

PN5018 P-CHANNEL JFET



Linear Systems replaces discontinued Siliconix PN5018 The PN5018 is a single P-Channel JFET switch

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

The TO-92 provides a low cost option and ease of manufacturing.

(See Packaging Information).

PN5018 Benefits:

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

PN5018 Applications:

- Analog Switches
- Commutators
- Choppers

FEATURES					
DIRECT REPLACEMENT FOR SILICONIX PN5018					
ZERO OFFSET VOLTAGE					
LOW ON RESISTANCE	r _{DS(on)} ≤ 75Ω				
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				

PN5018 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		-	10	V	$V_{DS} = -15V$, $I_{D} = -1\mu A$
$V_{DS(on)}$	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		1	-10		$V_{DS} = -15V, V_{GS} = 12V$
	' 1 0 7		1	-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			75	Ω	$I_{D} = -1 \text{mA}, V_{GS} = 0 \text{V}$

PN5018 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	$I_D = 0A$, $V_{GS} = 0V$, $f = 1kHz$
C _{iss}	Input Capacitance			45	pF	$V_{DS} = -15V$, $V_{GS} = 0V$, $f = 1MHz$
C _{rss}	Reverse Transfer Capacitance			10		$V_{DS} = 0V, V_{GS} = 12V, f = 1MHz$

PN5018 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

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SYMBOL	CHARACTERISTIC		UNITS	CONDITIONS			
t _{d(on)}	Turn On Time	15	ns	V _{GS} (L) = 12V			
t _r	Turn On Rise Time	20		$V_{GS}(H) = 0V$			
t _{d(off)}	Turn Off Time	15	113	See Switching Circuit			
t _f	Turn Off Fall Time	50		-			

Note 1 - Absolute maximum ratings are limiting values above which PN5018 serviceability may be impaired.

PN5018 SWITCHING CIRCUIT PARAMETERS

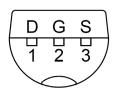
V _{DD}	-6V
V_{GG}	12V
R_L	910Ω
R_{G}	220Ω
I _{D(on)}	-6mA

Available Packages:

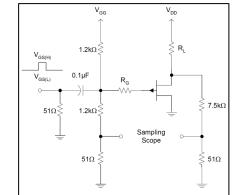
PN5018 in TO-92 PN5018 in bare die.

Please contact Micross for full package and die dimensions

TO-92 (Bottom View)



SWITCHING TEST CIRCUIT



Micross Components Europe



Tel: +44 1603 788967

Email: chipcomponents@micross.com
Web: http://www.micross.com/distribution

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Note 2 – Pulse test: PW≤ 300 µs, Duty Cycle ≤ 3%