



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

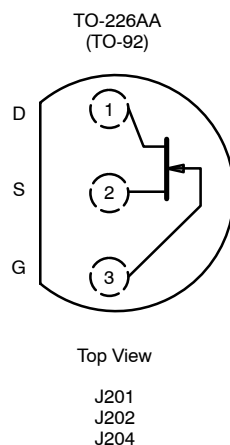
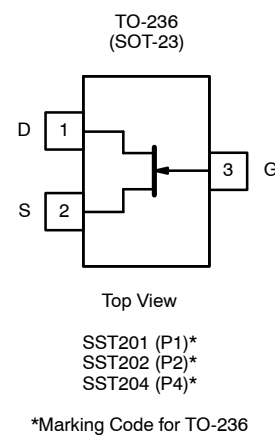
The J/SST201 series features low leakage, very low noise, and low cutoff voltage for use with low-level power supplies. The J/SST201 is excellent for battery powered equipment and low current amplifiers.

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	

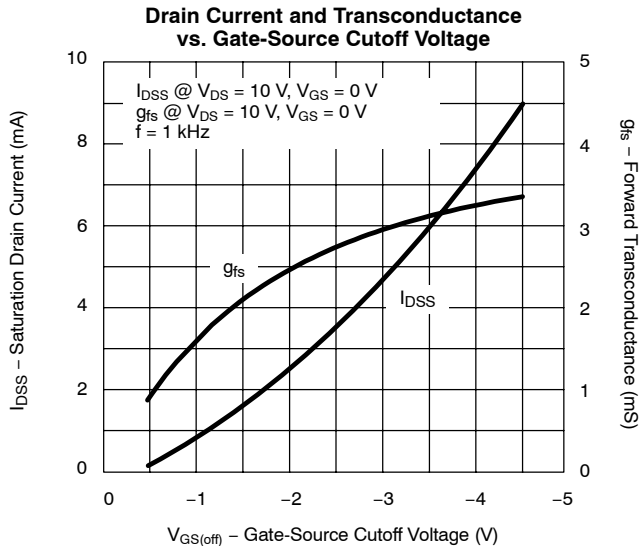
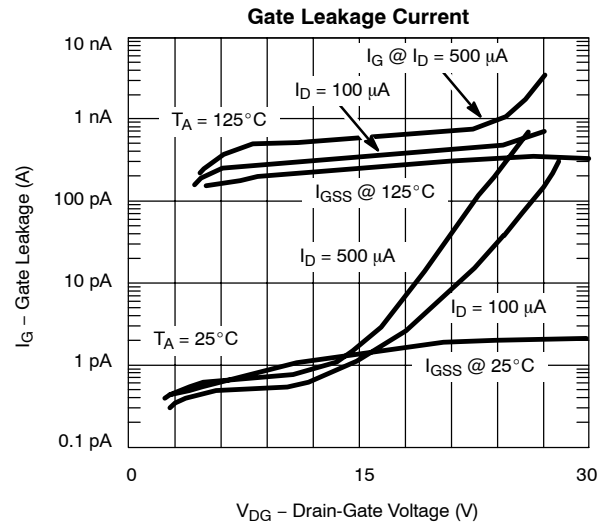
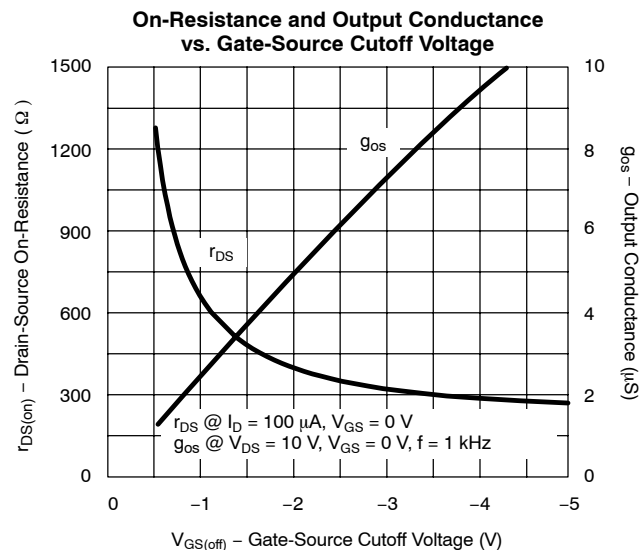
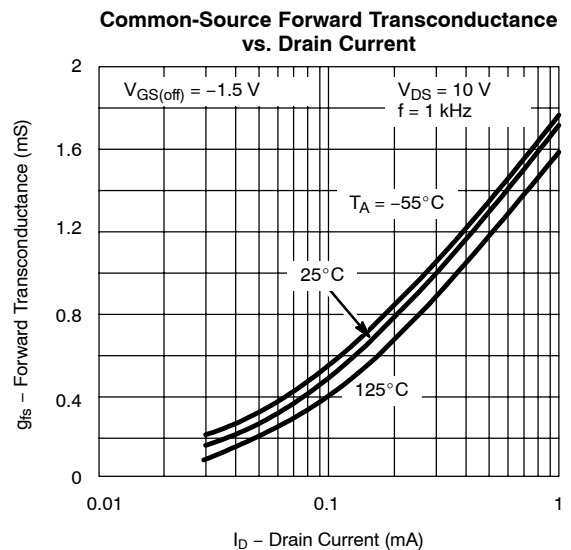
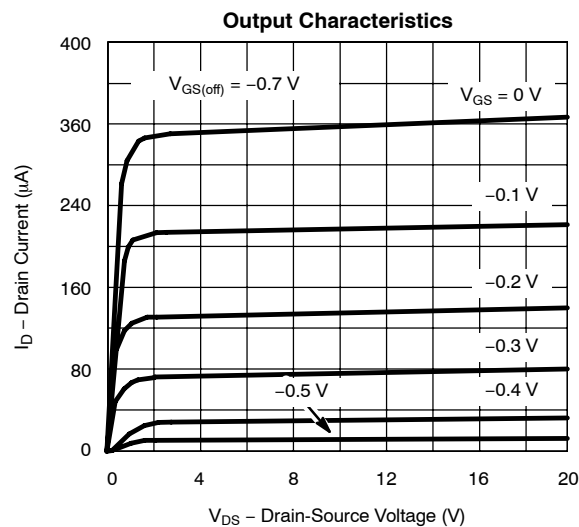
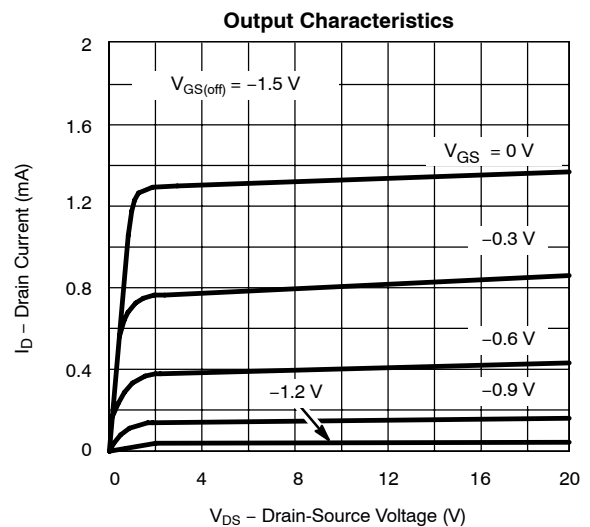
Notes

