N-Channel JFETs

J210 **SSTJ211**
J211 **SSTJ212**
J212

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
J/SSTJ211	–2.5 to –4.5	–25	6	7
J/SSTJ212	–4 to –6	–25	7	15

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 μA

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

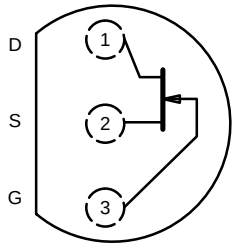
DESCRIPTION

The J/SSTJ210 Series 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 while the TO-236 (SOT-23) package provides surface-mount capability. The J/SSTJ210 Series 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.

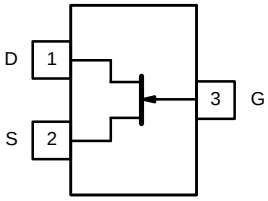
TO-226AA
(TO-92)



J210
J211
J212

Top View

TO-236
(SOT-23)



SSTJ211 (Z1)*
SSTJ212 (Z2)*

*Marking Code for TO-236

Top View

For applications information see AN104.

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 (T_A = 25°C UNLESS OTHERWISE NOTED)

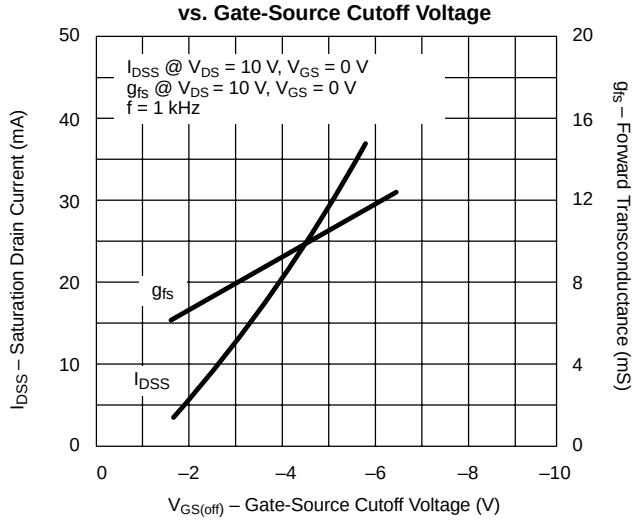
Parameter	Symbol	Test Conditions	Typ[a]	Limits J210 Min	Limits J210 Max	Limits J/SSTJ211 Min	Limits J/SSTJ211 Max	Limits J/SSTJ212 Min	Limits J/SSTJ212 Max	Unit
Static										
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	I_G = –1 µA , V_{DS} = 0 V	–35	–25		–25		–25		V
Gate-Source Cutoff Voltage	$V_{GS(off)}$	V_{DS} = 15 V, I_D = 1 nA		–1	–3	–2.5	–4.5	–4	–6	
Saturation Drain Current[b]	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		–100		–100		–100	pA
		T_A = 125°C	–0.5							nA
Gate Operating Current[a]	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[b]	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. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
b. Pulse test: PW ≤300 µs duty cycle ≤3%.

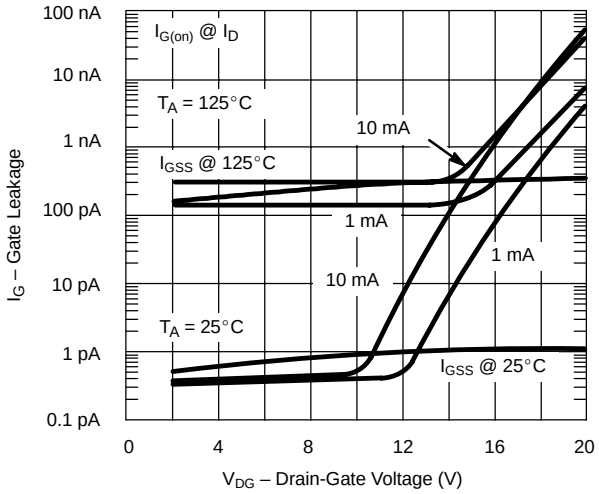
NZF

TYPICAL CHARACTERISTICS (T_A = 25°C UNLESS OTHERWISE NOTED)

