

N-Channel JFETs

Product Summary

Part Number	$V_{GS(off)}$ (V)	$V_{(BR)GSS}$ Min (V)	g_{fs} Min (mS)	I_{DSS} Min (mA)
J210	-1 to -3	-25	4	2
J211	-2.5 to -4.5	-25	6	7
J212	-4 to -6	-25	7	15

J211, For applications information see AN104, page 21.

Features

- Excellent High Frequency Gain: J211/212, Gps 12 dB (typ) @ 400 MHz
- Very Low Noise: 3 dB (typ) @ 400 MHz
- Very Low Distortion
- High ac/dc Switch Off-Isolation
- High Gain: $A_V = 35$ @ 100 μ A

Benefits

- Wideband High Gain
- Very High System Sensitivity
- High Quality of Amplification
- High-Speed Switching Capability
- High-Quality Low-Level Signal Amplification

Applications

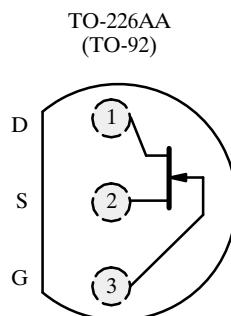
- High-Frequency Amplifier/Mixer
- Oscillator
- Sample-and-Hold
- Very Low Capacitance Switches

Description

The J210/211/212 n-channel JFETs are general-purpose and high-frequency amplifiers for a wide range of applications. These devices feature low leakage ($I_{GSS} < 100$ pA).

The TO-226AA (TO-92) plastic package, provides low cost and is available in tape-and-reel for automated assembly (see Packaging Information).

For similar dual products, see the 2N5911/5912 and U440/441 data sheets.



Top View

Absolute Maximum Ratings

Gate-Drain, Gate-Source Voltage	-25 V
Gate Current	10 mA
Lead Temperature ($1/16$ " from case for 10 sec.)	300°C
Storage Temperature	-55 to 150°C

Operating Junction Temperature	-55 to 150°C
Power Dissipation ^a	350 mW

Notes
a. Derate 2.8 mW/°C above 25°C

Specifications^a

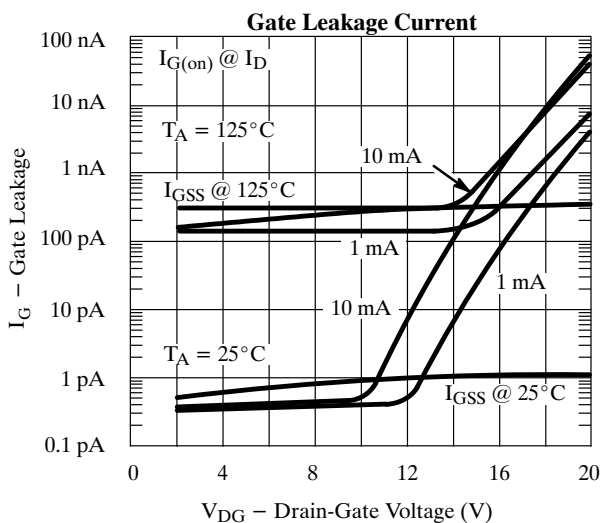
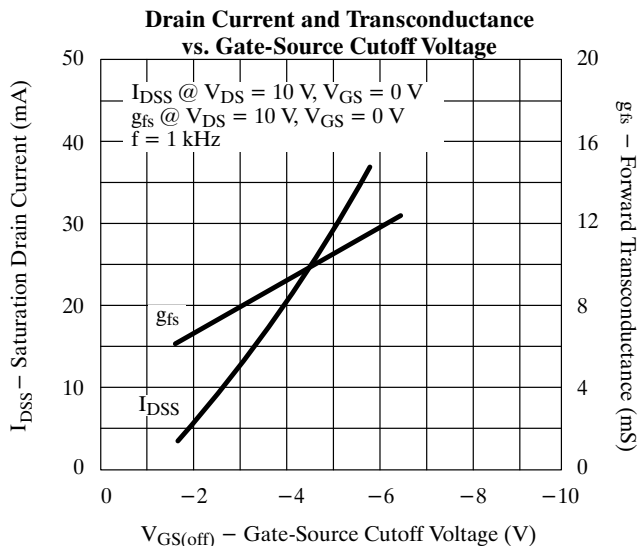
Parameter	Symbol	Test Conditions	Typ ^b	Limits						Unit	
				J210		J211		J212			
				Min	Max	Min	Max	Min	Max		
Static											
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1 \mu A, V_{DS} = 0 V$	-35	-25		-25		-25			V
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 15 V, I_D = 1 nA$		-1	-3	-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}	$V_{GS} = -15 V, V_{DS} = 0 V$		-1							pA
			$T_A = 125^\circ C$	-0.5							
Gate Operating Current ^b	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 ^c	g_{fs}	$V_{DS} = 15 V, V_{GS} = 0 V$ $f = 1 kHz$		4	12	6	12	7	12		mS
						150		200		200	
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								nV/\sqrt{Hz}

