

## N-Channel JFETs

<b>J201</b>	<b>SST201</b>
<b>J202</b>	<b>SST202</b>
<b>J204</b>	<b>SST204</b>

### Product Summary

Part Number	V <sub>GS(off)</sub> (V)	V <sub>(BR)GSS</sub> Min (V)	g <sub>fs</sub> Min (mS)	I <sub>DSS</sub> 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

For applications information see AN102, page 6, and AN106, page 28.

### Features

- Low Cutoff Voltage: J201 <1.5 V
- High Input Impedance
- Very Low Noise
- High Gain: A<sub>V</sub> = 80 @ 20 μA

### 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

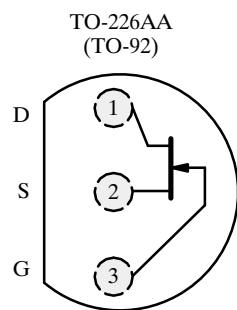
### Description

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.

package, provides surface-mount capability. Both the J and SST series are available in tape-and-reel for automated assembly (see Packaging Information).

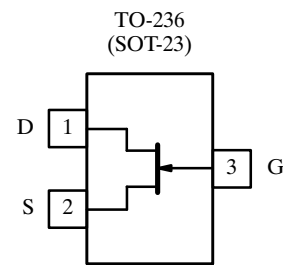
The J series, TO-226 (TO-92) plastic package, provides low cost, while the SST series, TO-236 (SOT-23)

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



Top View

J201  
J202  
J204



Top View

SST201 (P1)\*  
SST202 (P2)\*  
SST204 (P4)\*

\*Marking Code for TO-236

### 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 <sup>a</sup>	350 mW

#### Notes

a. Derate 2.8 mW/°C above 25°C

### Specifications<sup>a</sup>

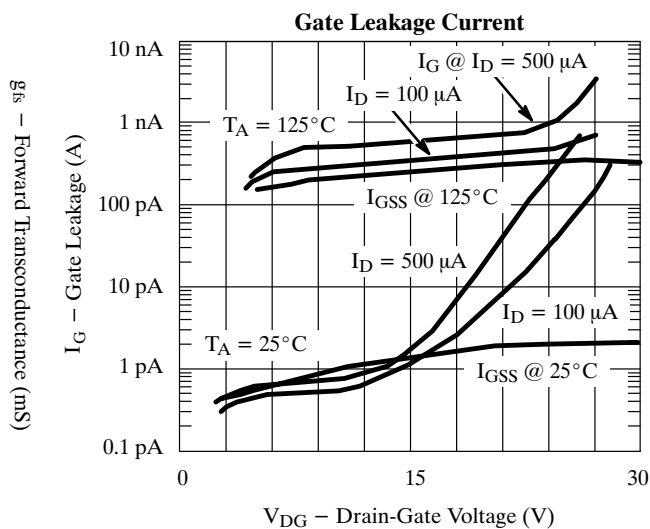
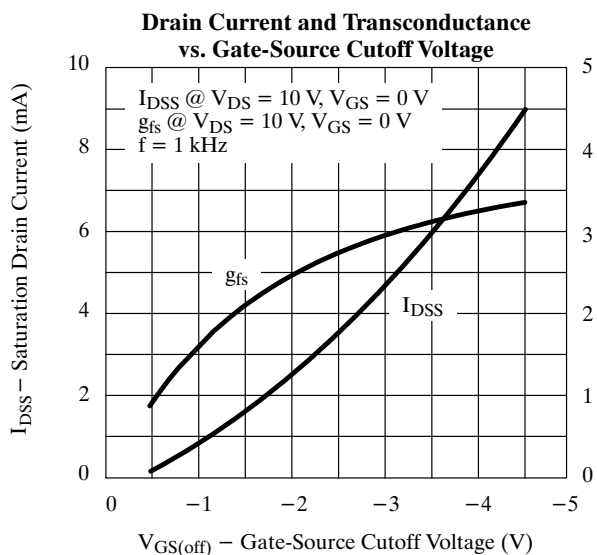
Parameter	Symbol	Test Conditions	Typ <sup>b</sup>	Limits						Unit
				J/SST201		J/SST202		J/SST204 <sup>d</sup>		
				Min	Max	Min	Max	Min	Max	
<b>Static</b>										
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1 \mu A, V_{DS} = 0 V$		-40		-40		-25		V
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 15 V, I_D = 10 nA$		-0.3	-1.5	-0.8	-4	-0.3	-2	
Saturation Drain Current <sup>c</sup>	$I_{DSS}$	$V_{DS} = 15 V, V_{GS} = 0 V$		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
		$T_A = 125^\circ C$	-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
<b>Dynamic</b>										
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	$\bar{e}_n$	$V_{DS} = 10 V, V_{GS} = 0 V$ $f = 1 kHz$	6							nV/ $\sqrt{Hz}$

