

## J210 N-CHANNEL JFET



# Linear Systems replaces discontinued Siliconix J210

The J210 is a n-channel JFET General Purpose amplifier with low noise and low leakage.

The SOT-23 package is well suited for cost sensitive applications and mass production.

(See Packaging Information).

#### J210 Benefits:

- High gain
- Low Leakage
- Low Noise

#### J210 Applications:

- General Purpose Amplifiers
- UHV / VHF Amplifiers
- Mixers
- Oscillators

FEATURES					
DIRECT REPLACEMENT FOR SILICONIX J210					
HIGH GAIN	g <sub>fs</sub> = 7000μmho MIN				
HIGH INPUT IMPEDANCE	I <sub>GSS</sub> = 100pA max				
LOW INPUT CAPACITANCE	C <sub>iss</sub> = 5pF				
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	360mW				
Derating over temperature	3.27 mW/°C				
MAXIMUM CURRENT					
Gate Current (Note 1)	10mA				
MAXIMUM VOLTAGES					
Gate to Drain Voltage or Gate to Source Voltage	-25V				

## J210 ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
$BV_{GSS}$	Gate to Source Breakdown Voltage	-25			V	$V_{DS} = 0V$ , $I_{G} = -1\mu A$
$V_{GS(off)}$	Gate to Source Cutoff Voltage	-1		-3		$V_{DS} = 15V, I_{D} = 1nA$
I <sub>DSS</sub>	Drain to Source Saturation Current (Note 2)	2		15	mA	$V_{DS} = 15V, V_{GS} = 0V$
I <sub>GSS</sub>	Gate Reverse Current (Note 3)	1		-100	pА	$V_{DS} = 0V, V_{GS} = -15V$
I <sub>G</sub>	Gate Operating Current (Note 3)	-	-10		pА	$V_{DS} = 10V, I_{D} = 1mA$
r <sub>DS(on)</sub>	Drain to Source On Resistance			50	Ω	$I_G = 1mA$ , $V_{DS} = 0V$

### J210 DYNAMIC ELECTRICAL CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC	MIN	TYP.	MAX	UNITS	CONDITIONS
g <sub>fs</sub>	Forward Transconductance	4000		12 <mark>00</mark> 0	μ <mark>mh</mark> o	$V_{DS} = 15V$ , $V_{GS} = 0V$ , $f = 1kHz$
<b>g</b> os	Output Conductance			<b>15</b> 0		
C <sub>iss</sub>	Input Capacitance		4	)	pF	$V_{DS} = 15V, V_{GS} = 0V, f = 1MHz$
C <sub>rss</sub>	Reverse Transfer Capacitance		1			
e <sub>n</sub>	Equivalent Noise Voltage		10		nV/√Hz	$V_{DS} = 15V$ , $V_{GS} = 0V$ , $f = 1kHz$

#### J210 SWITCHING CHARACTERISTICS @ 25°C (unless otherwise noted)

SYMBOL	CHARACTERISTIC		UNITS	CONDITIONS	
t <sub>d(on)</sub>	Turn On Time	2		V <sub>DD</sub> = 10V	
t <sub>r</sub>	Turn On Rise Time	2	nc	V <sub>GS</sub> (H) = 0V	
t <sub>d(off)</sub>	Turn Off Time	6	ns	115	See Switching Circuit
t <sub>f</sub>	Turn Off Fall Time	15		· ·	

Note 1 - Absolute maximum ratings are limiting values above which J210 serviceability may be impaired.

Note 2 - Pulse test duration = 2ms

Note 3 – Approximately doubles for every 10°C increase in T<sub>A</sub>

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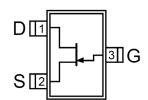
Tel: +44 1603 788967

Email: <a href="mailto:chipcomponents@micross.com">chipcomponents@micross.com</a> Web: <a href="mailto:http://www.micross.com/distribution">http://www.micross.com/distribution</a> Available Packages:

J210 in SOT-23 J210 in bare die.

Please contact Micross for full package and die dimensions

SOT-23 (Top View)



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