N-Channel JFET

calogic
CORPORATION

J210 – J212 / SSTJ210 – SSTJ212

FEATURES

- **Low Noise**
- **Low Leakage**
- **High Power Gain**

APPLICATIONS

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

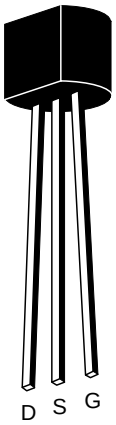
DESCRIPTION

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.

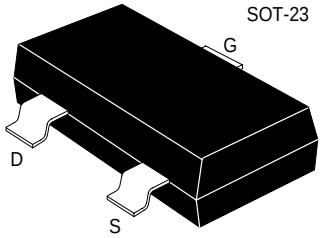
ORDERING INFORMATION

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

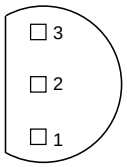


TO-92



CJ1

1 DRAIN
2 SOURCE
3 GATE



BOTTOM VIEW

PRODUCT MARKING (SOT-23)	
SSTJ210	Z10
SSTJ211	Z11
SSTJ212	Z12

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C unless otherwise noted)

Parameter/Test Condition	Symbol	Limit	Unit
Gate-Drain Voltage	V_{GD}	-25	V
Gate-Source Voltage	V_{GS}	-25	V
Gate Current	I_G	10	mA
Power Dissipation	P_D	360	mW
Power Derating		3.27	mW/ °C
Operating Junction Temperature	T_J	-55 to 135	°C
Storage Temperature	T_{stg}	-55 to 150	°C
Lead Temperature (1/16" from case for 10 seconds)	T_L	300	°C

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

SYMBOL	CHARACTERISTCS	TYP[1]	210		211		212		UNIT	TEST CONDITIONS
			MIN	MAX	MIN	MAX	MIN	MAX		
STATIC										
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	-35	-25		-25		-25		V	I_G = -1µA, V_{DS} = 0V
$V_{GS(OFF)}$	Gate-Source Cut off Voltage		-1	-3	-2.5	-4.5	-4	-6		V_{DS} = 15V, I_D = 1nA
I_{DSS}	Saturation Drain Current [2]		2	15	7	20	15	40	mA	V_{DS} = 15V, V_{GS} = 0V
I_{GSS}	Gate Reverse Current	-1		-100		-100		-100	pA	V_{GS} = -15V, V_{DS} = 0V
		-0.5							nA	T_A = 125°C
I_G	Gate Operating Current	-1							pA	V_{DG} = 10V, I_D = 1mA
$I_{D(OFF)}$	Drain Cutoff Current	1							pA	V_{DS} = 10V, V_{GS} = -8V
$V_{GS(F)}$	Gate-Source Forward Voltage	0.7							V	I_G = 1mA, V_{DS} = 0V
DYNAMIC										
g_{fs}	Common-Source Forward Transconductance		4	12	6	12	7	12	mS	V_{DS} = 15V, V_{GS} = 0V f = 1kHz
g_{os}	Common-Source Output Conductance			150		200		200	µS	
C_{iss}	Common-Source Input Capacitance	4							pF	V_{DS} = 15V, V_{GS} = 0V f = 1MHz
C_{rss}	Common-Source Reverse Transfer Capacitance	1.5								
$\overline{e}_n$	Equivalent Input Noise Voltage	5							nV/$\sqrt{Hz}$	V_{DS} = 15V, V_{GS} = 0V f = 1kHz

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