

J210 SERIES N-Channel JFETs



The J210 Series of n-channel JFETs provides good general purpose amplifiers for a wide range of test and instrumentation applications. This series features low-leakage ($I_{GSS} < 100 \text{ pA}$), high gain ($g_{fs} > 7 \text{ mS}$ for J212), and low noise. Additionally, its low cost TO-92 package ensures value as well as compatibility with automated assembly techniques. (See Section 7.)

PART NUMBER	$V_{GS(OFF)}$ MAX (V)	$V_{(BR)GSS}$ MIN (V)	g_{fs} MIN (mS)	I_{DSS} MAX (mA)
J210	-3	-25	4	15
J211	-4.5	-25	6	20
J212	-6	-25	7	40

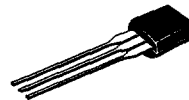
For additional design information please see performance curves NZF.

SIMILAR PRODUCTS

- Duals, See 2N5911 Series
- Chips, See NZF Series Die

TO-92 (TO-226AA)

BOTTOM VIEW



- 1 DRAIN
- 2 SOURCE
- 3 GATE

ABSOLUTE MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

PARAMETERS/TEST CONDITIONS	SYMBOL	LIMITS	UNITS
Gate-Drain Voltage	V_{GD}	-25	V
Gate-Source Voltage	V_{GS}	-25	
Gate Current	I_G	10	mA
Power Dissipation	P_D	360	mW
Power Derating		3.27	mW/ $^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to 135	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to 150	
Lead Temperature ($1/16"$ from case for 10 sec.)	T_L	300	

SPECIFICATIONS ^a			LIMITS							
PARAMETER	SYMBOL	TEST CONDITIONS	TYP ^b	J210		J211		J212		UNIT
				MIN	MAX	MIN	MAX	MIN	MAX	
STATIC										
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1 \mu A, V_{DS} = 0 V$	-35	-25		-25		-25		V
Gate-Source Cutoff Voltage	$V_{GS(OFF)}$	$V_{DS} = 15 V, I_D = 1 nA$		-1	-3	-2.5	-4.5	-4	-6	
Saturation Drain Current ^c	I_{DSS}	$V_{DS} = 15 V, V_{GS} = 0 V$		2	15	7	20	15	40	mA
Gate Reverse Current	I_{GSS}	$V_{GS} = -15 V, V_{DS} = 0 V$ $T_A = 125^\circ C$	-1							pA
			-0.5							nA
Gate Operating Current	I_G	$V_{DG} = 10 V, I_D = 1 mA$	-1							pA
Drain Cutoff Current	$I_{D(OFF)}$	$V_{DS} = 10 V, V_{GS} = -8 V$	1							
Gate-Source Forward Voltage	$V_{GS(F)}$	$I_G = 1 mA, V_{DS} = 0 V$	0.7							V
DYNAMIC										
Common-Source Forward Transconductance	g_{fs}	$V_{DS} = 15 V, V_{GS} = 0 V$ $f = 1 kHz$		4	12	6	12	7	12	mS
Common-Source Output Conductance	g_{os}				150		200		200	μS
Common-Source Input Capacitance	C_{iss}	$V_{DS} = 15 V, V_{GS} = 0 V$ $f = 1 MHz$	4							pF
Common-Source Reverse Transfer Capacitance	C_{rss}		1.5							
Equivalent Input Noise Voltage	\bar{e}_n	$V_{DS} = 15 V, V_{GS} = 0 V$ $f = 1 kHz$	5							$\frac{nV}{\sqrt{Hz}}$

NOTES:

- a. $T_A = 25^\circ C$ unless otherwise noted.
- b. For design aid only, not subject to production testing.
- c. Pulse test; $PW = 300 \mu S$, duty cycle $\leq 3\%$.