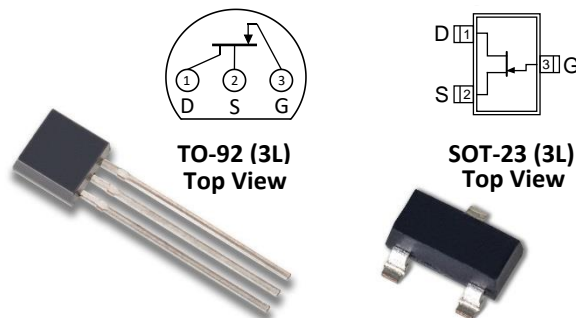


General Purpose, Low Noise, Low Cost, Single JFET

Absolute Maximum Ratings	
@ 25 °C (unless otherwise stated)	
Maximum Temperatures	
Storage Temperature	-65 to +150°C
Junction Operating Temperature	-55 to +150°C
Maximum Power Dissipation	
Continuous Power Dissipation @ +25°C	350mW
Maximum Currents	
Gate Forward Current	$I_{G(F)} = 10\text{mA}$
Maximum Voltages	
Gate to Source	$V_{GSS} = 40\text{V}$
Gate to Drain	$V_{GDS} = 40\text{V}$



Features

- Low Cutoff Voltage: J201 <1.5V
- High Input Impedance
- Very Low Noise
- High Gain: $A_V = 80 @ 20 \mu\text{A}$
- Reverse Gate to Source and Drain Voltage $\geq -40\text{V}$

Benefits

- Low Cost
- Excellent Low Power Supply Operation
- Power Supply: Down to 1.5V
- Low Signal Loss/System Error
- High System Sensitivity
- High Quality Low-Level Signal

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/SST201/2/4 series is a low cost direct replacement for Siliconix J/SST201/2/4 series. Features include low leakage, very low noise, low cutoff voltage ($V_{GS(off)} \leq 1.5\text{V}$) and high Gain ($A_V = 80 \text{ V/V}$) for use with low-level power supplies. The J/SST201/2/4 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 and in die form for automated assembly.

Electrical Characteristics @ 25 °C (unless otherwise stated)

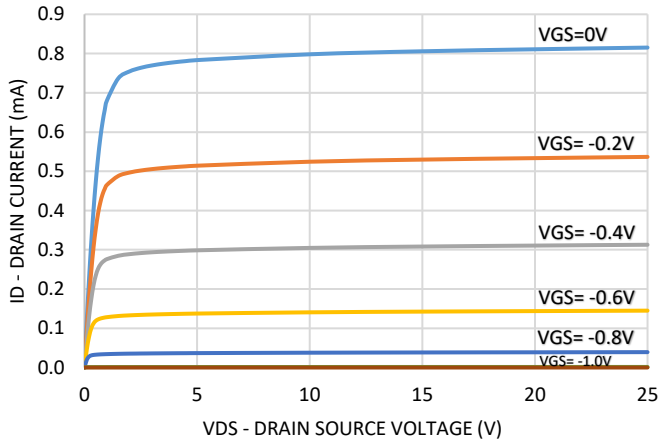
SYMBOL	CHARACTERISTIC	MIN	TYP	MAX	UNITS	CONDITIONS	
BV_{GSS}	Gate to Source Breakdown Voltage	J/SST201, 202	-40			V	$I_G = -1\mu\text{A}, V_{DS} = 0.0\text{V}$
		J/SST204	-25				
$V_{GS(off)}$	Gate to Source Cutoff Voltage	J/SST201	-0.3		-1.5	V	$V_{DS} = 15\text{V}, I_D = 10\text{nA}$
		J/SST202	-0.8		-4.0		
		J/SST204	-0.2		2.0		
I_{DSS}	Drain to Source Saturation Current ²	J/SST201	0.2		1.0	mA	$V_{DS} = 15\text{V}, V_{GS} = 0.0\text{V}$
		J/SST202	0.9		4.5		
		J/SST204	0.2		3.0		
I_{GSS}	Gate Reverse Current			-100	pA	$V_{GS} = -20\text{V}, V_{DS} = 0.0\text{V}$	
I_G	Gate Operating Current		-2			$V_{DG} = 10\text{V}, I_D = 0.1\text{mA}$	
$I_{D(off)}$	Drain Cutoff Current		2			$V_{DS} = 15\text{V}, V_{GS} = 5.0\text{V}$	