Notes

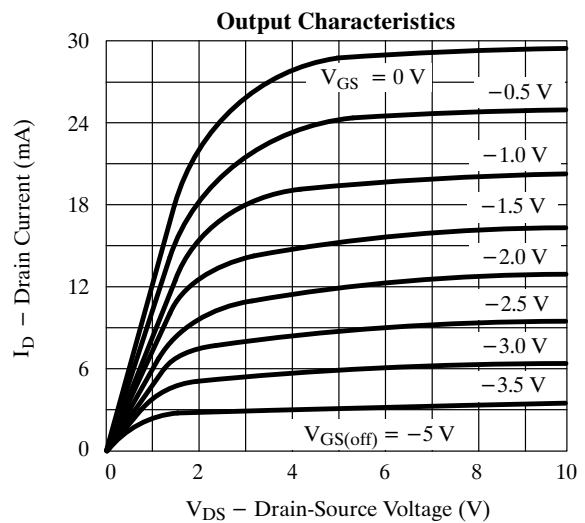
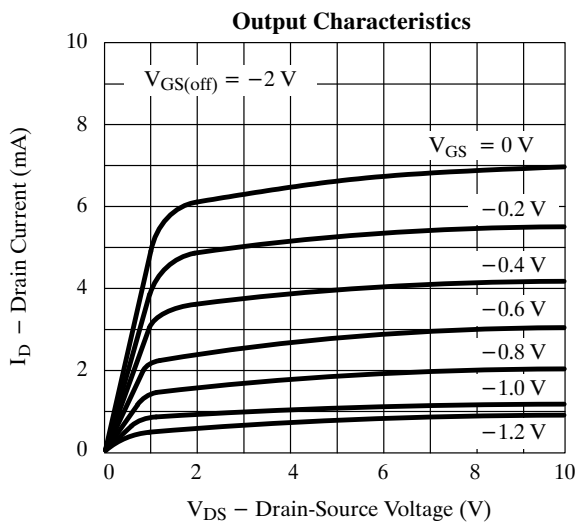
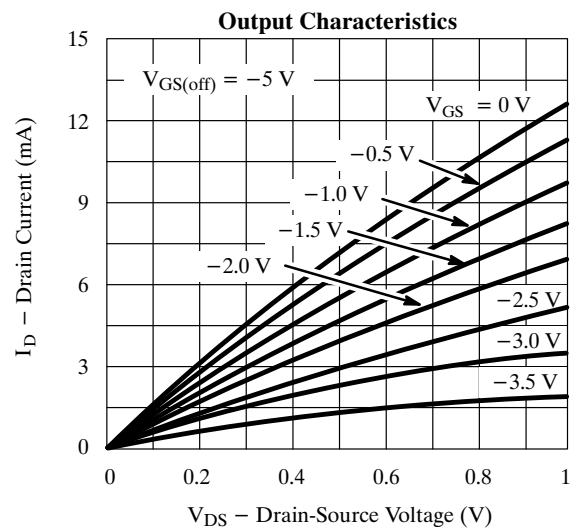
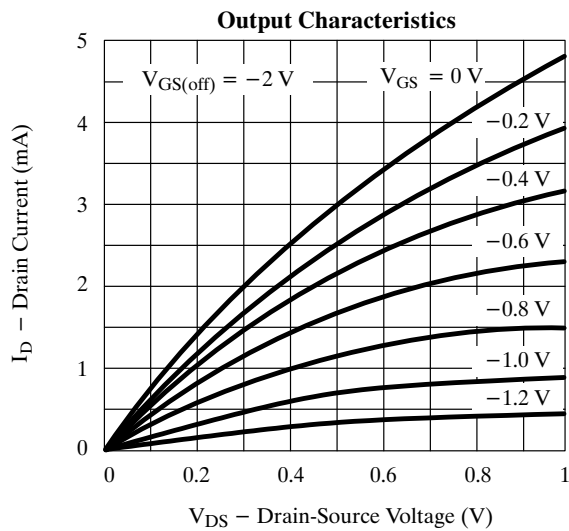
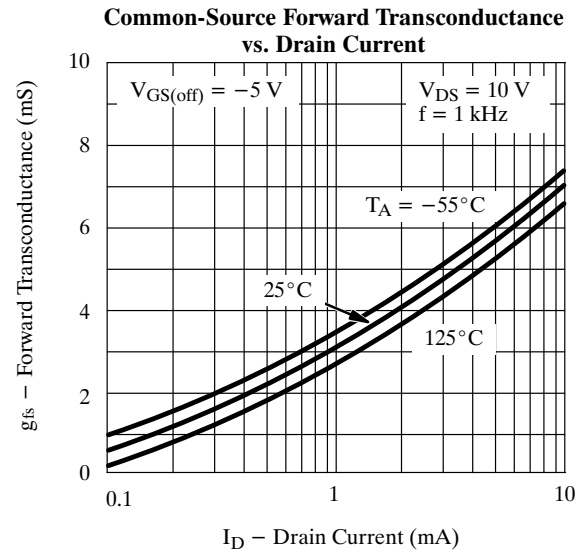
