



N-Channel JFETs

J201 SST201
J202 SST202
J204 SST204

PRODUCT SUMMARY				
Part Number	$V_{GS(off)}$ (V)	$V_{(BR)GSS}$ Min (V)	g_{fs} Min (mS)	I_{DSS} Min (mA)
J/SST201	-0.3 to -1.5	-40	0.5	0.2
J/SST202	-0.8 to -4	-40	1	0.9
J/SST204	-0.3 to -2	-25	0.5	0.2

FEATURES

- Low Cutoff Voltage: J201 <1.5 V
- High Input Impedance
- Very Low Noise
- High Gain: $A_v = 80 @ 20 \mu A$

BENEFITS

- Full Performance from Low Voltage Power Supply: Down to 1.5 V
- Low Signal Loss/System Error
- High System Sensitivity
- High Quality Low-Level Signal Amplification

APPLICATIONS

- High-Gain, Low-Noise Amplifiers
- Low-Current, Low-Voltage Battery-Powered Amplifiers
- Infrared Detector Amplifiers
- Ultra High Input Impedance Pre-Amplifiers

DESCRIPTION

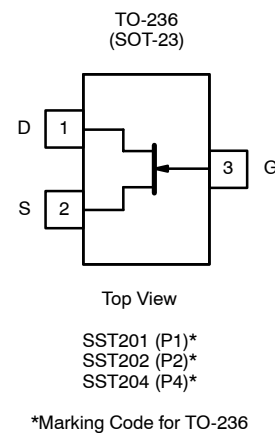
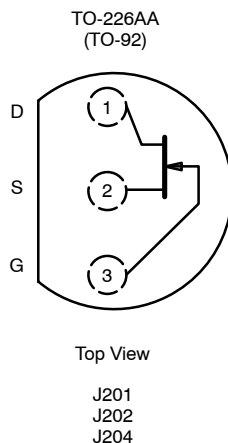
The J/SST201 series features low leakage, very low noise, and low cutoff voltage for use with low-level power supplies. The J/SST201 is excellent for battery powered equipment and low current amplifiers.

The J series, TO-226 (TO-92) plastic package, provides low cost, while the SST series, TO-236 (SOT-23) package, provides surface-mount capability. Both the J and SST series

are available in tape-and-reel for automated assembly (see Packaging Information).

For similar products in TO-206AA (TO-18) packaging, see the 2N4338/4339/4340/4341 data sheet.

For applications information see AN102 and AN106.





ABSOLUTE MAXIMUM RATINGS

Gate-Drain, Gate-Source Voltage -40 V
 Gate Current 50 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						Unit
				J/SST201		J/SST202		J/SST204 ^c		
				Min	Max	Min	Max	Min	Max	
Static										
Gate-Source Breakdown Voltage	V _{(BR)GSS}	I _G = -1 μA, V _{DS} = 0 V		-40		-40		-25		V
Gate-Source Cutoff Voltage	V _{GS(off)}	V _{DS} = 15 V, I _D = 10 nA		-0.3	-1.5	-0.8	-4	-0.3	-2	
Saturation Drain Current ^b	I _{DSS}	V _{DS} = 15 V, V _{GS} = 0 V		0.2	1	0.9	4.5	0.2	3	mA
Gate Reverse Current	I _{GSS}	V _{GS} = -20 V, V _{DS} = 0 V T _A = 125°C	-2		-100		-100		-100	pA
			-1						nA	
Gate Operating Current	I _G	V _{DG} = 10 V, I _D = 0.1 mA	-2							pA
Drain Cutoff Current	I _{D(off)}	V _{DS} = 15 V, V _{GS} = -5 V	2							
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		0.5		1		0.5		mS
Common-Source Input Capacitance	C _{iss}	V _{DS} = 15 V, V _{GS} = 0 V f = 1 MHz	4.5							pF
Common-Source Reverse Transfer Capacitance	C _{rss}		1.3							
Equivalent Input Noise Voltage	e _n	V _{DS} = 10 V, V _{GS} = 0 V f = 1 kHz	6							nV/ √Hz