Electrical Characteristics @ 25 °C (unless otherwise stated) Continued

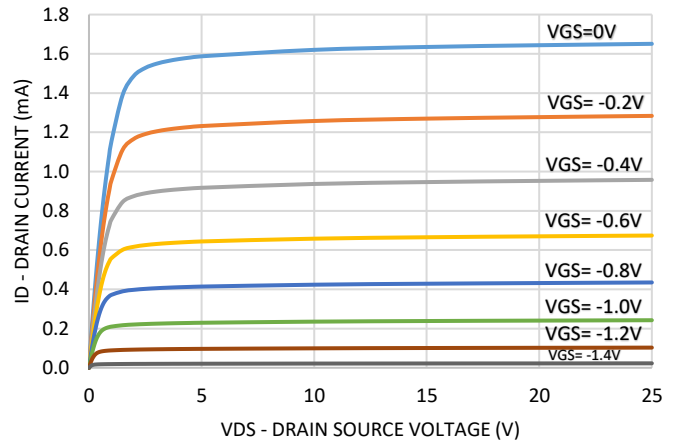
SYMBOL	CHARACTERISTIC		MIN	TYP	MAX	UNITS	CONDITIONS
g_{fs}	Forward Transconductance	J/SST201, 204	0.5			mS	$V_{DS} = 15V, V_{GS} = 0.0V, f = 1kHz$
		J/SST202	1.0				
C_{iss}	Input Capacitance			4.5		pF	$V_{DS} = 15V, V_{GS} = 0.0V, f = 1MHz$
C_{rss}	Reverse Transfer Capacitance			1.3			
e_n	Noise Voltage			4.0		nV/ \sqrt{Hz}	$V_{DS} = 10V, V_{GS} = 0.0V, f = 1kHz$

Typical Characteristics

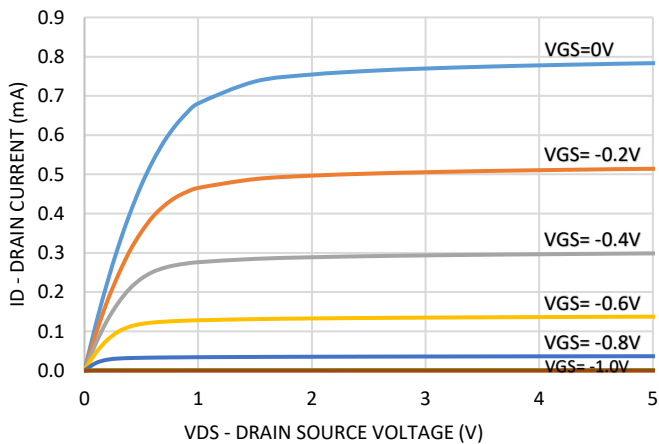
Output Characteristic
J201 - (VGS(off) = -1.1V)



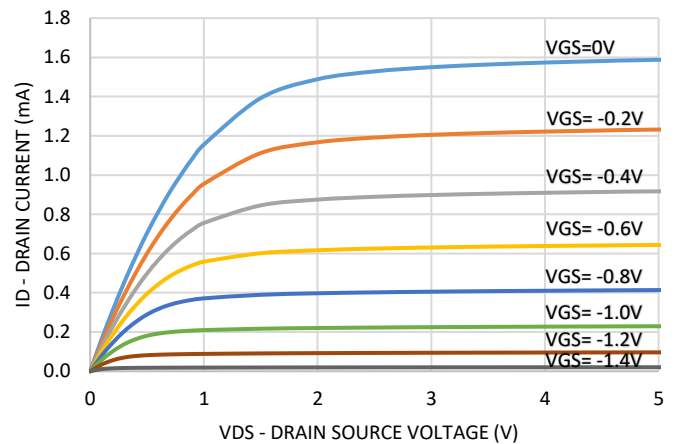
Output Characteristic
J202 - (VGS(off) = -1.75V)



Output Characteristic
J201 - (VGS(off) = -1.1V)

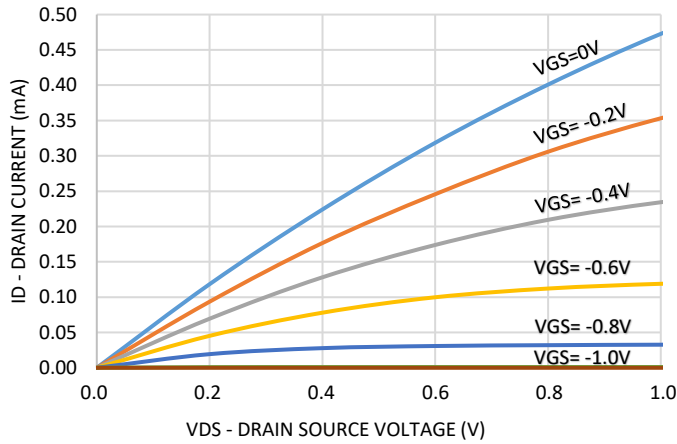


Output Characteristic
J202 - (VGS(off) = -1.75V)