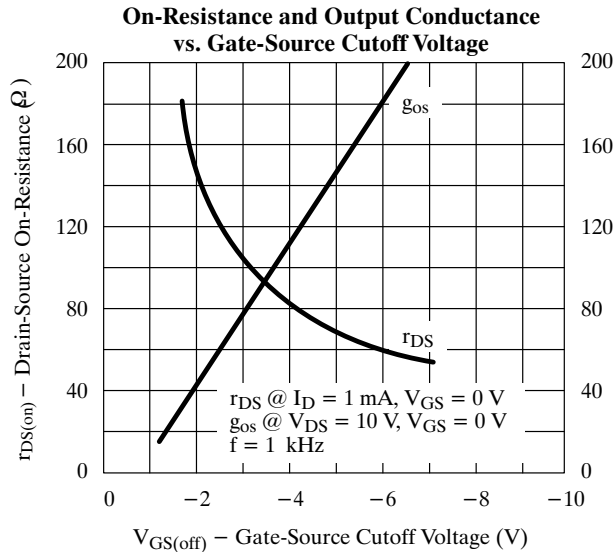
- a. $T_A = 25^\circ C$ unless otherwise noted.
- b. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- c. Pulse test: $PW \leq 300 \mu s$ duty cycle $\leq 3\%$.

