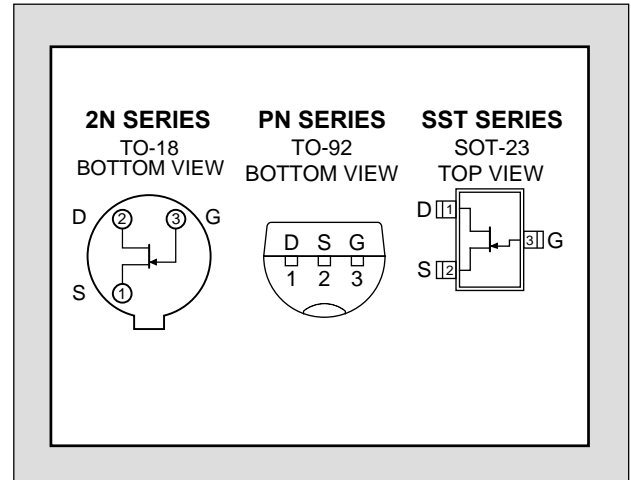


2N/PN/SST4391 SERIES

SINGLE N-CANNEL JFET SWITCH

FEATURES	
Replacement for Siliconix 2N/PN/SST4391, 4292, & 4393	
LOW ON RESISTANCE	$r_{DS(on)} \leq 30\Omega$
FAST SWITCHING	$t_{ON} \leq 15ns$
ABSOLUTE MAXIMUM RATINGS ¹	
@ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature (2N)	-65 to 200°C
Storage Temperature (PN/SST)	-55 to 150°C
Junction Operating Temperature (2N)	-55 to 200°C
Junction Operating Temperature (PN/SST)	-55 to 150°C
Maximum Power Dissipation	
Continuous Power Dissipation (2N)	1800mW
Continuous Power Dissipation (PN/SST)	350mW
Maximum Currents	
Gate Current	50mA
Maximum Voltages	
Gate to Drain or Source (2N/PN)	-40V
Gate to Drain or Source (SST)	-35V



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

SYM.	CHARACTERISTIC	TYP	4391		4392		4393		UNIT	CONDITIONS				
			MIN	MAX	MIN	MAX	MIN	MAX						
BV _{GSS}	Gate to Source Breakdown Voltage	2N/PN	-40		-40		-40		V	I _G = -1μA, V _{DS} = 0V				
		SST	-35		-35		-35							
V _{GS(off)}	Gate to Source Cutoff Voltage	2N/PN	-4	-10	-2	-5	-0.5	-3			V	V _{DS} = 20V, I _D = 1nA		
		SST	-4	-10	-2	-5	-0.5	-3						
V _{GS(F)}	Gate to Source Forward Voltage	0.7		1		1		V					I _G = 1mA, V _{DS} = 0V	
V _{DS(on)}	Drain to Source On Voltage	0.25					0.4							mA
		0.3			0.4									
		0.35		0.4										
I _{DSS}	Drain to Source Saturation Current ²	2N	50	150	25	75	5		30	pA	V _{GS} = -20V, V _{DS} = 0V			
		PN	50	100	25	100	5		60					
		SST	50		25		5							
I _{GSS}	Gate Leakage Current	2N/SST	-5	-100		-100		-100	pA			V _{DS} = 0V		
		PN	-5	-1000		-1000		-1000						
I _G	Gate Operating Current	-5							pA			V _{DG} = 15V, I _D = 10mA		

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

SYM.	CHARACTERISTIC	TYP	4391		4392		4393		UNIT	CONDITIONS	
			MIN	MAX	MIN	MAX	MIN	MAX			
I _{D(off)}	Drain Cutoff Current	2N	5					100	pA	V _{DS} = 20V, V _{GS} = -5V	
			5			100				V _{DS} = 20V, V _{GS} = -7V	
			5	100						V _{DS} = 20V, V _{GS} = -12V	
		PN	5					1000			V _{DS} = 20V, V _{GS} = -5V
			5			1000					V _{DS} = 20V, V _{GS} = -7V
			5	1000							V _{DS} = 20V, V _{GS} = -12V
		SST	5		100	100		100			V _{DS} = 10V, V _{GS} = -10V
I _{DS(on)}	Drain to Source On Resistance			30	60		100	Ω	V _{GS} = 0V, I _D = 1mA		

