

# LINEAR SYSTEMS

Improved Standard Products®

## J/SST174 SERIES

SINGLE P-CANNEL  
JFET SWITCH

### FEATURES

Replacement For SILICONIX J/SST174 SERIES

LOW ON RESISTANCE  $r_{DS(on)} \leq 85\Omega$

LOW GATE OPERATING CURRENT  $I_{D(off)} = 10pA$

### ABSOLUTE MAXIMUM RATINGS<sup>1</sup>

@ 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<sup>3</sup> 350mW

### Maximum Currents

Gate Current  $I_G = -50mA$

### Maximum Voltages

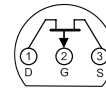
Gate to Drain Voltage  $V_{GDS} = 30V$

Gate to Source Voltage  $V_{GSS} = 30V$

### J SERIES

TO-92 3L

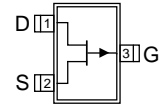
TOP View



### SST SERIES

SOT-23 3L

TOP VIEW



### COMMON ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS
$BV_{GSS}$	Gate to Source Breakdown Voltage	30			V	$I_G = 1\mu A, V_{DS} = 0V$
$V_{GS(F)}$	Gate to Source Forward Voltage		-0.7			$I_G = -1mA, V_{DS} = 0V$
$I_{GSS}$	Gate Reverse Current		0.01	1	nA	$V_{GS} = 20V, V_{DS} = 0V$
$I_G$	Gate Operating Current		0.01			$V_{DG} = -15V, I_D = -1mA$
$I_{D(off)}$	Drain Cutoff Current		-0.01	-1		$V_{DS} = -15V, V_{GS} = 10V$

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

SYMBOL	CHARACTERISTIC	J/SST174		J/SST175		J/SST176		J/SST177		UNITS	CONDITIONS
		MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX		
$V_{GS(off)}$	Gate to Source Cutoff Voltage	5	10	3	6	1	4	0.8	2.25	V	$V_{DS} = -15V, I_D = -10nA$
$I_{DSS}$	Drain to Source Saturation Current	-20	-195	-7	-90	-2	-55	-1.5	-30	mA	$V_{DS} = -15V, V_{GS} = 0V$
$r_{DS(on)}$	Drain to Source On Resistance		85		125		250		300	$\Omega$	$V_{GS} = 0V, V_{DS} = -0.1V$

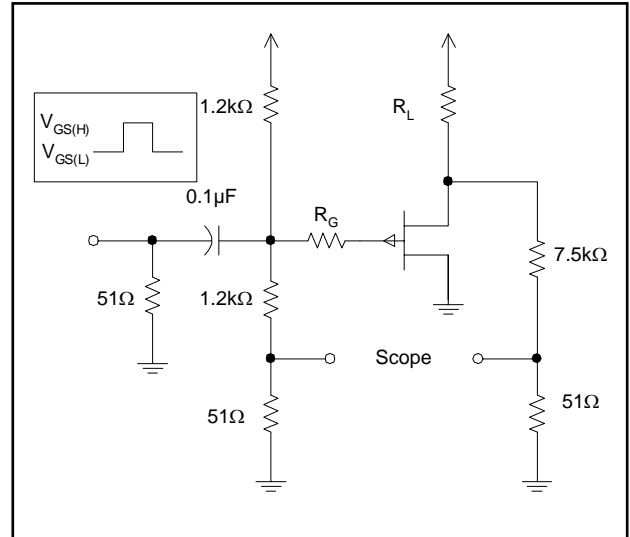
### SWITCHING CHARACTERISTICS

SYMBOL	CHARACTERISTIC	TYP	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	10	ns	$V_{GS(L)} = 0V$ $V_{GS(H)} = 10V$ See Switching Circuit
$t_r$	Turn On Rise Time	15		
$t_{d(off)}$	Turn Off Time	10		
$t_f$	Turn Off Fall Time	20		

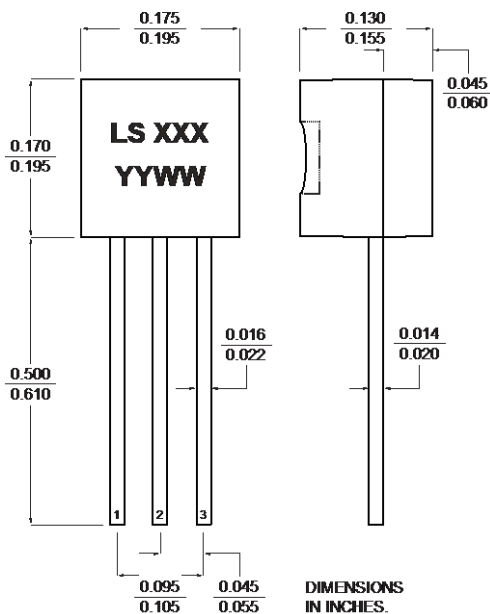
### SWITCHING CIRCUIT PARAMETERS

	J/SST174	J/SST175	J/SST176	J/SST177
$V_{DD}$	-10V	-6V	-6V	-6V
$V_{GG}$	20V	12V	8V	5V
$R_L$	560 $\Omega$	750 $\Omega$	1800 $\Omega$	5600 $\Omega$
$R_G$	100 $\Omega$	220 $\Omega$	390 $\Omega$	390 $\Omega$
$I_{D(on)}$	-15mA	-7mA	-3mA	-1mA

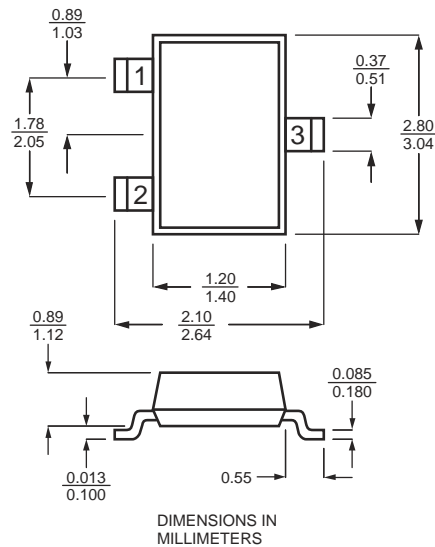
### SWITCHING CIRCUIT



### TO-92



### SOT-23



### NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulsed test:  $P_w \leq 300\mu s$  Duty Cycle: 3%

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3. Derate 2.8mW/°C above 25 °C.