NZF

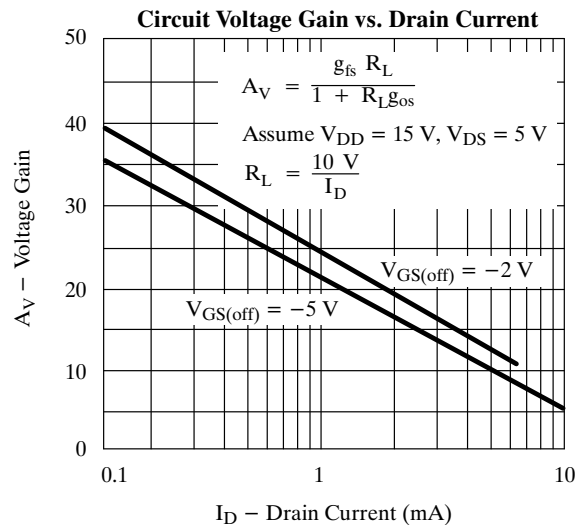
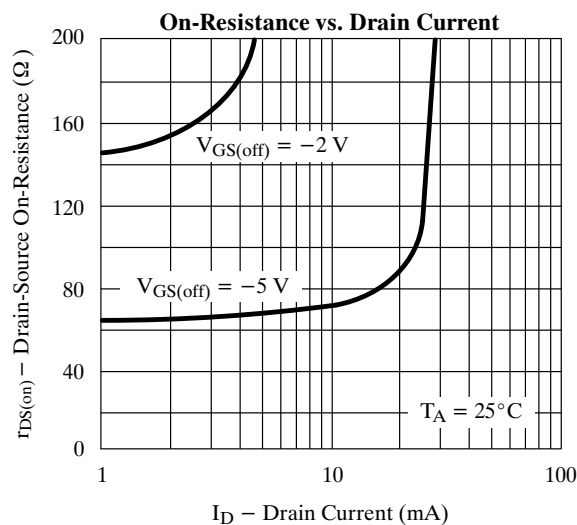
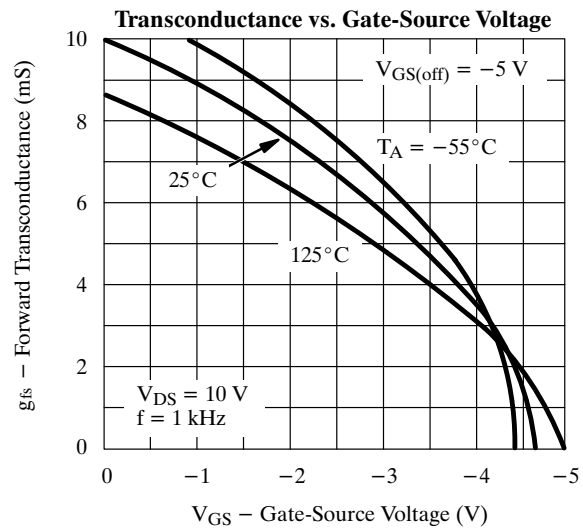
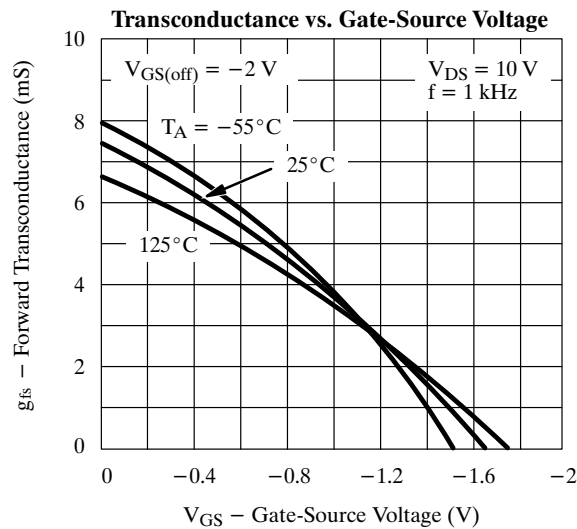
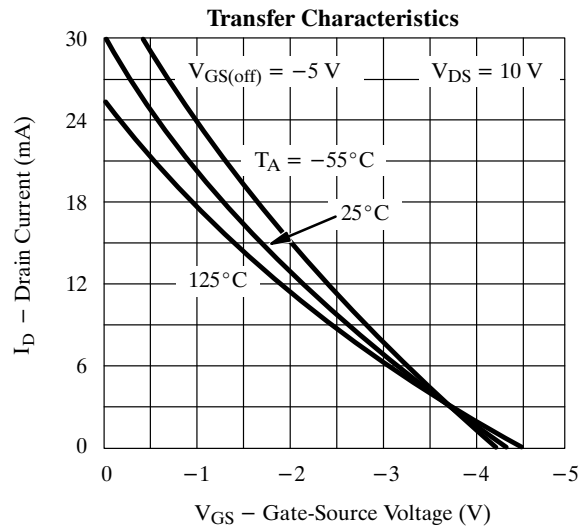
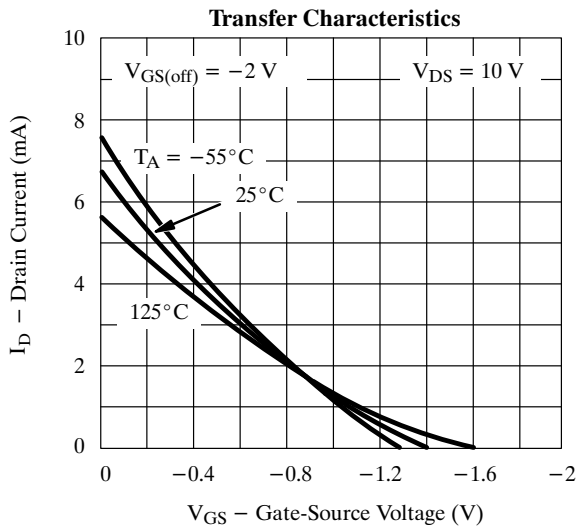
Typical Characteristics