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

SYM.	CHARACTERISTIC	TYP	4391		4392		4393		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	60		100		Ω	V _{GS} = 0V, I _D = 0A f = 1kHz
C _{iss}	Input Capacitance	2N	12	14	14	14			pF	V _{DS} = 20V, V _{GS} = 0V f = 1MHz
		PN	12	16	16	16				
		SST	13							
C _{rss}	Reverse Transfer Capacitance	2N	3.3				3.5		pF	V _{DS} = 0V, V _{GS} = -5V f = 1MHz
		PN	3.5				5			
		SST	3.6							V _{DS} = 0V, V _{GS} = -7V f = 1MHz
		2N	3.2			3.5				
		PN	3.4			5				V _{DS} = 0V, V _{GS} = -12V f = 1MHz
		SST	3.5							
		2N	2.8	3.5						
		PN	3.0	5						
SST	3.1									
e _n	Equivalent Input Noise Voltage	3						nV/√Hz	V _{DS} = 10V, I _D = 10mA f = 1kHz	

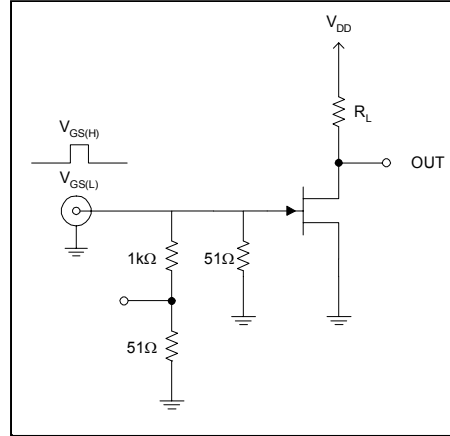
SWITCHING ELECTRICAL CHARACTERISTICS @25 °C (unless otherwise stated)

SYM.	CHARACTERISTIC	TYP	4391		4392		4393		UNIT	CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
t _{d(on)}	Turn On Time	2N/PN	2	15	15	15			ns	V _{DD} = 10V, V _{GS(H)} = 0V
		SST	2							
t _r		2N/PN	2	5	5	5				
		SST	2							
t _{d(off)}	Turn Off Time	2N/PN	6	20	35	50				
		SST	6							
t _f		2N/PN	13	15	20	30				
		SST	13							

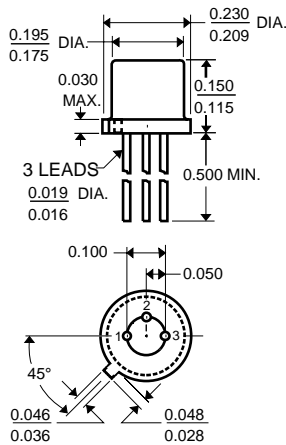
SWITCHING CIRCUIT CHARACTERISTICS

SYM.	4391	4392	4393
$V_{GS(L)}$	-12V	-7V	-5V
R_L	800 Ω	1600 Ω	3200 Ω
$I_{D(on)}$	12mA	6mA	3mA

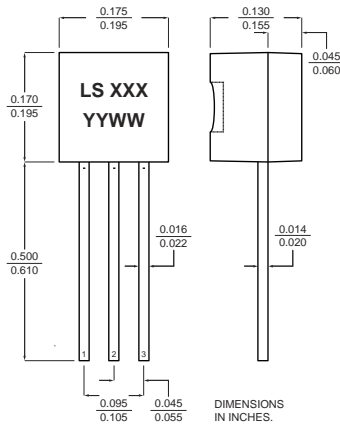
SWITCHING TEST CIRCUIT



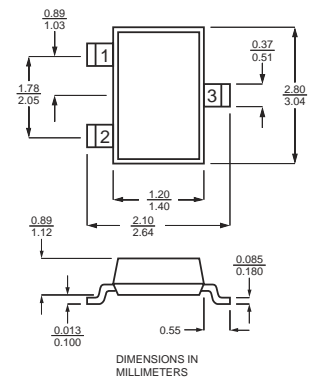
TO-18 Three Lead



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 $\leq 3\%$

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