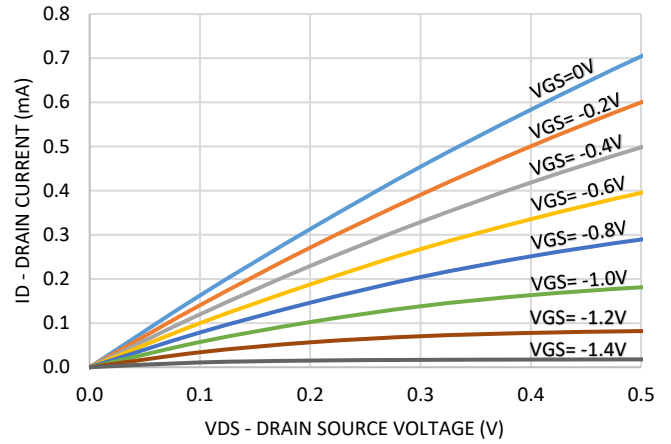


Typical Characteristics Continued

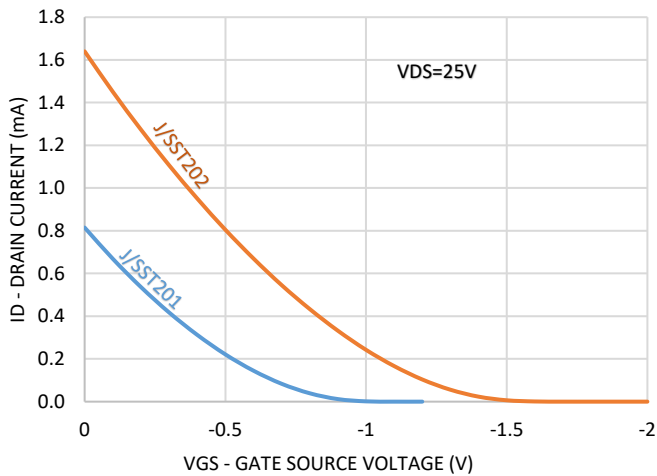
Output Characteristic
J201 - (VGS(off) = -1.1V)



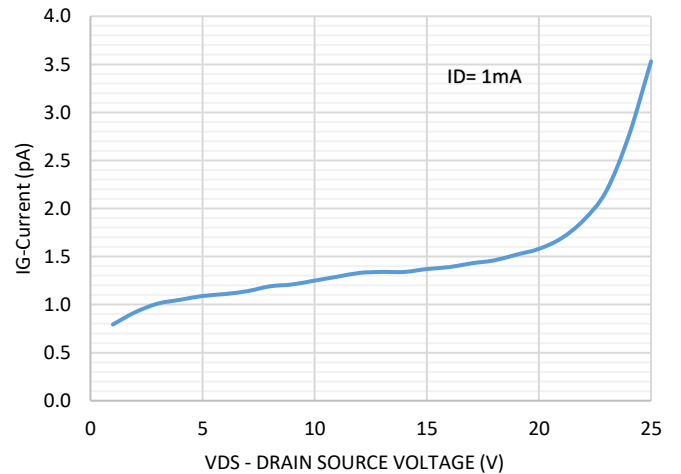
Output Characteristic
J202 - (VGS(off) = -1.75V)