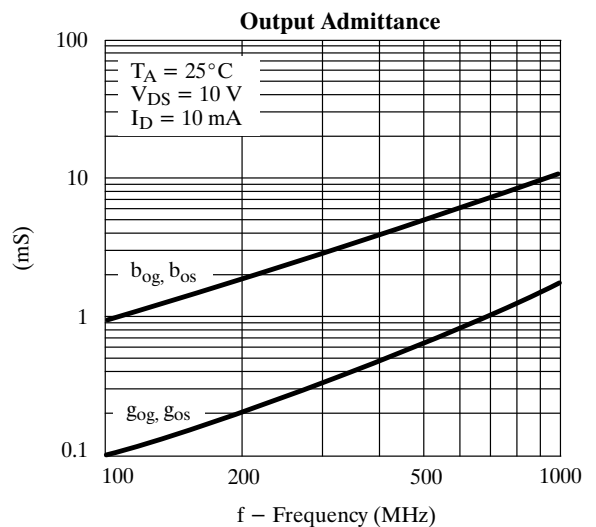
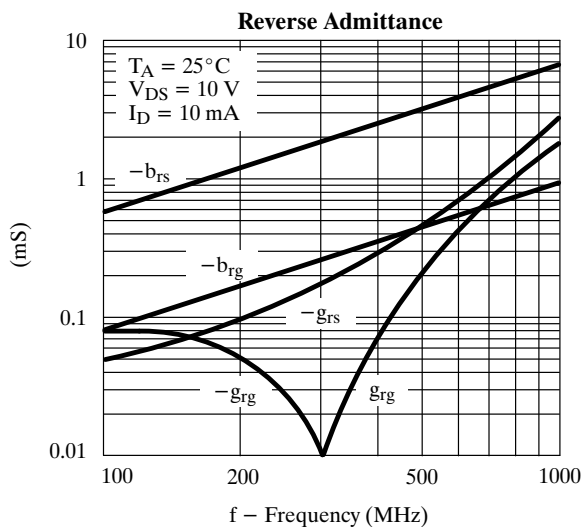
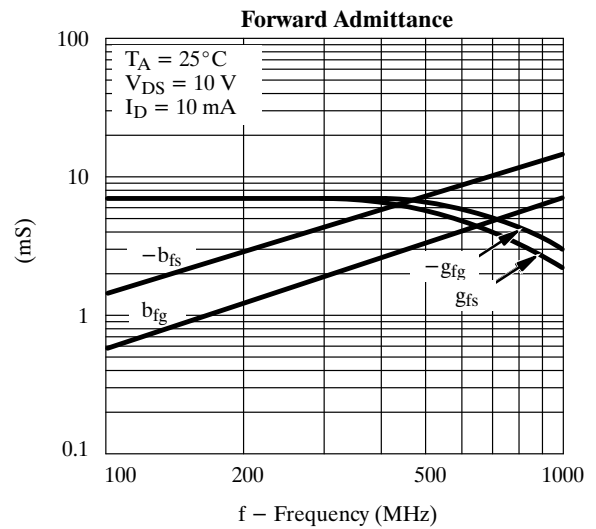
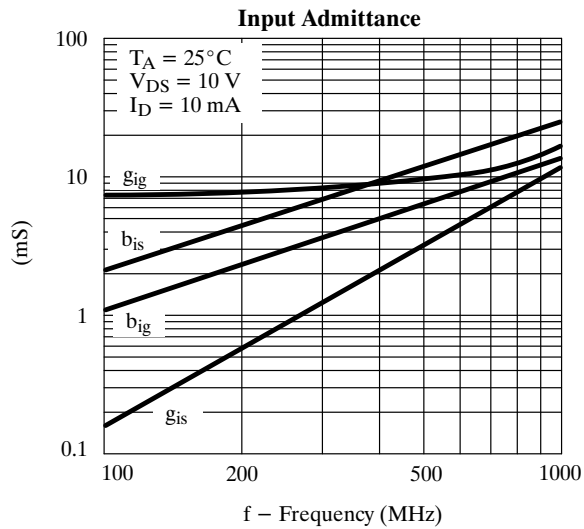
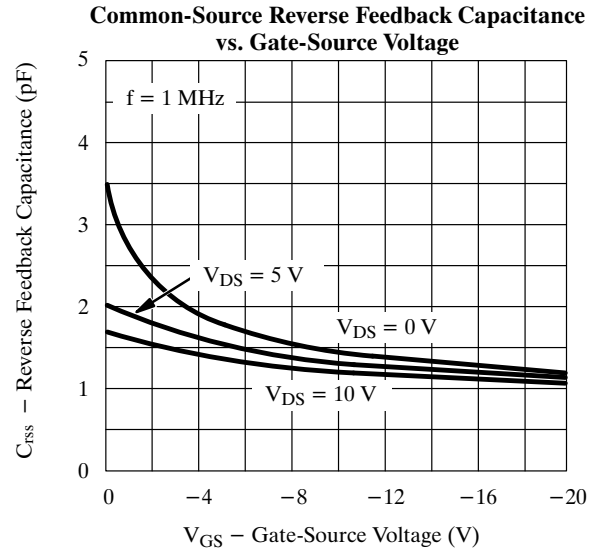
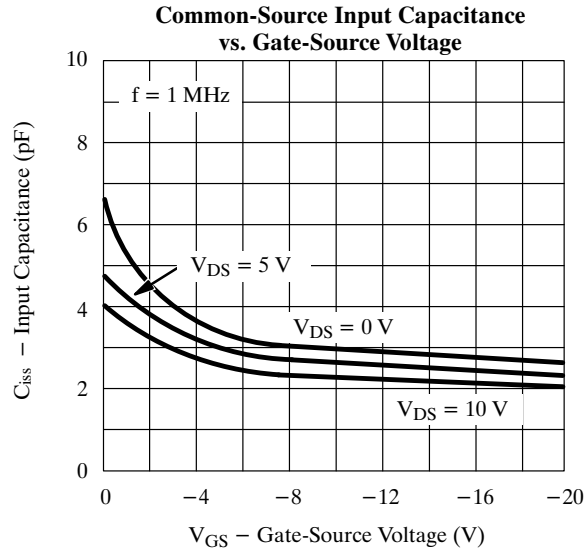
Typical Characteristics (Cont'd)



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Typical Characteristics (Cont'd)



Typical Characteristics (Cont'd)