Notes

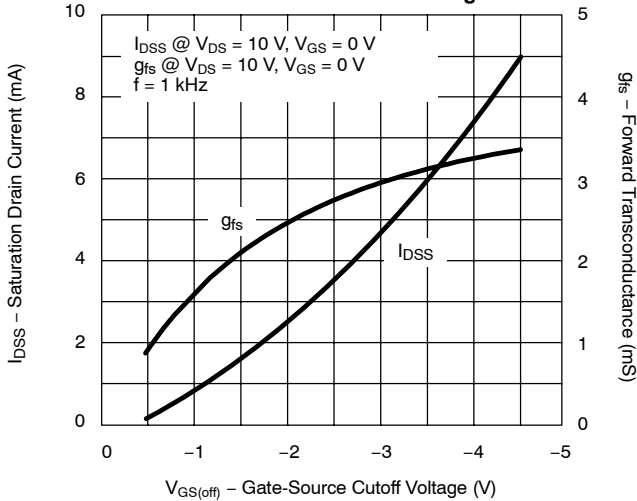
- a. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- b. Pulse test: PW ≤ 300 μs duty cycle ≤ 3%.
- c. See 2N/SST5484 Series for J204 and SST204 typical characteristic curves.

NPA, NH

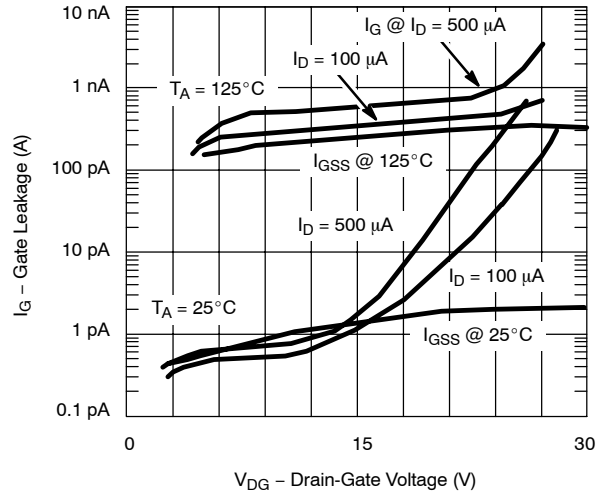


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

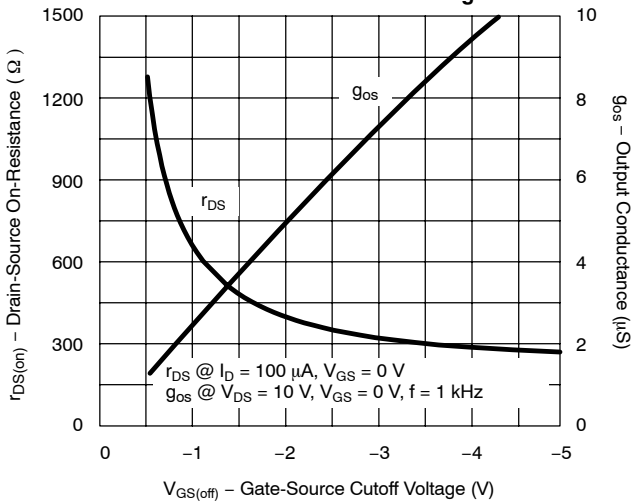
Drain Current and Transconductance vs. Gate-Source Cutoff Voltage



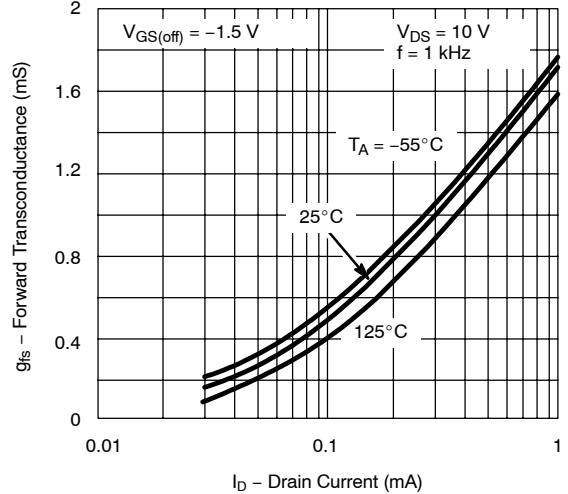
Gate Leakage Current



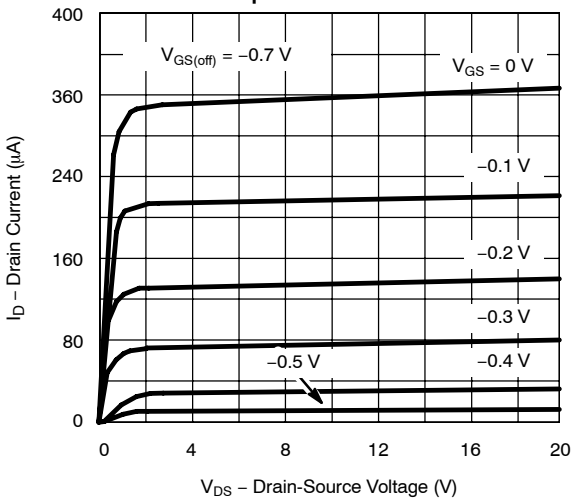
On-Resistance and Output Conductance vs. Gate-Source Cutoff Voltage