Transfer Characteristics

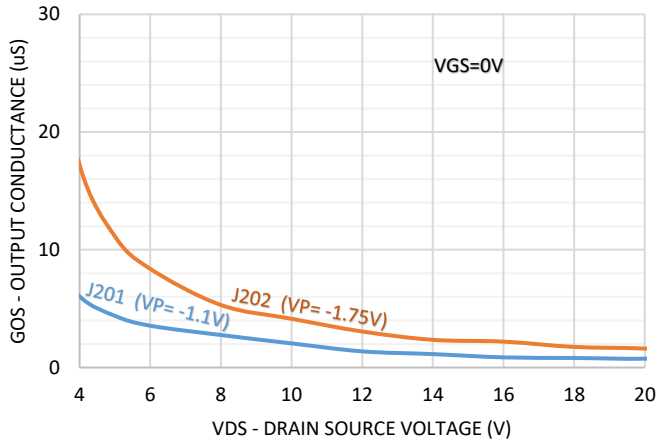


Operating Gate Current

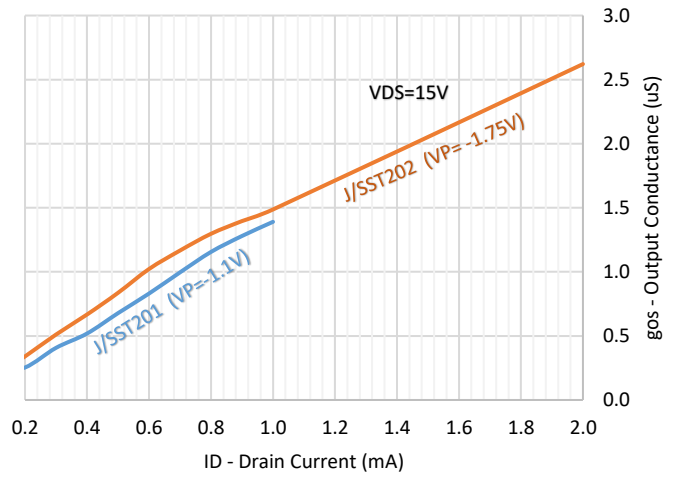


Typical Characteristics Continued

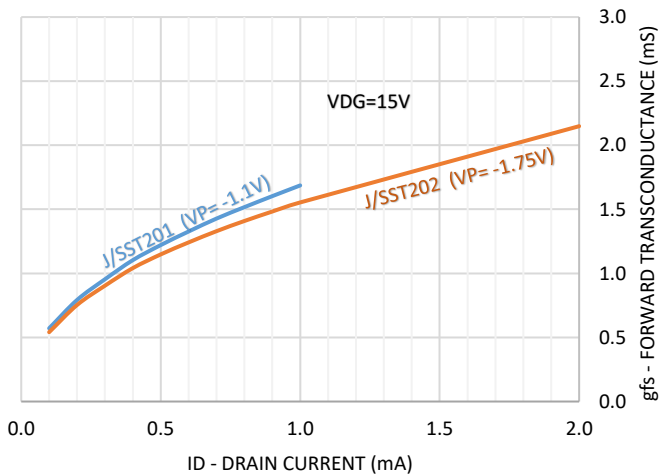
Output Conductance vs Drain Source Voltage



