



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 μ 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

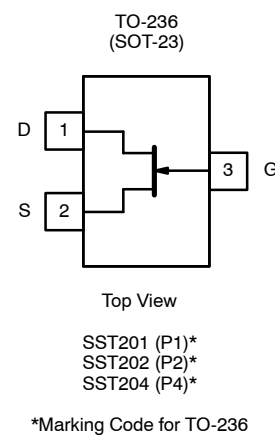
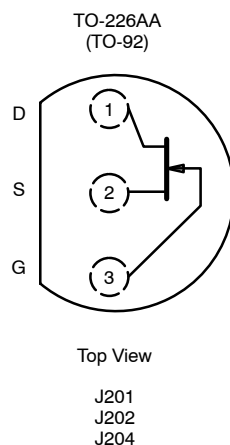
The J/SST201 series features low leakage, very low noise, and low cutoff voltage for use with low-level power supplies. The J/SST201 is excellent for battery powered equipment and low current amplifiers.

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 ($T_A = 25^\circ\text{C}$ 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	−2		−100		−100		−100	pA
		T _A = 125°C	−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

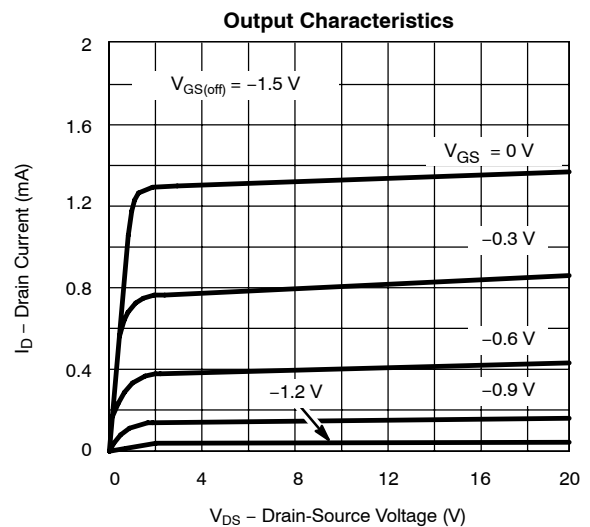
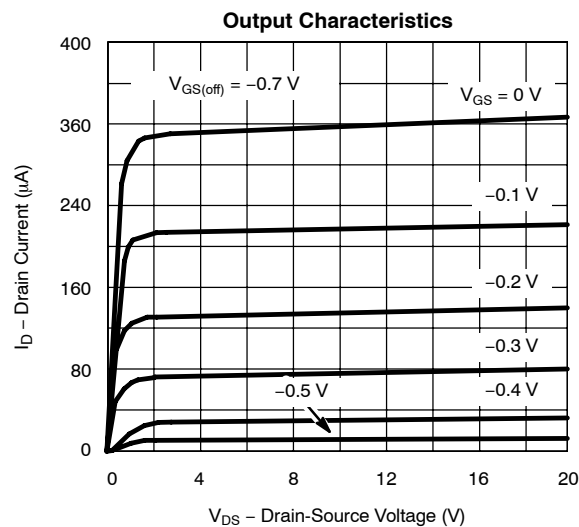
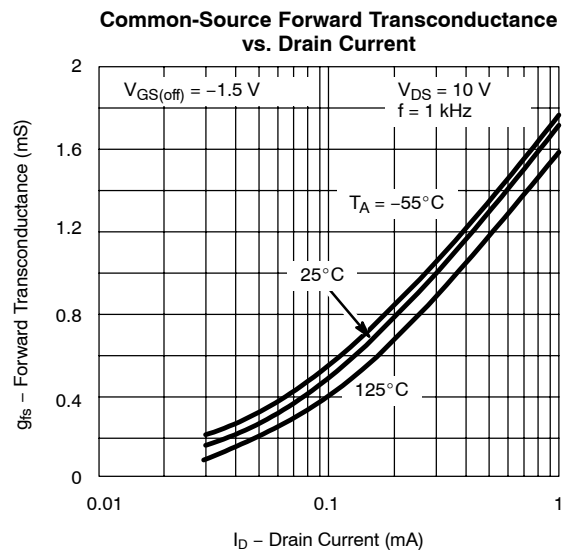
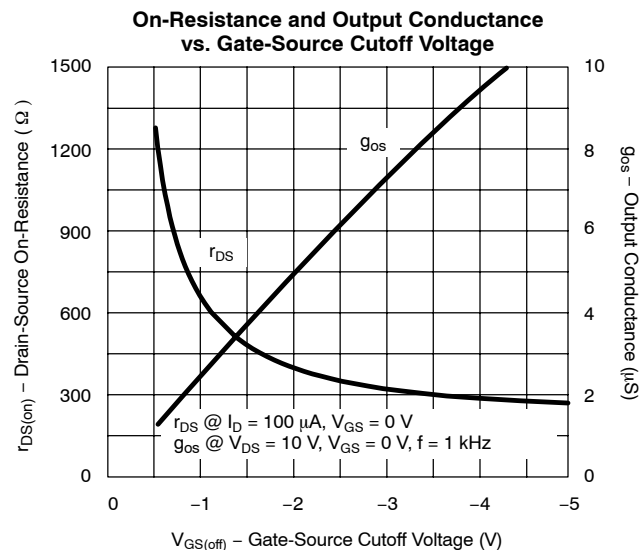
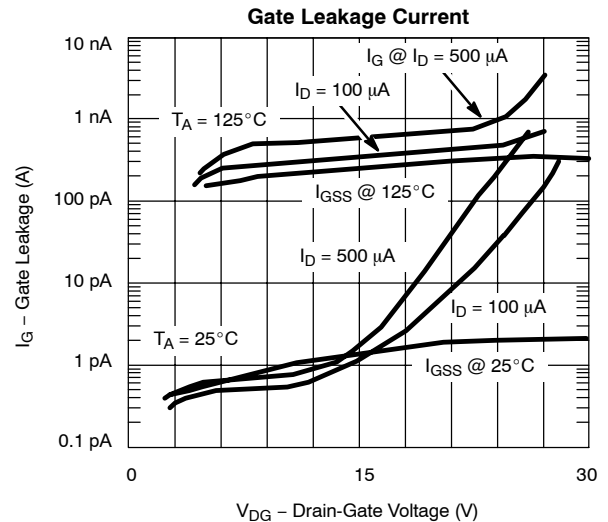
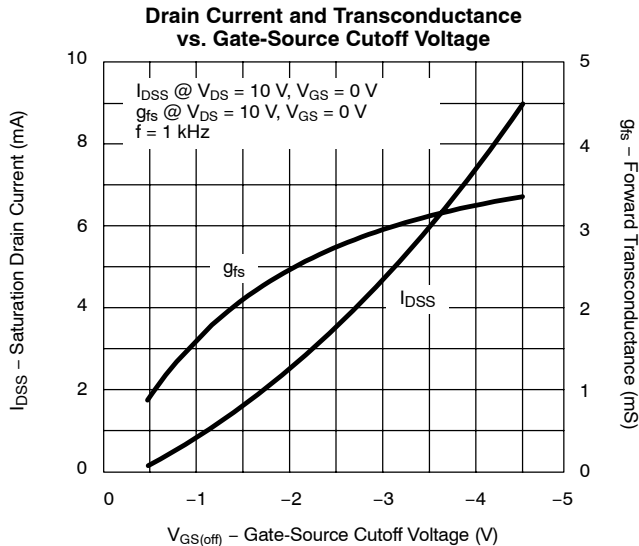
Notes

