.7								I_G = 1mA, V_{DS} = 0V
I$_{DSS}$	Drain to Source Saturation Current[2]		20		5		2		mA	V_{DS} = 15V, V_{GS} = 0V
I$_{GSS}$	Gate Leakage Current	-0.005		-1		-1		-1	nA	V_{GS} = -15V, V_{DS} = 0V
I$_G$	Gate Operating Current	-5							pA	V_{DG} = 15V, I_D = 1.0mA
I$_{D(off)}$	Drain Cutoff Current	0.005		1		1		1	nA	V_{DS} = 5V, V_{GS} = -10V
r$_{DS(on)}$	Drain to Source On Resistance			30		50		100	Ω	V_{GS} = 0V, V_{DS} = 0.1V

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

SYM.	CHARACTERISTIC	TYP	J/SST111		J/SST112		J/SST113		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
g_{fs}	Forward Transconductance	6							mS	$V_{DS} = 20V$, $I_D = 1mA$
g_{os}	Output Conductance	25							µS	$f = 1kHz$
$r_{ds(on)}$	Drain to Source On Resistance			30		50		100	Ω	$V_{GS} = 0V$, $I_D = 1mA$ $f = 1kHz$
C_{iss}	Input Capacitance	7		12		12		12	pF	$V_{DS} = 0V$, $V_{GS} = -10V$
C_{rss}	Reverse Transfer Capacitance	3		5		5		5		$f = 1MHz$
e_n	Equivalent Noise Voltage	3							nV/√Hz	$V_{DG} = 10V$, $I_D = 1mA$ $f = 1 kHz$

SWITCHING CHARACTERISTICS

SYM.	CHARACTERISTIC	TYP	UNIT	CONDITIONS
$t_{d(on)}$	Turn On Time	2	ns	$V_{DD} = 10V$ $V_{GS(H)} = 0V$
t_r		2		
$t_{d(off)}$	Turn Off Time	6		
t_f		15		

SWITCHING CIRCUIT CHARACTERISTICS

SYM.	J/SST111	J/SST112	J/SST113
$V_{GS(L)}$	-12V	-7V	-5V
R_L	800Ω	1600Ω	3200Ω
$I_{D(on)}$	12mA	6mA	3mA

TO-92   SOT-23   SWITCHING TEST CIRCUIT
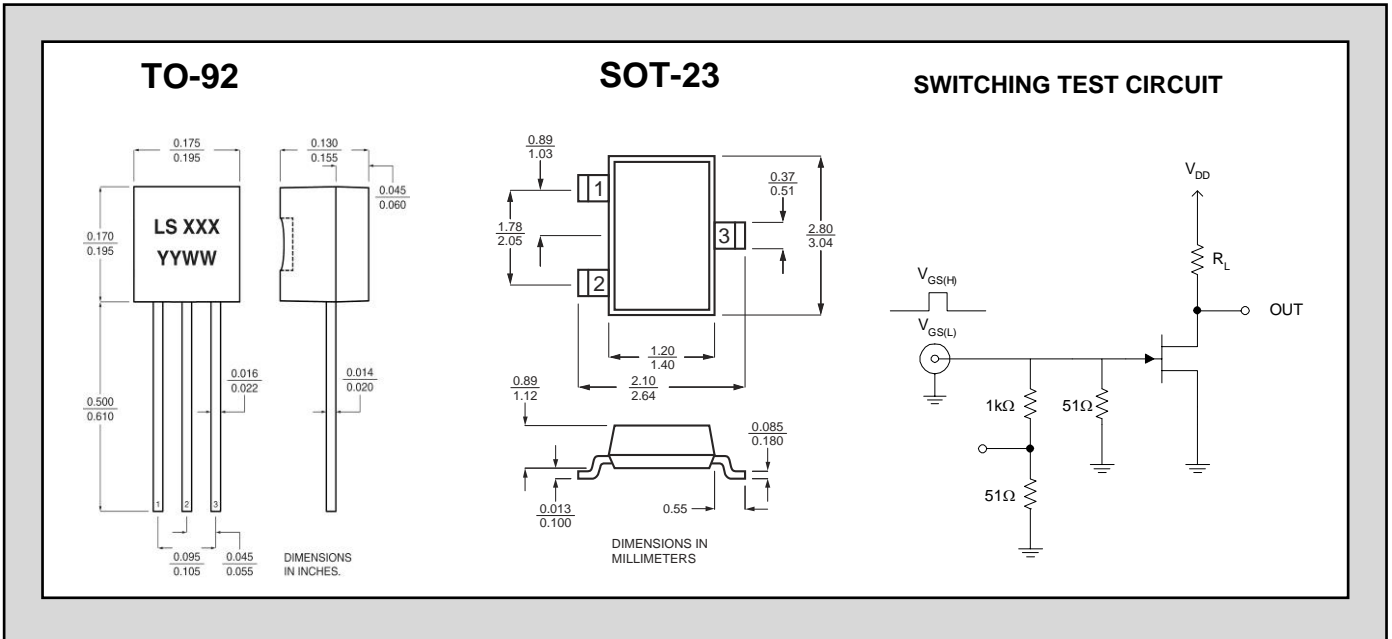
NOTES

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

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Linear Integrated Systems (LIS) is a 25-year-old, third-generation precision semiconductor company providing high-quality discrete components. Expertise brought to LIS is based on processes and products developed at Amelco, Union Carbide, Intersil and Micro Power Systems by company President John H. Hall. Hall, a protégé of Silicon Valley legend Dr. Jean Hoerni, was the director of IC Development at Union Carbide, Co-Founder and Vice President of R&D at Intersil, and Founder/President of Micro Power Systems.

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