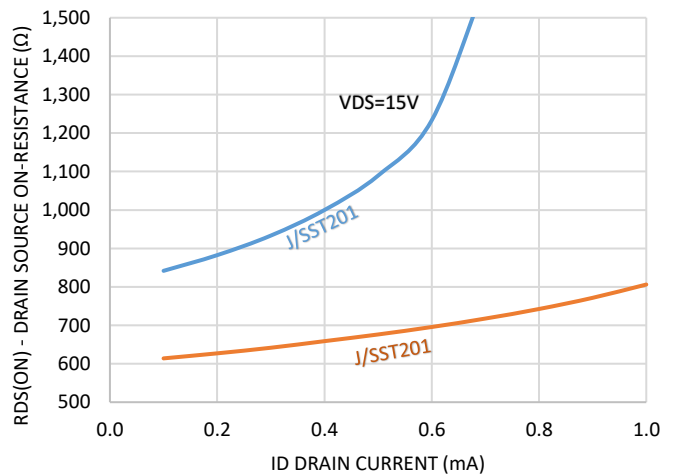
Output Conductance vs. Drain Current



Forward Transconductance vs. Drain Current

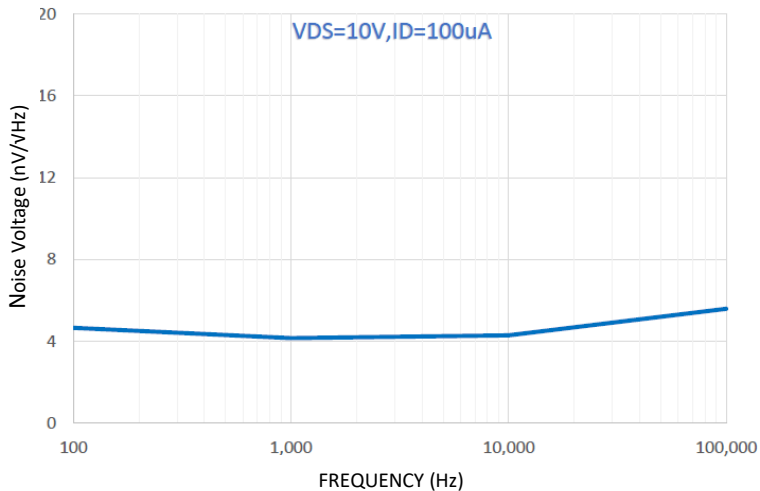


RDS - ID

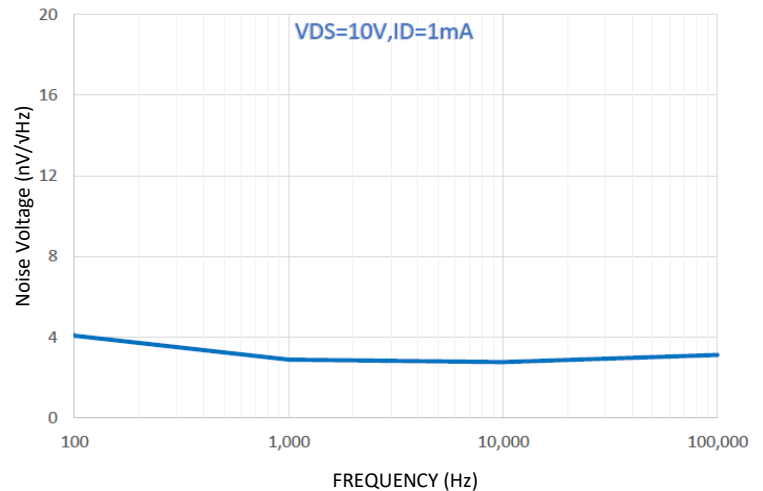


Typical Characteristics Continued

Input Noise Voltage vs Frequency

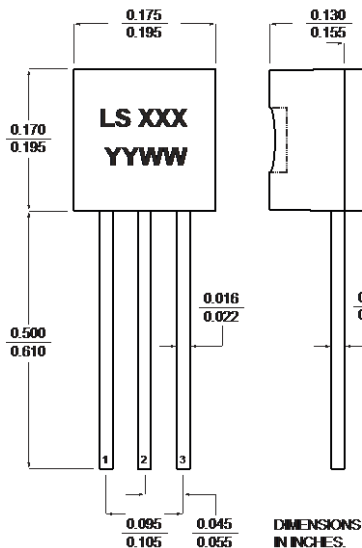


Input Noise Voltage vs Frequency

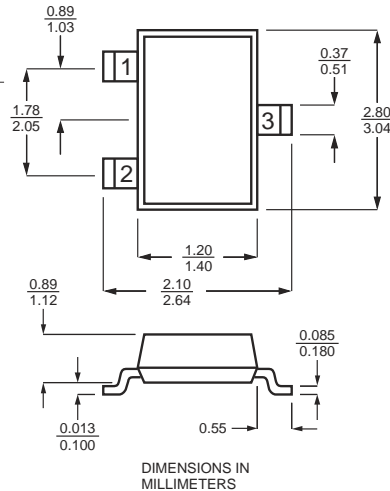


Package Dimensions

TO-92 3 Lead



SOT-23 3 Lead



Ordering Information

STANDARD PART CALL-OUT
J201 TO-92 3L RoHS
J202 TO-92 3L RoHS
J204 TO-92 3L RoHS
SST201 SOT-23 3L RoHS
SST202 SOT-23 3L RoHS
SST204 SOT-23 3L RoHS
CUSTOM PART CALL-OUT
(CUSTOM PARTS INCLUDE SEL + 4 DIGIT NUMERIC CODE)
J201 TO-92 3L RoHS SELXXXX
J202 TO-92 3L RoHS SELXXXX
J204 TO-92 3L RoHS SELXXXX
SST201 SOT-23 3L RoHS SELXXXX
SST202 SOT-23 3L RoHS SELXXXX
SST204 SOT-23 3L RoHS SELXXXX

Notes

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Pulse Test: PW ≤ 300μs, Duty Cycle ≤ 3%
3. All characteristics MIN/TYP/MAX numbers are absolute values. Negative values indicate electrical polarity only.
4. When ordering include the full Linear Systems part number and package type. Linear Systems creates custom parts on a case by case basis. To learn whether Linear Systems can meet your requirements, please send your drawing along with a detailed description of the device specifications to sales@linearsystems.com. One of our qualified representatives will contact you.
5. All standard parts are RoHS compliant. Contact the factory for availability of non-RoHS parts.
6. Information furnished by Linear Integrated Systems is believed to be accurate and reliable. However, no responsibility is assumed for its use; nor for any infringement of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Linear Integrated Systems.