**Notes**

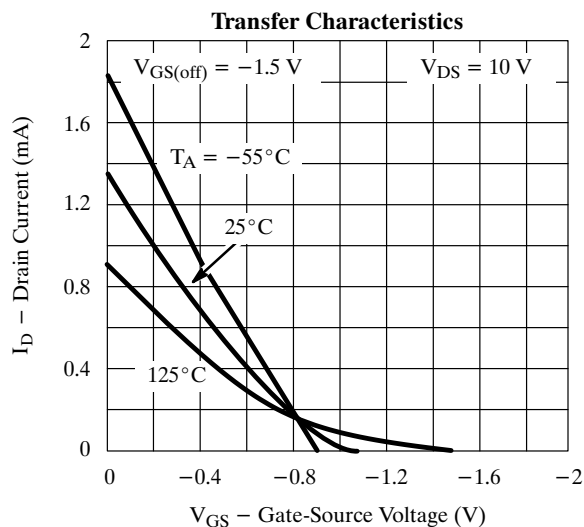
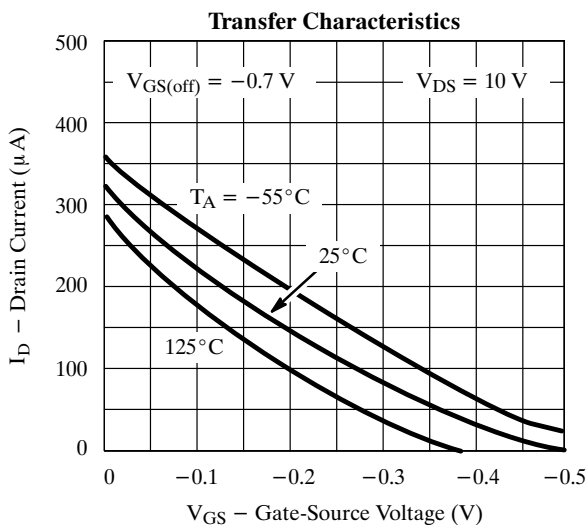
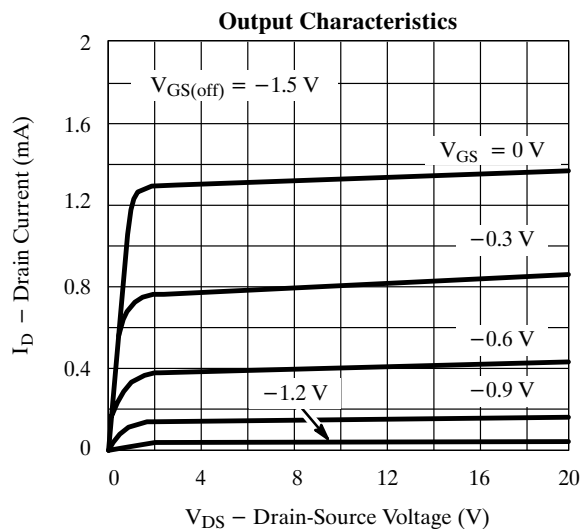
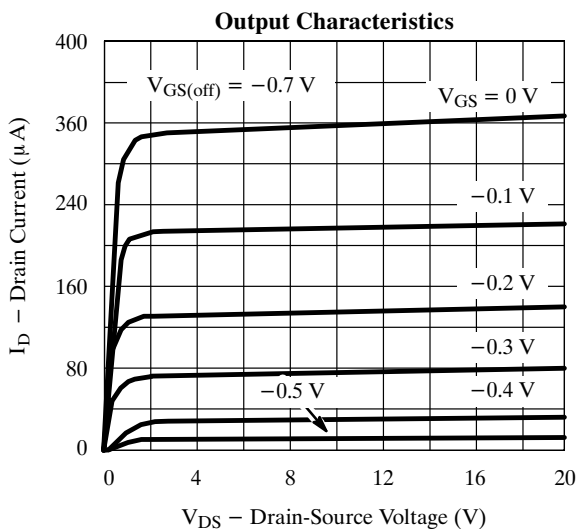
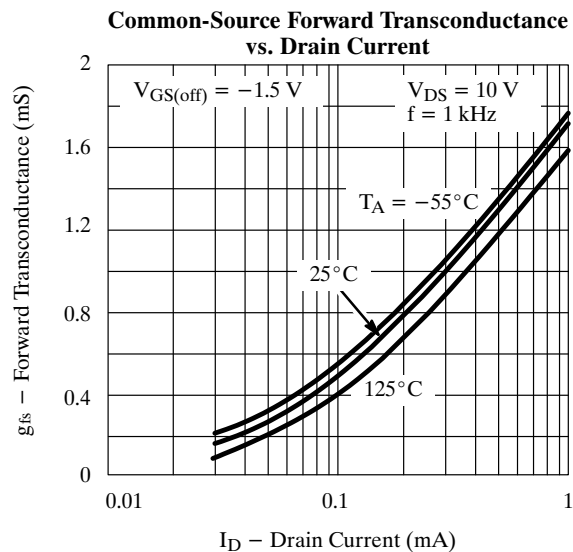
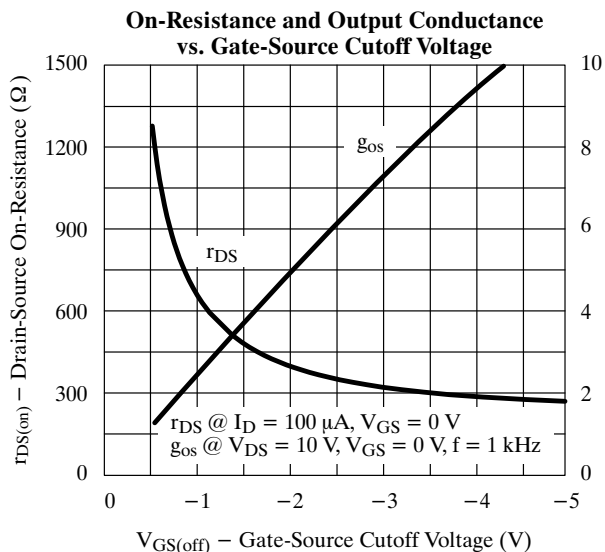
- a.  $T_A = 25^\circ C$  unless otherwise noted.
- b. Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- c. Pulse test:  $PW \leq 300 \mu s$  duty cycle  $\leq 3\%$ .
- d. See 2N/SST5484 Series for J204 typical characteristic curves.