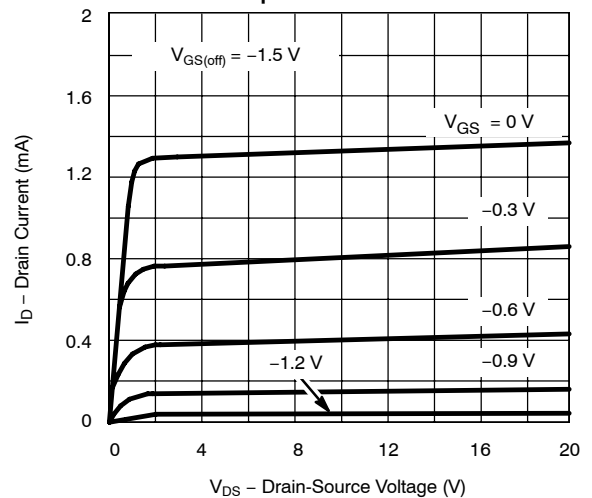
Common-Source Forward Transconductance vs. Drain Current



Output Characteristics

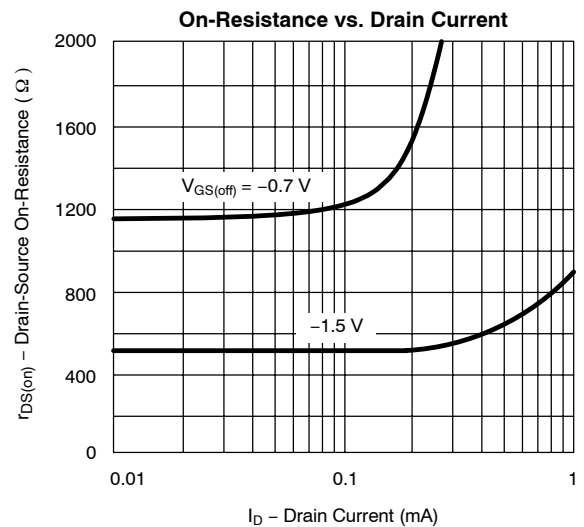