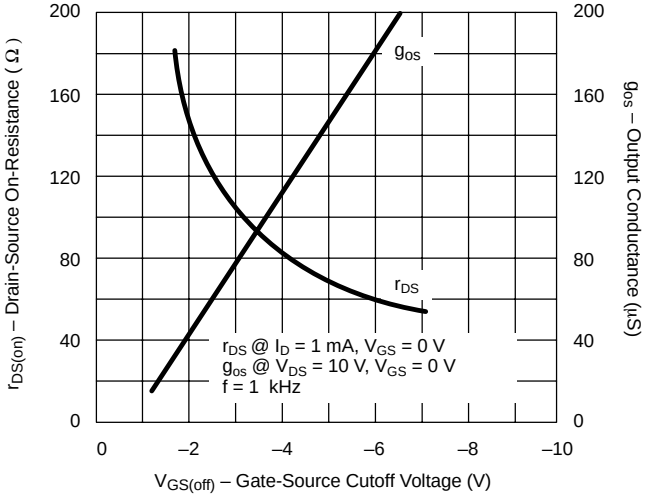
Drain Current and Transconductance vs. Gate-Source Cutoff Voltage



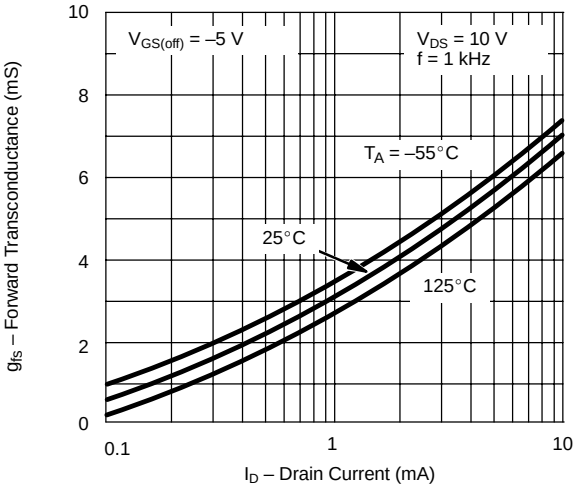
Gate Leakage Current



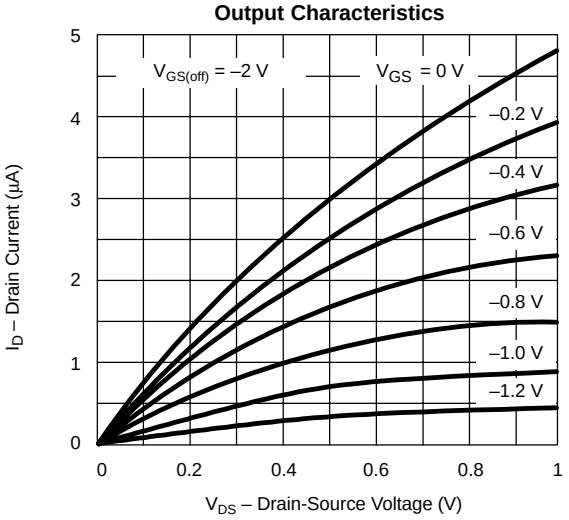
On-Resistance and Output Conductance vs. Gate-Source Cutoff Voltage



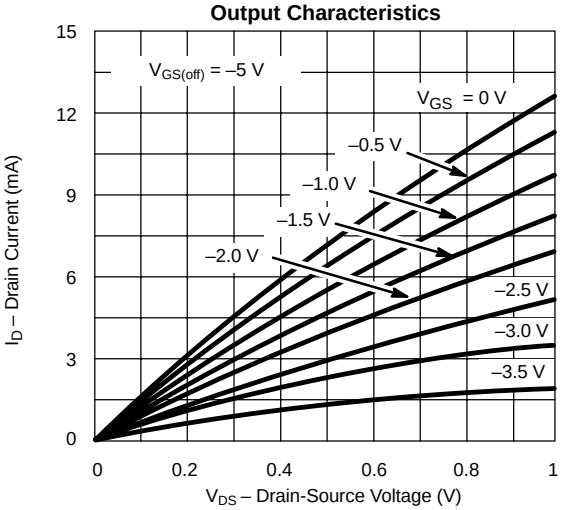
Common-Source Forward Transconductance vs. Drain Current