- 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

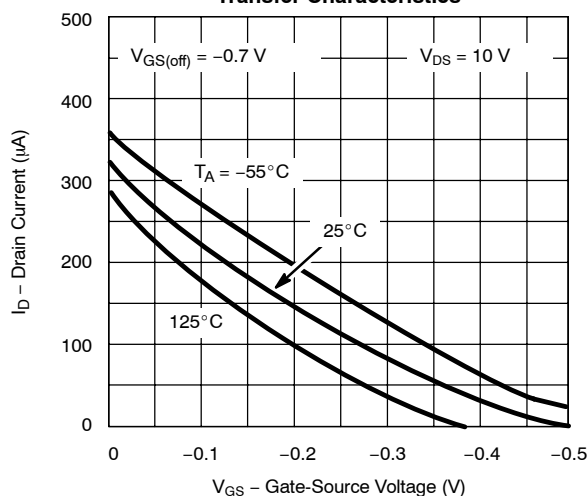


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

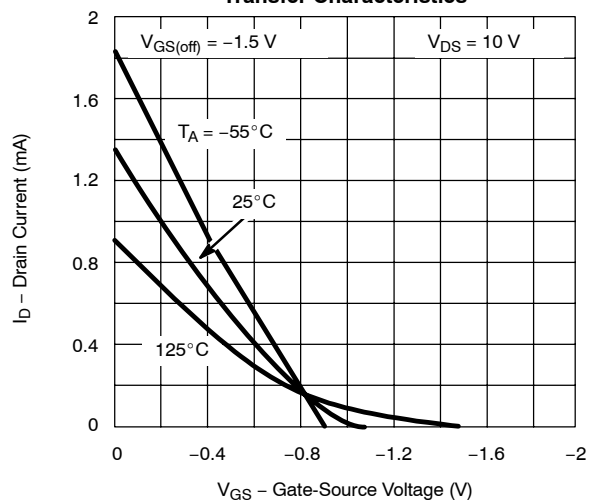


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

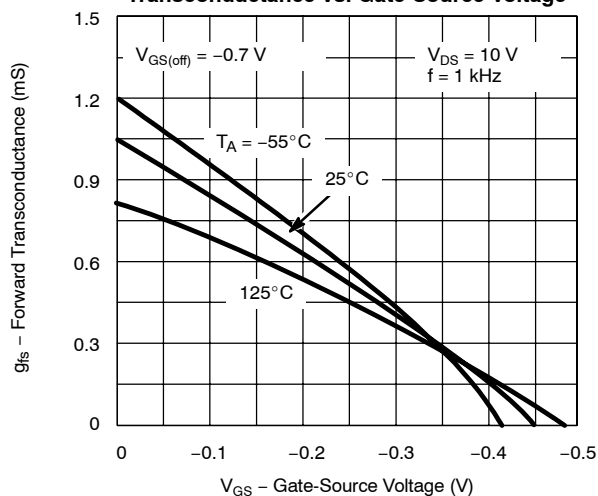
Transfer Characteristics



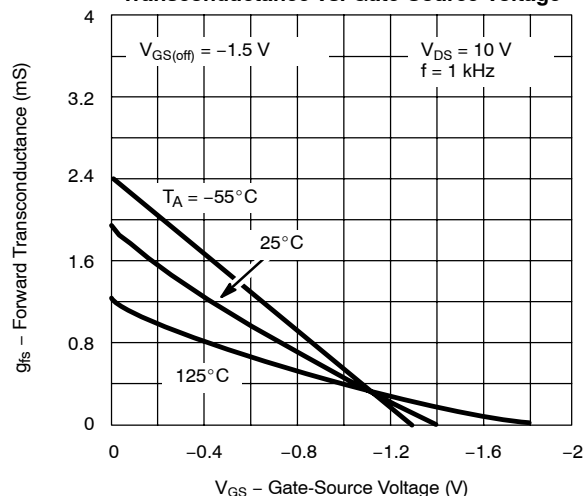
Transfer Characteristics



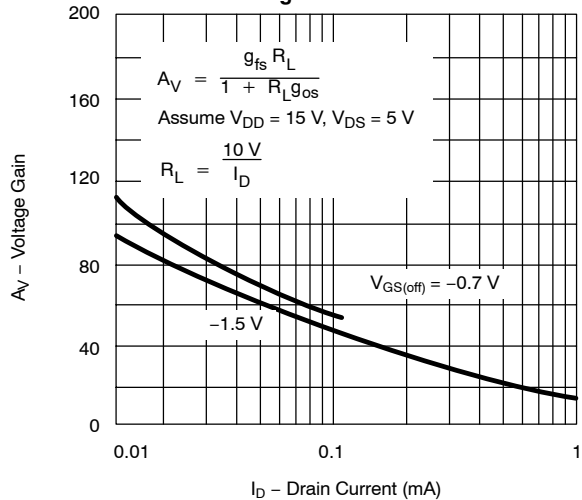
Transconductance vs. Gate-Source Voltage