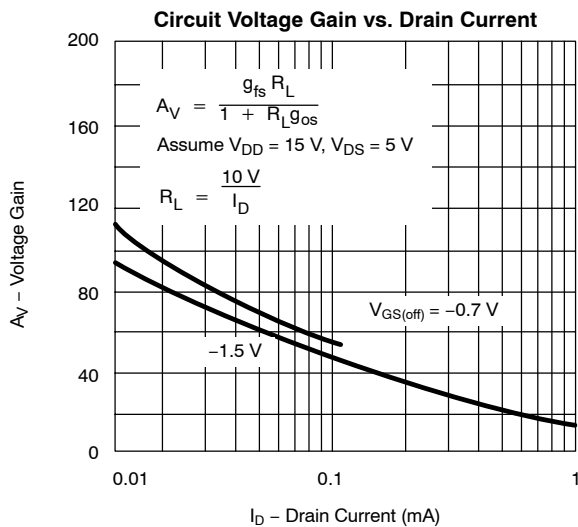
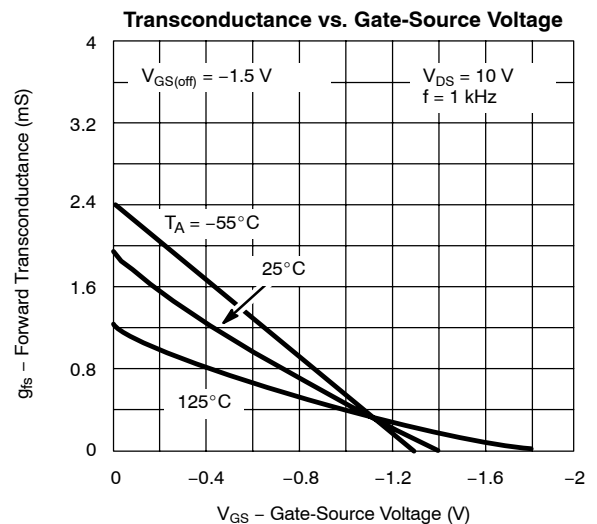
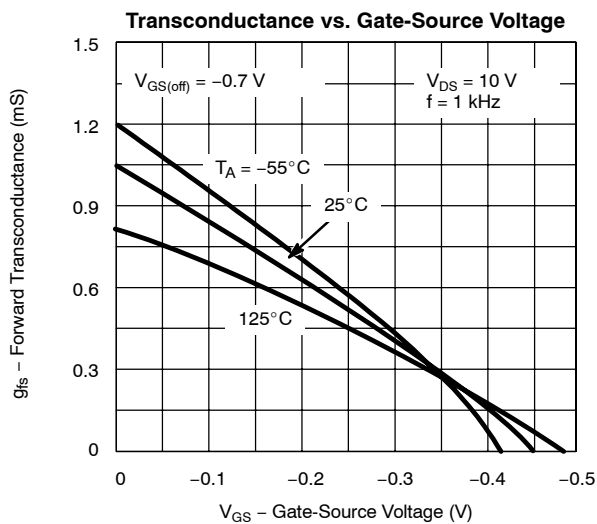
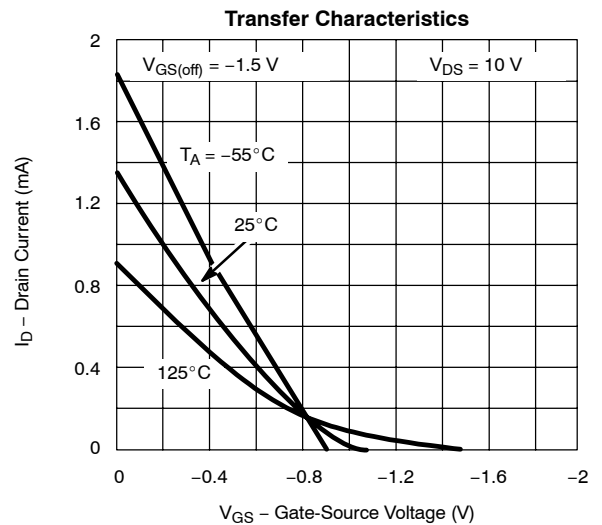
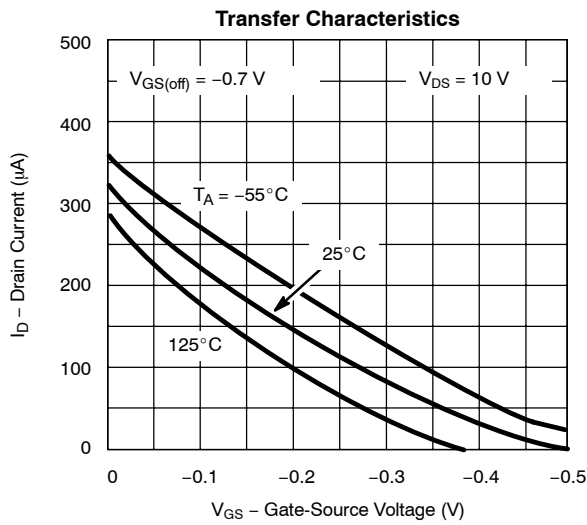