Output Characteristics

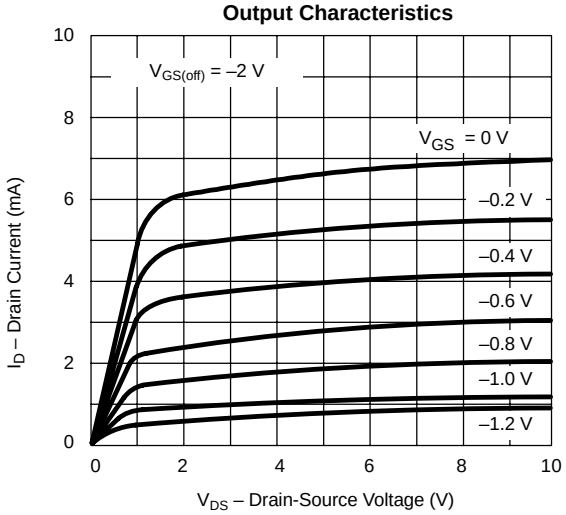


Output Characteristics

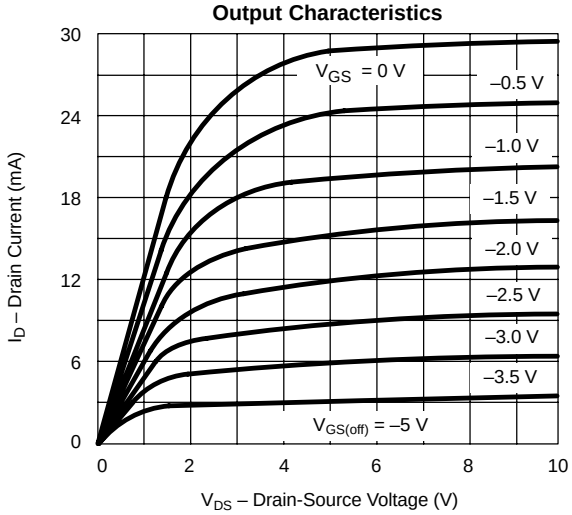


TYPICAL CHARACTERISTICS (T_A = 25°C UNLESS OTHERWISE NOTED)

