

LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

J/SST108 SERIES

LOW NOISE SINGLE
N-CHANNEL JFET SWITCH

FEATURES

Direct Replacement for Siliconix J/SST: 108, 109, 110, & 110A

LOW ON RESISTANCE $r_{DS(on)} \leq 8\Omega$

FAST SWITCHING $t_{ON} \leq 4ns$

ABSOLUTE MAXIMUM RATINGS¹

@ 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 Dissipation³ 350mW

Maximum Currents

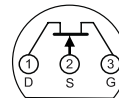
Gate Current 50mA

Maximum Voltages

Gate to Drain or Source -25V

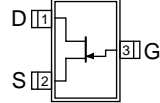
J SERIES

TO-92
TOP VIEW



SST SERIES

SOT-23
TOP VIEW



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

SYM.	CHARACTERISTIC	TYP	J/SST108		J/SST109		J/SST110		UNIT	CONDITIONS	
			MIN	MAX	MIN	MAX	MIN	MAX			
BV _{GSS}	Gate to Source Breakdown Voltage		-25		-25		-25		V	I _G = -1μA, V _{DS} = 0V	
V _{GS(off)}	Gate to Source Cutoff Voltage		-3	-10	-2	-6	-0.5	-4		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		80		40		10		mA	V _{DS} = 15V, V _{GS} = 0V	
I _{GSS}	Gate Leakage Current	-0.01		-3		-3		-3		V _{GS} = -15V, V _{DS} = 0V	
I _G	Gate Operating Current	-0.01								V _{DG} = 10V, I _D = 10mA	
I _{D(off)}	Drain Cutoff Current	0.02		3		3		3	nA	V _{DS} = 5V, V _{GS} = -10V	
r _{DS(on)}	Drain to Source On Resistance	108, 109, 110		8		12		18		Ω	V _{GS} = 0V, V _{DS} ≤ 0.1V
		110A					25				

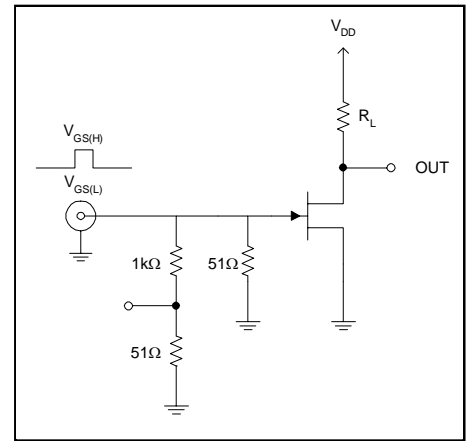
DYNAMIC ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYM.	CHARACTERISTIC	TYP	J/SST108		J/SST109		J/SST110		UNIT	CONDITIONS	
			MIN	MAX	MIN	MAX	MIN	MAX			
g _{fs}	Forward Transconductance	17							mS	V _{DS} = 5V, I _D = 10mA f = 1kHz	
g _{os}	Output Conductance	0.6								V _{GS} = 0V, I _D = 1mA f = 1kHz	
r _{ds(on)}	Drain to Source On Resistance			8		12		18	Ω	V _{DS} = 0V, V _{GS} = 0V f = 1MHz	
C _{iss}	Input Capacitance	SST	60							pF	V _{DS} = 0V, V _{GS} = -10V f = 1MHz
		J	60	85		85		85			
C _{rss}	Reverse Transfer Capacitance	SST	11						pF	V _{DS} = 0V, V _{GS} = -10V f = 1MHz	
		J	11	15		15		15			
e _n	Equivalent Input Noise Voltage	3.5							nV/√Hz	V _{DS} = 5V, I _D = 10mA f = 1kHz	

SWITCHING CHARACTERISTICS

SYM.	CHARACTERISTIC	TYP	UNIT	CONDITIONS
$t_{d(on)}$	Turn On Time	3	ns	$V_{DD} = 1.5V$ $V_{GS(H)} = 0V$
t_r		1		
$t_{d(off)}$	Turn Off Time	4		
t_f		18		

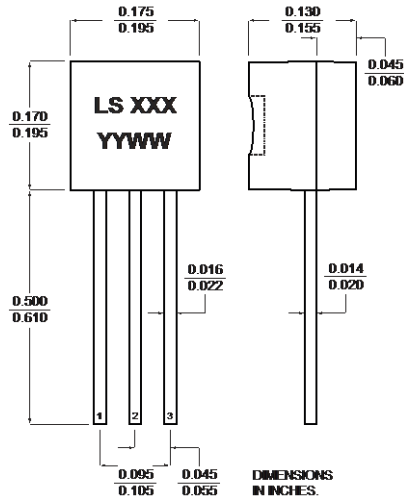
SWITCHING TEST CIRCUIT



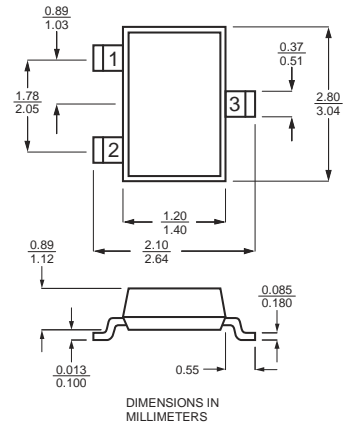
SWITCHING CIRCUIT CHARACTERISTICS

SYM.	J/SST108	J/SST109	J/SST110
$V_{GS(L)}$	-12V	-7V	-5V
R_L	150Ω	150Ω	150Ω
$I_{D(on)}$	10mA	10mA	10mA

TO-92



SOT-23



NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse test: $PW \leq 300\mu s$, Duty Cycle $\leq 3\%$
3. Derate $2.8mW/^\circ C$ above $25^\circ C$

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