

# N-Channel JFET



## J210 – J212 / SSTJ210 – SSTJ212

### FEATURES

- Low Noise
- Low Leakage
- High Power Gain

### APPLICATIONS

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

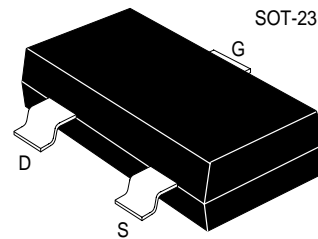
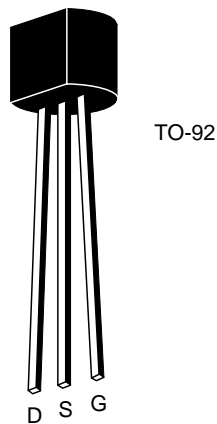
### DESCRIPTION

The J210 Series is an N-Channel JFET single device encapsulated in a TO-92 plastic package well suited for automated assembly. The device features low leakage, typically under 2 pA, low noise, under 10 nano volts per square hertz at 10 hertz and high gain. This series is excellent for mixer, oscillators and amplifier applications.

### ORDERING INFORMATION

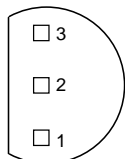
Part	Package	Temperature Range
J210-11	Plastic TO-92 Package	-55°C to +135°C
SSTJ210-11	Plastic SOT-23	-55°C to +135°C

### PIN CONFIGURATION



CJ1

- 1 DRAIN
- 2 SOURCE
- 3 GATE



BOTTOM VIEW

### PRODUCT MARKING (SOT-23)

SSTJ210	Z10
SSTJ211	Z11
SSTJ212	Z12

### ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)

Parameter/Test Condition	Symbol	Limit	Unit
Gate-Drain Voltage	V <sub>GD</sub>	-25	V
Gate-Source Voltage	V <sub>GS</sub>	-25	V
Gate Current	I <sub>G</sub>	10	mA
Power Dissipation	P <sub>D</sub>	360	mW
Power Derating		3.27	mW/°C
Operating Junction Temperature	T <sub>J</sub>	-55 to 135	°C
Storage Temperature	T <sub>stg</sub>	-55 to 150	°C
Lead Temperature (1/16" from case for 10 seconds)	T <sub>L</sub>	300	°C

### ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

SYMBOL	CHARACTERISTICS	TYP <sup>1</sup>	210		211		212		UNIT	TEST CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
<b>STATIC</b>										
V <sub>(BR)GSS</sub>	Gate-Source Breakdown Voltage	-35	-25		-25		-25		V	I <sub>G</sub> = -1μA, V <sub>DS</sub> = 0V
V <sub>GS(OFF)</sub>	Gate-Source Cut off Voltage		-1	-3	-2.5	-4.5	-4	-6		V <sub>DS</sub> = 15V, I <sub>D</sub> = 1nA
I <sub>DSS</sub>	Saturation Drain Current <sup>2</sup>		2	15	7	20	15	40	mA	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V
I <sub>GSS</sub>	Gate Reverse Current	-1		-100		-100		-100	pA	V <sub>GS</sub> = -15V, V <sub>DS</sub> = 0V
		-0.5							nA	T <sub>A</sub> = 125°C
I <sub>G</sub>	Gate Operating Current	-1							pA	V <sub>DG</sub> = 10V, I <sub>D</sub> = 1mA
I <sub>D(OFF)</sub>	Drain Cutoff Current	1							pA	V <sub>DS</sub> = 10V, V <sub>GS</sub> = -8V
V <sub>GS(F)</sub>	Gate-Source Forward Voltage	0.7							V	I <sub>G</sub> = 1mA, V <sub>DS</sub> = 0V
<b>DYNAMIC</b>										
g <sub>fs</sub>	Common-Source Forward Transconductance		4	12	6	12	7	12	mS	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V f = 1kHz
g <sub>os</sub>	Common-Source Output Conductance			150		200		200	μS	
C <sub>iss</sub>	Common-Source Input Capacitance	4							pF	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V f = 1MHz
C <sub>rss</sub>	Common-Source Reverse Transfer Capacitance	1.5								
$\bar{e}_n$	Equivalent Input Noise Voltage	5							nV/√Hz	V <sub>DS</sub> = 15V, V <sub>GS</sub> = 0V f = 1kHz

- NOTES: 1. For design aid only, not subject to production testing.  
 2. Pulse test; PW = 300μs, duty cycle ≤ 3%.