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

NPA, NH

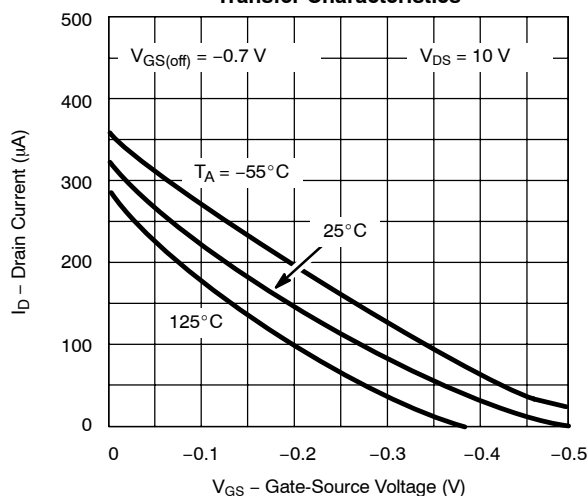


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

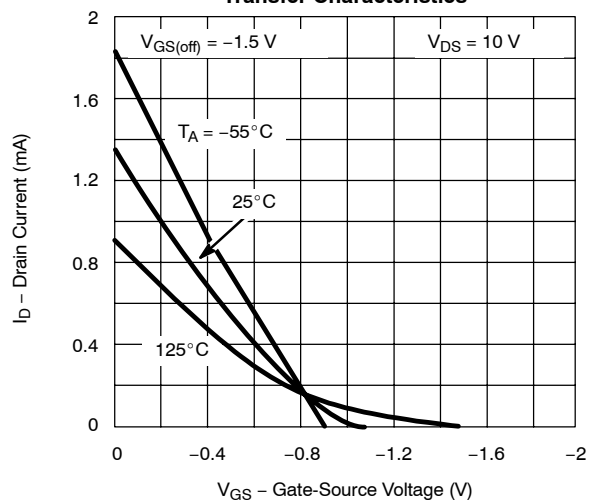


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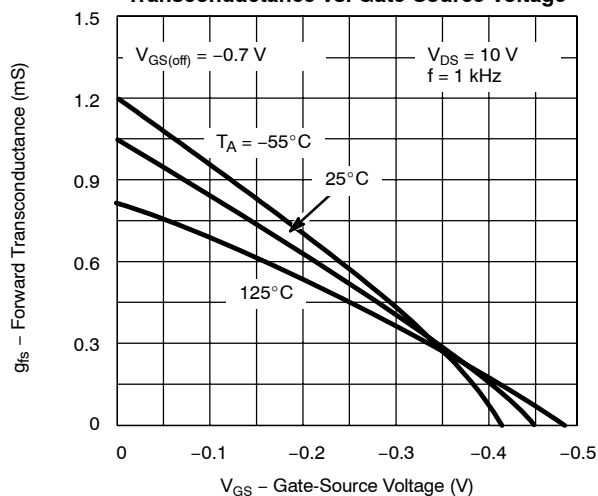
Transfer Characteristics



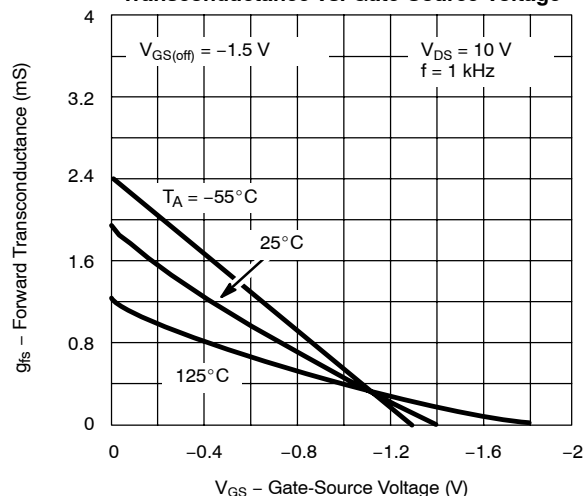
Transfer Characteristics



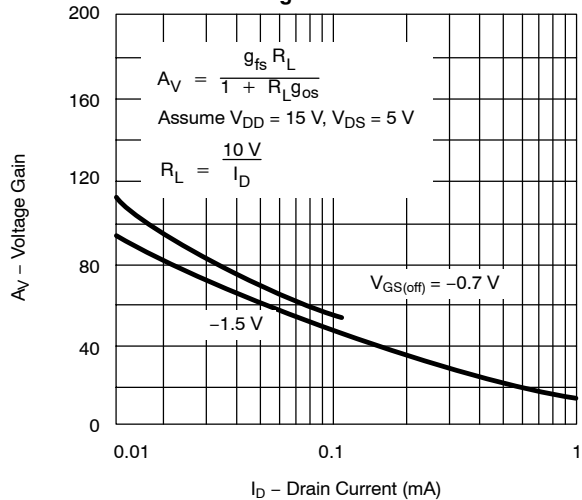
Transconductance vs. Gate-Source Voltage



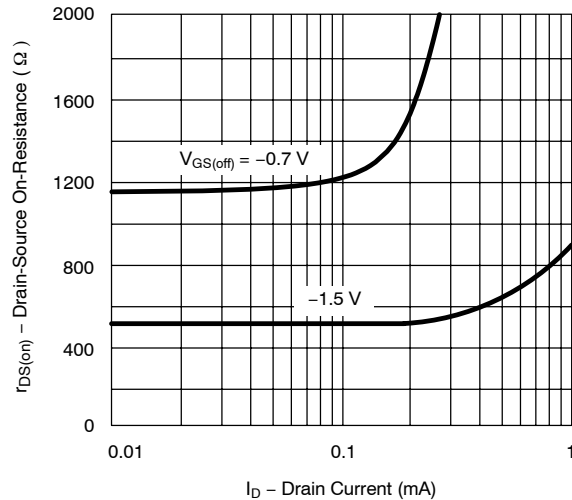
Transconductance vs. Gate-Source Voltage



