

Linear Systems replaces discontinued Siliconix 2N5018

The LS5018 is a single P-Channel JFET switch

This p-channel analog switch is designed to provide low on-resistance and fast switching.

The SOT-23 package provides ease of manufacturing, and a lower cost assembly option.

(See Packaging Information).

LS5018 Benefits:

- Low Insertion Loss
- No offset or error voltage generated by closed switch
- Purely resistive

LS5018 Applications:

- Analog Switches
- Commutators
- Choppers

FEATURES

DIRECT REPLACEMENT FOR SILICONIX 2N5018

ZERO OFFSET VOLTAGE

LOW ON RESISTANCE

$$r_{DS(on)} \leq 75\Omega$$

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

Maximum Temperatures

Storage Temperature

-55°C to +200°C

Operating Junction Temperature

-55°C to +200°C

Maximum Power Dissipation

Continuous Power Dissipation

500mW

MAXIMUM CURRENT

Gate Current (Note 1)

$I_G = -50\text{mA}$

MAXIMUM VOLTAGES

Gate to Drain Voltage

$V_{GDS} = 30\text{V}$

Gate to Source Voltage

$V_{GSS} = 30\text{V}$

LS5018 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	30	--	--	V	$I_G = 1\mu\text{A}, V_{DS} = 0\text{V}$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	--	--	10		$V_{DS} = -15\text{V}, I_D = -1\mu\text{A}$
$V_{DS(on)}$	Drain to Source On Voltage	--	--	-0.5		$V_{GS} = 0\text{V}, I_D = -6\text{mA}$
I_{DSS}	Drain to Source Saturation Current (Note 2)	-10	--	--	mA	$V_{DS} = -20\text{V}, V_{GS} = 0\text{V}$
I_{GSS}	Gate Reverse Current	--	--	2	nA	$V_{GS} = 15\text{V}, V_{DS} = 0\text{V}$
$I_{D(off)}$	Drain Cutoff Current	--	--	-10	μA	$V_{DS} = -15\text{V}, V_{GS} = 12\text{V}$
I_{DGO}	Drain Reverse Current	--	--	-2		$V_{DS} = -15\text{V}, V_{GS} = 7\text{V}$
$r_{DS(on)}$	Drain to Source On Resistance	--	--	75	Ω	$I_D = -1\text{mA}, V_{GS} = 0\text{V}$

LS5018 DYNAMIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
$r_{DS(on)}$	Drain to Source On Resistance	--	--	75	Ω	$I_D = 0\text{A}, V_{GS} = 0\text{V}, f = 1\text{kHz}$
C_{iss}	Input Capacitance	--	--	45	pF	$V_{DS} = -15\text{V}, V_{GS} = 0\text{V}, f = 1\text{MHz}$
C_{rss}	Reverse Transfer Capacitance	--	--	10		$V_{DS} = 0\text{V}, V_{GS} = 12\text{V}, f = 1\text{MHz}$

LS5018 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	15	$V_{GS(L)} = 12\text{V}$ $V_{GS(H)} = 0\text{V}$ See Switching Circuit
t_r	Turn On Rise Time	20	
$t_{d(off)}$	Turn Off Time	15	
t_f	Turn Off Fall Time	50	

Note 1 - Absolute maximum ratings are limiting values above which LS5018 serviceability may be impaired.

Note 2 - Pulse test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 3\%$

LS5018 SWITCHING CIRCUIT PARAMETERS

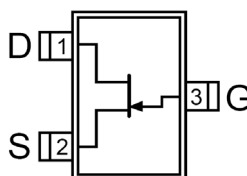
V_{DD}	-6V
V_{GG}	12V
R_L	910 Ω
R_G	220 Ω
$I_{D(on)}$	-6mA

Available Packages:

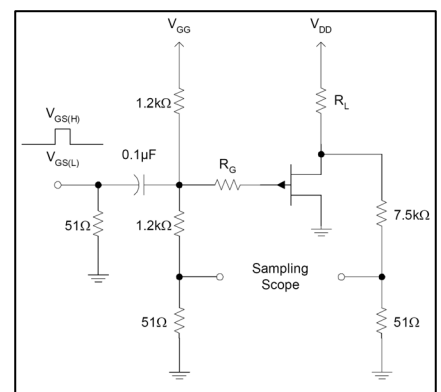
LS5018 in SOT-23
LS5018 in bare die.

Please contact Micross for full package and die dimensions

SOT-23 (Top View)



SWITCHING TEST CIRCUIT



Micross Components Europe



Tel: +44 1603 788967

Email: 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.