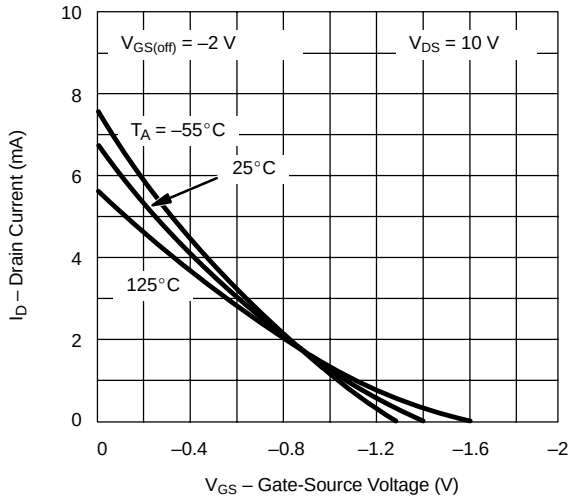
Output Characteristics



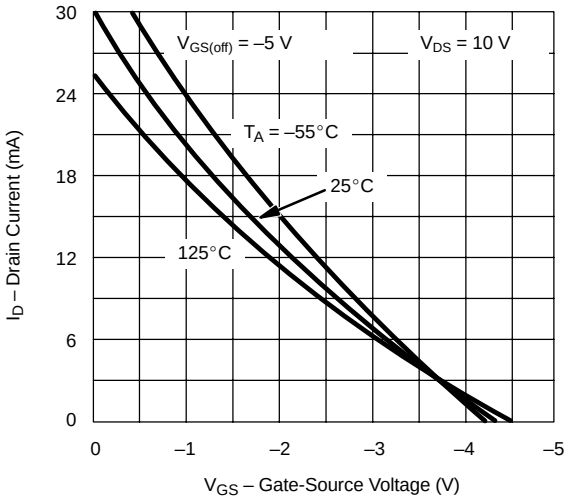
Output Characteristics



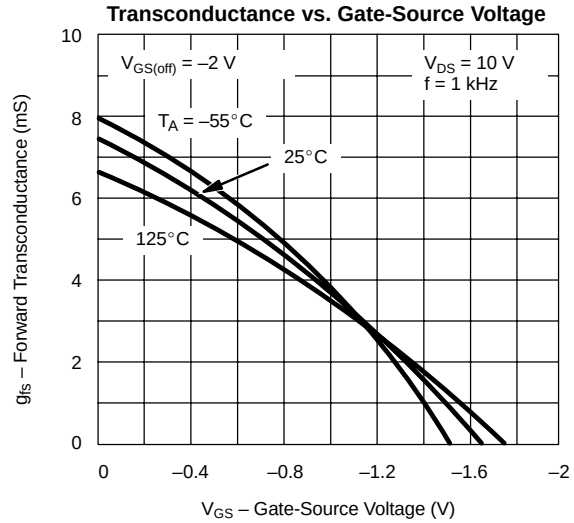
Transfer Characteristics



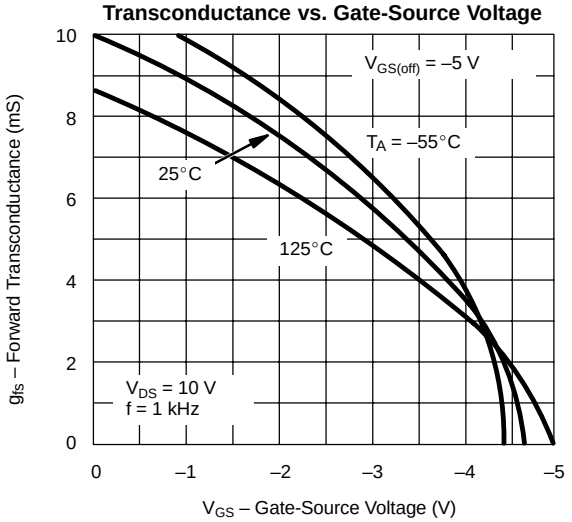
Transfer Characteristics



Transconductance vs. Gate-Source Voltage

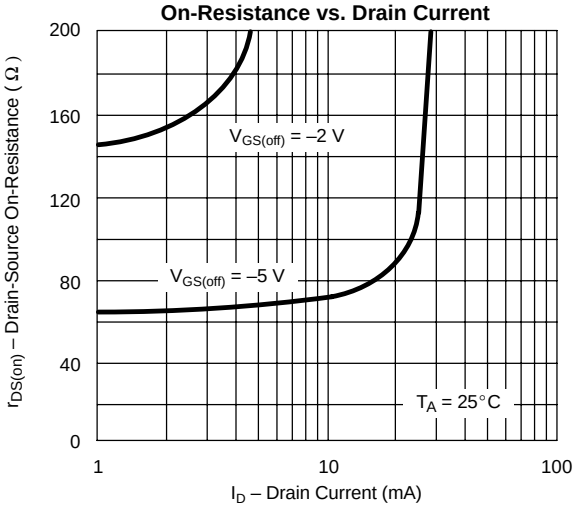


Transconductance vs. Gate-Source Voltage

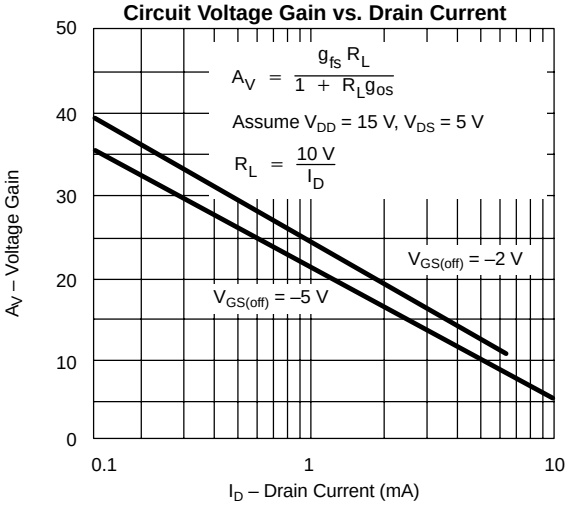


TYPICAL CHARACTERISTICS (T_A = 25°C UNLESS OTHERWISE NOTED)

