

LS5019 P-CHANNEL JFET



Linear Systems replaces discontinued Siliconix 2N5019 The LS5019 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).

LS5019 Benefits:

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

LS5019 Applications:

- **Analog Switches**
- Commutators
- Choppers

FEATURES			
DIRECT REPLACEMENT FOR SILICONIX 2N5019			
ZERO OFFSET VOLTAGE			
LOW ON RESISTANCE $r_{DS(on)} \le 150\Omega$			
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 = -50mA		
MAXIMUM VOLTAGES			
Gate to Drain Voltage	V _{GDS} = 30V		
Gate to Source Voltage	V _{GSS} = 30V		

LS5019 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
BV_{GSS}	Gate to Source Breakdown Voltage	30				$I_{G} = 1\mu A$, $V_{DS} = 0V$
$V_{GS(off)}$	Gate to Source Cutoff Voltage			5	V	$V_{DS} = -15V, I_{D} = -1\mu A$
$V_{DS(on)}$	Drain to Source On Voltage			-0.5		$V_{GS} = 0V$, $I_D = -3mA$
I _{DSS}	Drain to Source Saturation Current (Note 2)	-5			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		$V_{DS} = -15V, V_{GS} = 12V$
	' 4 0 7			-10	μA	$V_{DS} = -15V, V_{GS} = 7V$
I _{DGO}	D <mark>ra</mark> in Re <mark>v</mark> erse Current			-2	nA	$V_{DG} = -15V, I_{S} = 0A$
r _{DS(on)}	Drain to Source On Resistance			1 <mark>50</mark>	Ω	$I_D = -1mA$, $V_{GS} = 0V$

LS5019 DYNAMIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

Į	SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
	r _{DS(on)}	Drain to Source On Resistance	-		150	Ω	$I_D = 0A$, $V_{GS} = 0V$, $f = 1kHz$
ĺ	C_{iss}	Input Capacitance	-		45	pF	$V_{DS} = -15V$, $V_{GS} = 0V$, $f = 1MHz$
Ī	C_{rss}	Reverse Transfer Capacitance			10		$V_{DS} = 0V$, $V_{GS} = 7V$, $f = 1MHz$

LS5019 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC		UNITS	CONDITIONS	
t _{d(on)}	Turn On Time	15	ns		$V_{GS}(L) = 7V$
t _r	Turn On Rise Time	75		$V_{GS}(H) = 0V$	
t _{d(off)}	Turn Off Time	25		115	See Switching Circuit
t _f	Turn Off Fall Time	100			

Note 1 - Absolute maximum ratings are limiting values above which LS5019 serviceability may be impaired.

LS5019 SWITCHING CIRCUIT PARAMETERS

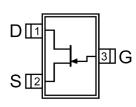
V _{DD}	-6V
V _{GG}	8V
R _L	1.8kΩ
R_G	390Ω
I _{D(on)}	-3mA

Micross Components Europe

Available Packages:

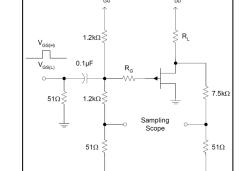
LS5019 in SOT-23 LS5019 in bare die.

Please contact Micross for full package and die dimensions



SOT-23 (Top View)

SWITCHING TEST CIRCUIT





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Note 2 – Pulse test: PW≤ 300 us. Duty Cycle ≤ 3%