Output Characteristics





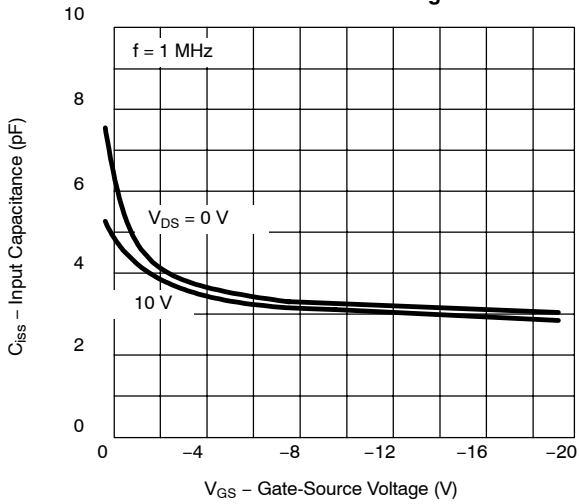
TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)



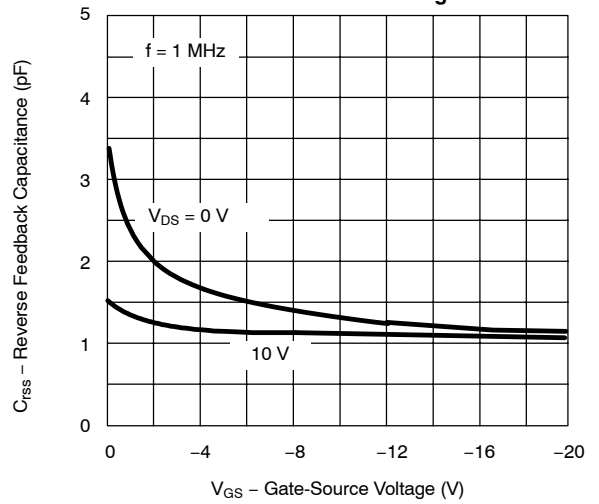


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

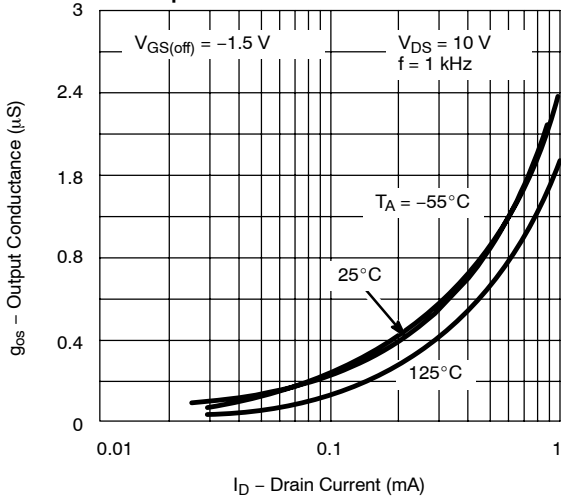
Common-Source Input Capacitance vs. Gate-Source Voltage



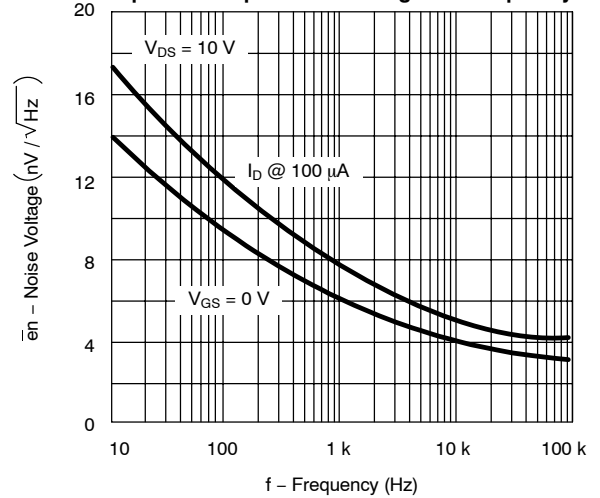
Common-Source Reverse Feedback Capacitance vs. Gate-Source Voltage



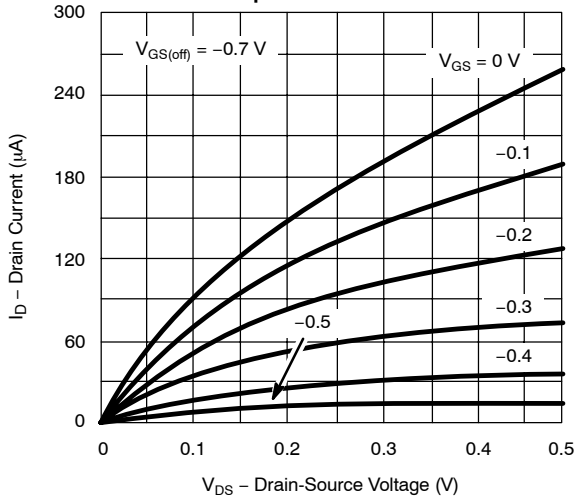
Output Conductance vs. Drain Current



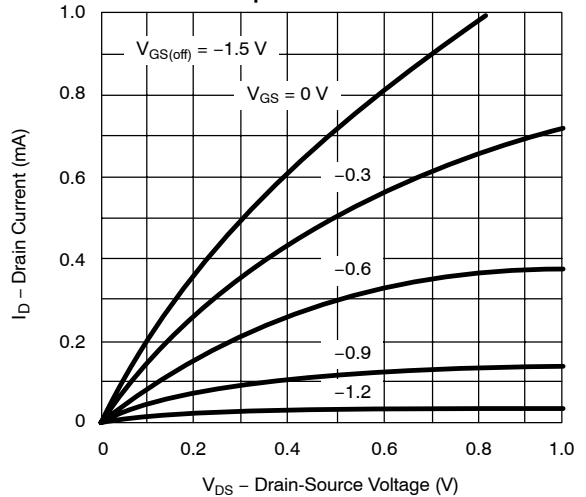
Equivalent Input Noise Voltage vs. Frequency



Output Characteristics



Output Characteristics





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