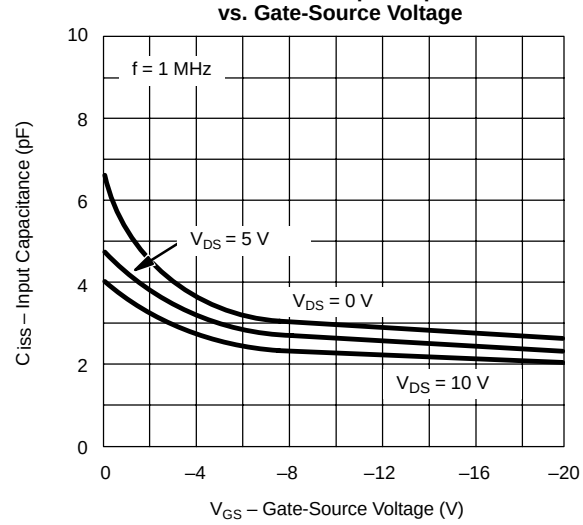
On-Resistance vs. Drain Current



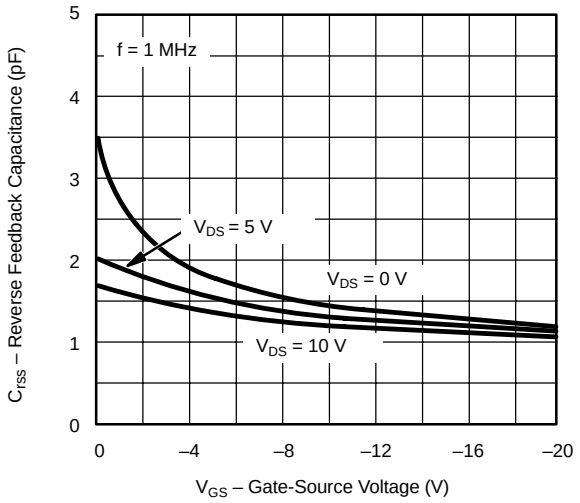
Circuit Voltage Gain vs. Drain Current



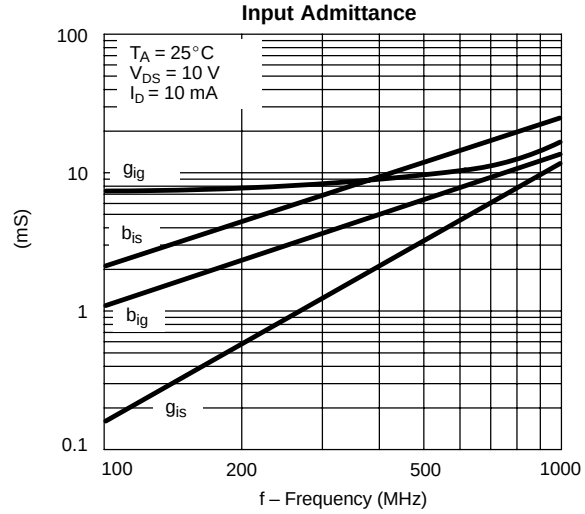
Common-Source Input Capacitance vs. Gate-Source Voltage



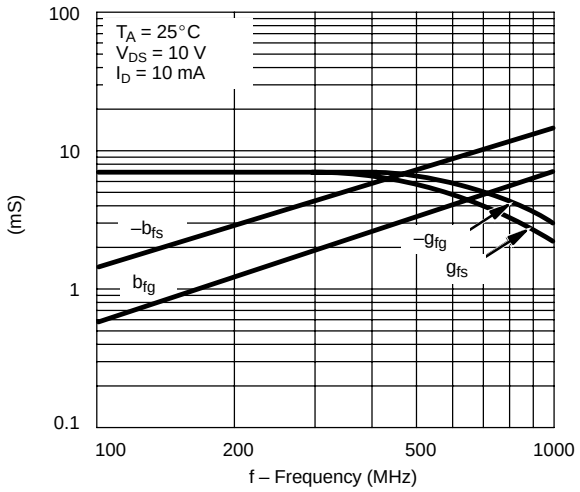
Common-Source Reverse Feedback Capacitance vs. Gate-Source Voltage



