

## Linear Systems replaces discontinued Siliconix J175

### The LSJ175 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 LSJ175 simplifies series-shunt switching applications

#### LSJ175 Benefits:

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

#### LSJ175 Applications:

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

#### FEATURES

DIRECT REPLACEMENT FOR SILICONIX J175

LOW ON RESISTANCE	$r_{DS(on)} \leq 125\Omega$
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	$V_{GSS} = 30V$

#### LSJ175 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	3	--	6		$V_{DS} = -15V, I_D = -10nA$
$I_{DSS}$	Drain to Source Saturation Current	-7	--	-70	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	--	--	125		$V_{GS} = 0V, V_{DS} = -0.1V$

#### LSJ175 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

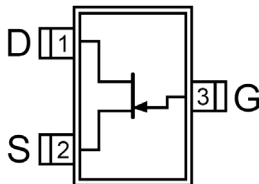
SYMBOL	CHARACTERISTIC	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	10	$V_{GS(L)} = 0V$ $V_{GS(H)} = 10V$ See Switching Circuit
$t_r$	Turn On Rise Time	15	
$t_{d(off)}$	Turn Off Time	10	
$t_f$	Turn Off Fall Time	20	

Note 1 - Absolute maximum ratings are limiting values above which LSJ175 serviceability may be impaired.

#### LSJ175 SWITCHING CIRCUIT PARAMETERS

$V_{DD}$	-6V
$V_{GG}$	12V
$R_L$	750Ω
$R_G$	220Ω
$I_{D(on)}$	-7mA

#### SOT-23 (Top View)

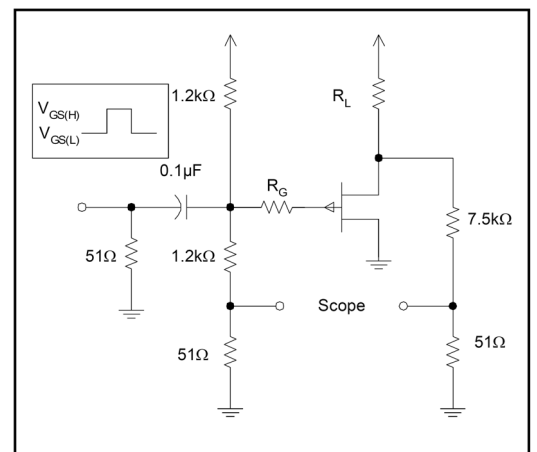


Available Packages:

LSJ175 in SOT-23  
LSJ175 in bare die.

Please contact Micross for full package and die dimensions

#### SWITCHING CIRCUIT



Micross Components Europe



Tel: +44 1603 788967

Email: [chipcomponents@micross.com](mailto:chipcomponents@micross.com)

Web: <http://www.micross.com/distribution>

Information furnished by Linear Integrated Systems and Micross Components is believed to be accurate and reliable. However, no responsibility is assumed for its use; nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Linear Integrated Systems.