Circuit Voltage Gain vs. Drain Current



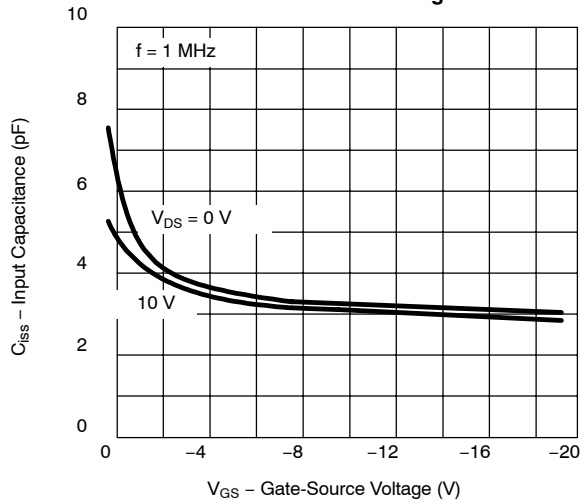
On-Resistance vs. Drain Current



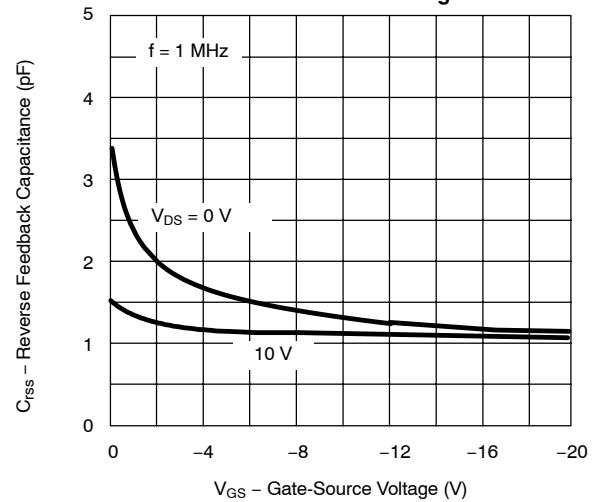


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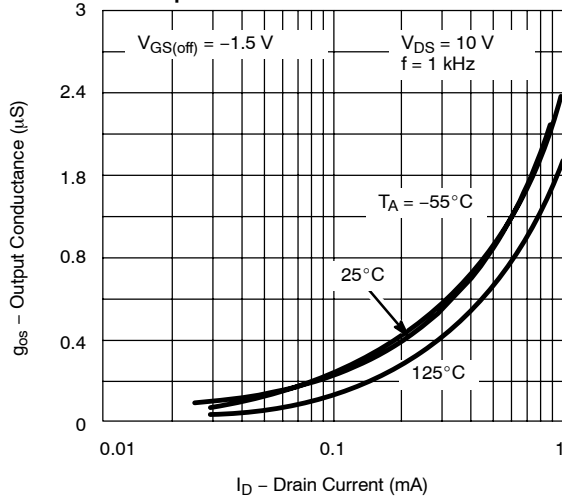
**Common-Source Input Capacitance
vs. Gate-Source Voltage**



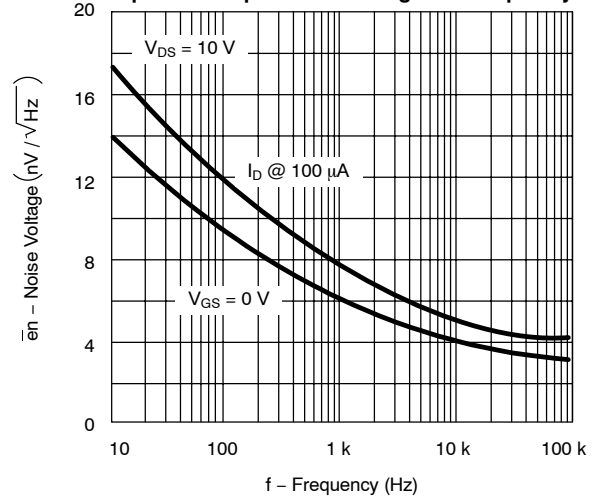
**Common-Source Reverse Feedback Capacitance
vs. Gate-Source Voltage**



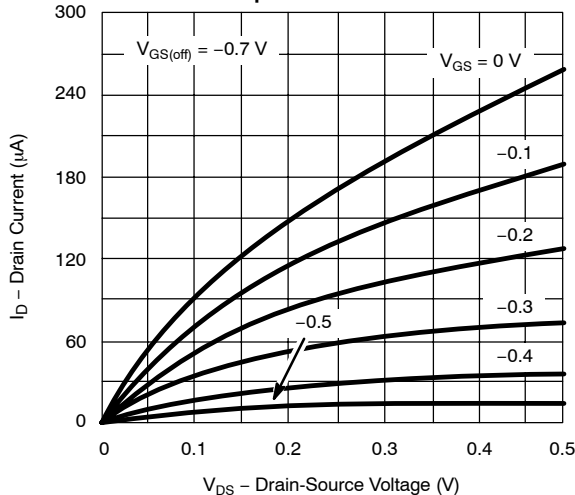
Output Conductance vs. Drain Current



Equivalent Input Noise Voltage vs. Frequency



Output Characteristics



Output Characteristics