Input Admittance

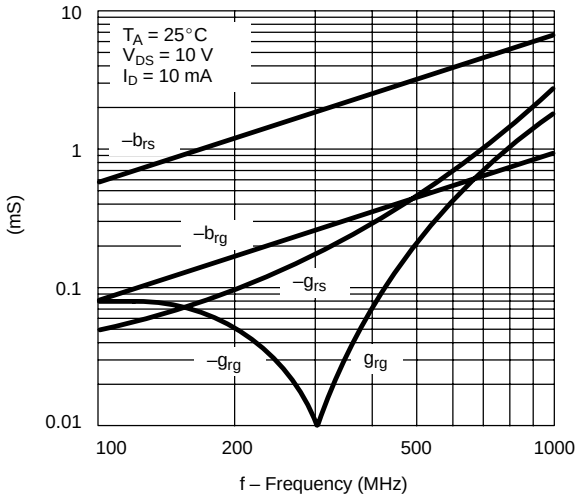


Forward Admittance

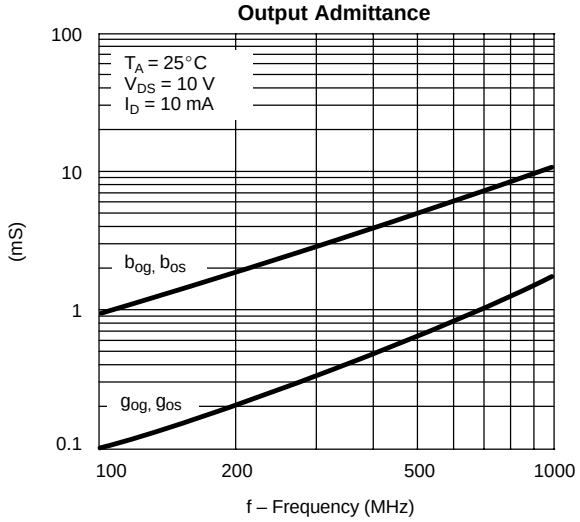


TYPICAL CHARACTERISTICS (T_A = 25°C UNLESS OTHERWISE NOTED)

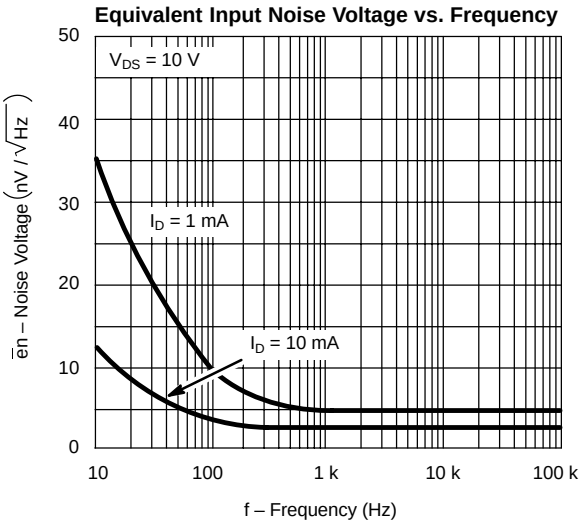
Reverse Admittance



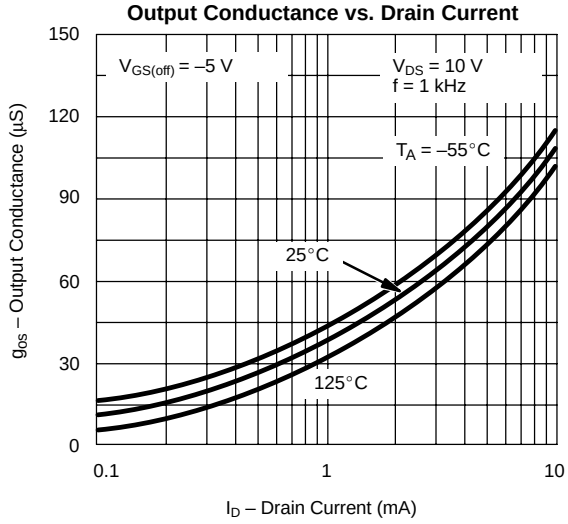
Output Admittance



Equivalent Input Noise Voltage vs. Frequency



Output Conductance vs. Drain Current



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