

## Linear Systems replaces discontinued Siliconix J176

### The LSJ176 is a single P-Channel JFET switch

This p-channel analog switch is designed to provide low on-resistance and fast switching. When used in combination with the complimentary J/SST111 n-channel family, the LSJ176 simplifies series-shunt switching applications

#### LSJ176 Benefits:

- Low Error Voltage
- High-Speed Analog Circuit Performance
- Negligible "Off-Error," Excellent Accuracy
- Good Frequency Response
- Eliminates Additional Buffering

#### LSJ176 Applications:

- Analog Switches
- Choppers
- Sample-and-Hold
- Normally "On" Switches
- Current Limiters

#### FEATURES

DIRECT REPLACEMENT FOR SILICONIX J176

LOW ON RESISTANCE  $r_{DS(on)} \leq 250\Omega$

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

FAST SWITCHING  $t_{(ON)} 25ns$

**ABSOLUTE MAXIMUM RATINGS**  
@ 25°C (unless otherwise noted)

#### Maximum Temperatures

Storage Temperature -55°C to +150°C

Operating Junction Temperature -55°C to +135°C

#### Maximum Power Dissipation

Continuous Power Dissipation 350mW

#### MAXIMUM CURRENT

Gate Current (Note 1)  $I_G = -50mA$

#### MAXIMUM VOLTAGES

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

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

#### LSJ176 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

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	--		$I_G = -1mA, V_{DS} = 0V$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	1	--	4		$V_{DS} = -15V, I_D = -10nA$
$I_{DSS}$	Drain to Source Saturation Current	-2	--	-35	nA	$V_{DS} = -15V, V_{GS} = 0V$
$I_{GSS}$	Gate Reverse Current	--	0.01	1		$V_{GS} = 20V, V_{DS} = 0V$
$I_G$	Gate Operating Current	--	0.01	--		$V_{DG} = -15V, I_D = -1mA$
$I_{D(off)}$	Drain Cutoff Current	--	-0.01	-1		$V_{DS} = -15V, V_{GS} = 0V$
$r_{DS(on)}$	Drain to Source On Resistance	--	--	250		$V_{GS} = 0V, V_{DS} = -0.1V$

#### LSJ176 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

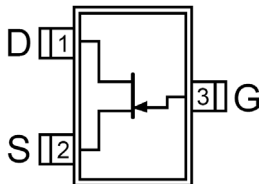
SYMBOL	CHARACTERISTIC	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	10	$V_{GS(L)} = 0V$ $V_{GS(H)} = 10V$  See Switching Circuit
$t_r$	Turn On Rise Time	15	
$t_{d(off)}$	Turn Off Time	10	
$t_f$	Turn Off Fall Time	20	

Note 1 - Absolute maximum ratings are limiting values above which LSJ176 serviceability may be impaired.

#### LSJ176 SWITCHING CIRCUIT PARAMETERS

$V_{DD}$	-6V
$V_{GG}$	8V
$R_L$	1800Ω
$R_G$	390Ω
$I_{D(on)}$	-3mA

#### SOT-23 (Top View)

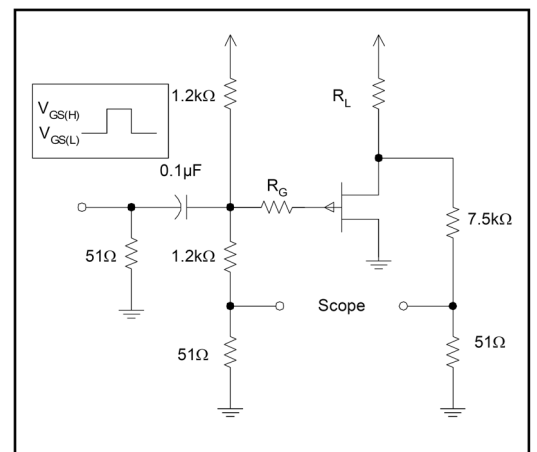


Available Packages:

LSJ176 in SOT-23  
LSJ176 in bare die.

Please contact Micross for full package and die dimensions

#### SWITCHING CIRCUIT



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