

## 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	$r_{DS(on)} \leq 75\Omega$
<b>ABSOLUTE MAXIMUM RATINGS</b> @ 25°C (unless otherwise noted)	
<b>Maximum Temperatures</b>	
Storage Temperature	-55°C to +200°C
Operating Junction Temperature	-55°C to +200°C
<b>Maximum Power Dissipation</b>	
Continuous Power Dissipation	500mW
<b>MAXIMUM CURRENT</b>	
Gate Current (Note 1)	$I_G = -50mA$
<b>MAXIMUM VOLTAGES</b>	
Gate to Drain Voltage	$V_{GDS} = 30V$
Gate to Source Voltage	$V_{GSS} = 30V$

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

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

#### 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	$\Omega$	$I_D = 0A, V_{GS} = 0V, f = 1kHz$
$C_{iss}$	Input Capacitance	--	--	45	pF	$V_{DS} = -15V, V_{GS} = 0V, f = 1MHz$
$C_{rss}$	Reverse Transfer Capacitance	--	--	10		$V_{DS} = 0V, V_{GS} = 12V, f = 1MHz$

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

SYMBOL	CHARACTERISTIC	UNITS	CONDITIONS
$t_{d(on)}$	Turn On Time	15	$V_{GS(L)} = 12V$ $V_{GS(H)} = 0V$ 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:  $PW \leq 300 \mu s$ , Duty Cycle  $\leq 3\%$

#### LS5018 SWITCHING CIRCUIT PARAMETERS

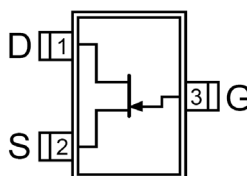
$V_{DD}$	-6V
$V_{GG}$	12V
$R_L$	910 $\Omega$
$R_G$	220 $\Omega$
$I_{D(on)}$	-6mA

Available Packages:

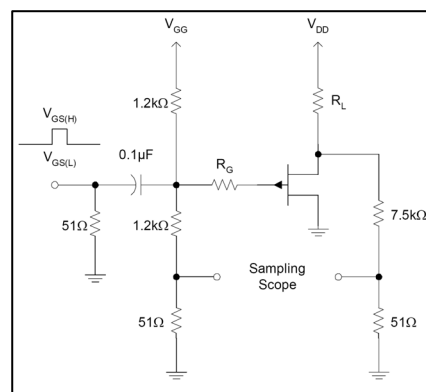
LS5018 in SOT-23  
LS5018 in bare die.

Please contact Micross for full package and die dimensions

SOT-23 (Top View)



#### SWITCHING TEST CIRCUIT



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