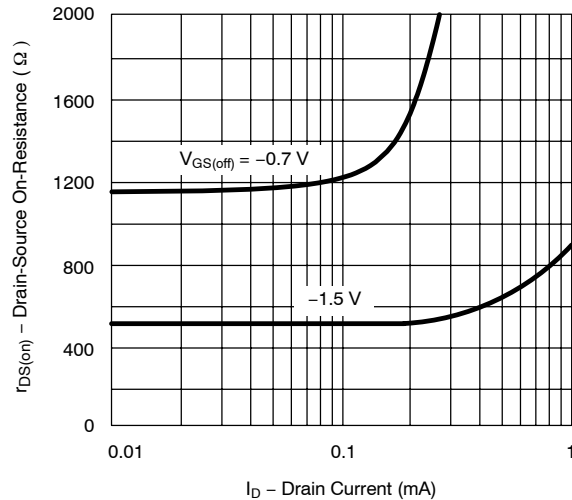
Transconductance vs. Gate-Source Voltage



Circuit Voltage Gain vs. Drain Current



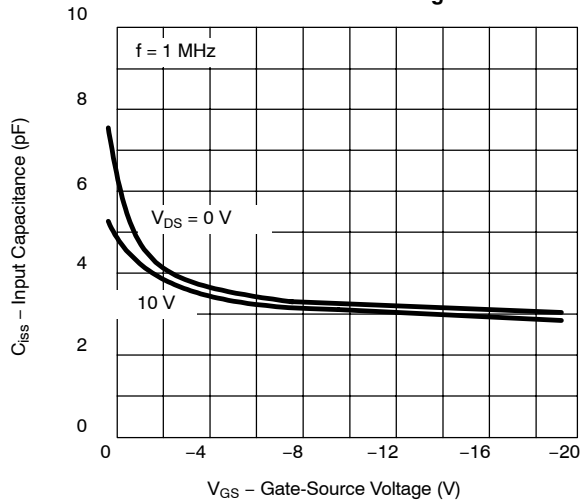
On-Resistance vs. Drain Current



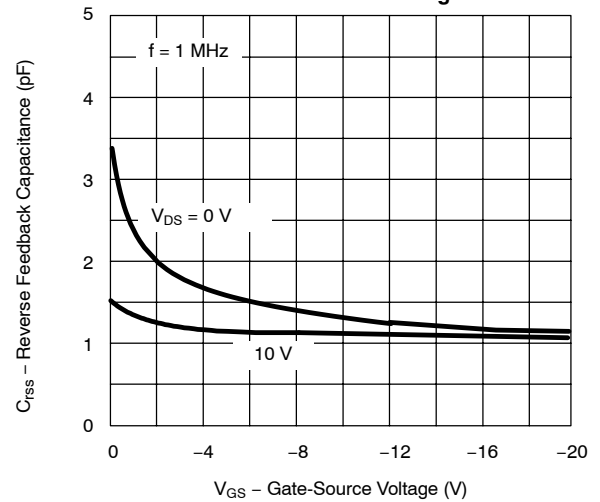


TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

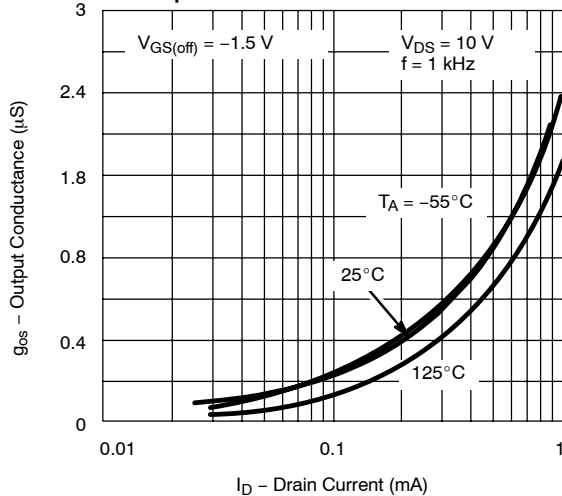
Common-Source Input Capacitance vs. Gate-Source Voltage



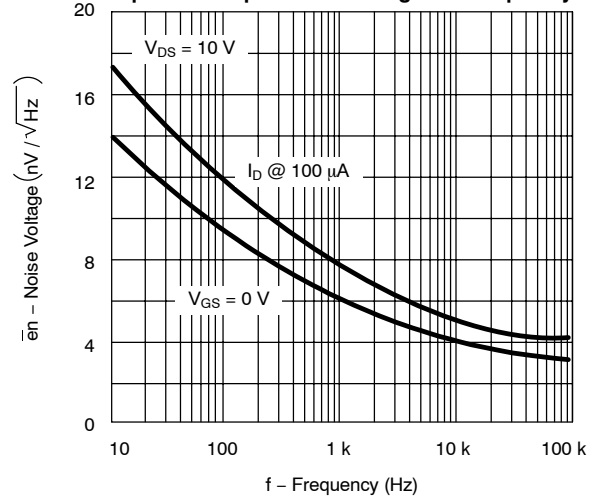
Common-Source Reverse Feedback Capacitance vs. Gate-Source Voltage



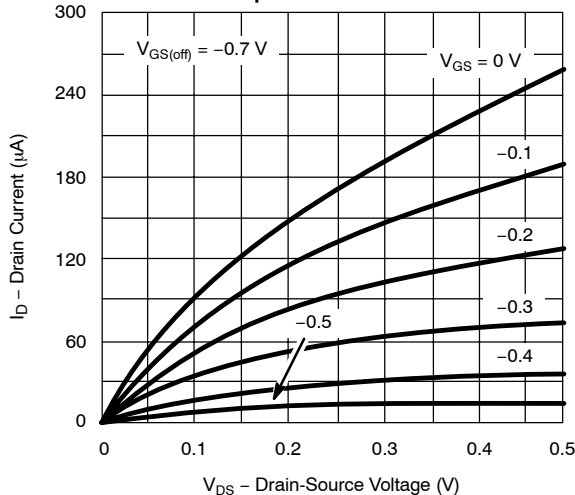
Output Conductance vs. Drain Current



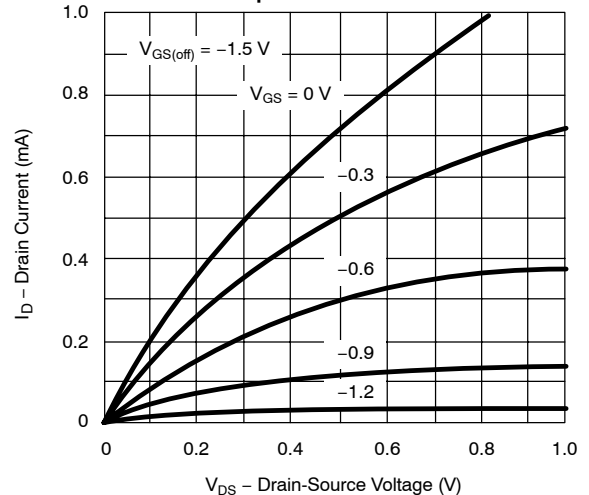
Equivalent Input Noise Voltage vs. Frequency



Output Characteristics



Output Characteristics





Disclaimer

All product specifications and data are subject to change without notice.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained herein or in any other disclosure relating to any product.

Vishay disclaims any and all liability arising out of the use or application of any product described herein or of any information provided herein to the maximum extent permitted by law. The product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein, which apply to these products.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications unless otherwise expressly indicated. Customers using or selling Vishay products not expressly indicated for use in such applications do so entirely at their own risk and agree to fully indemnify Vishay for any damages arising or resulting from such use or sale. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

Product names and markings noted herein may be trademarks of their respective owners.