NPA  
NH

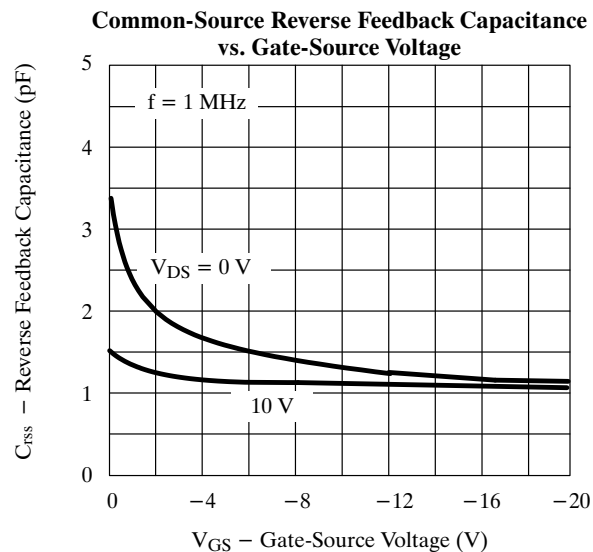
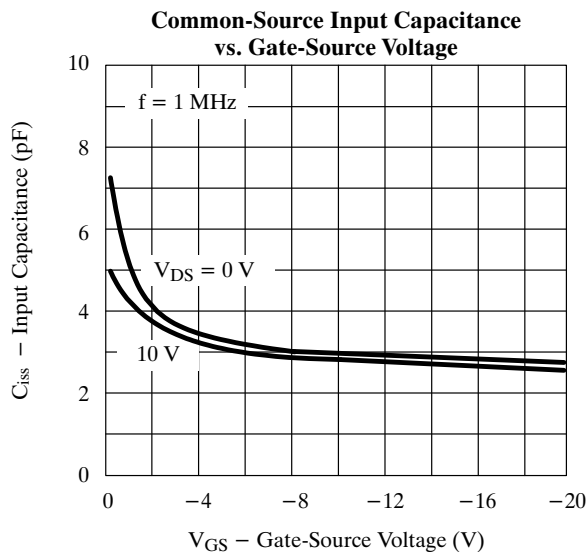
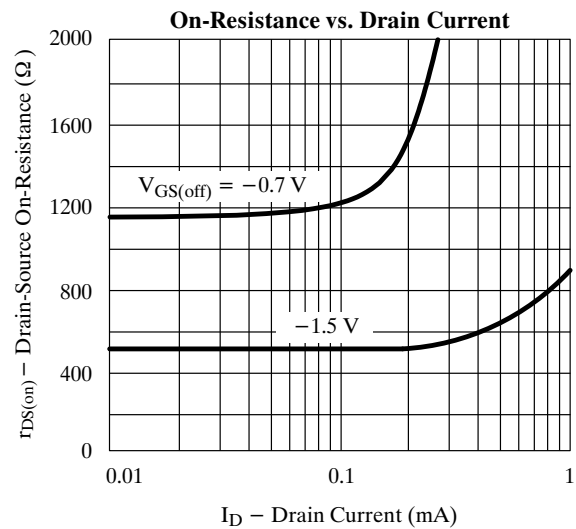
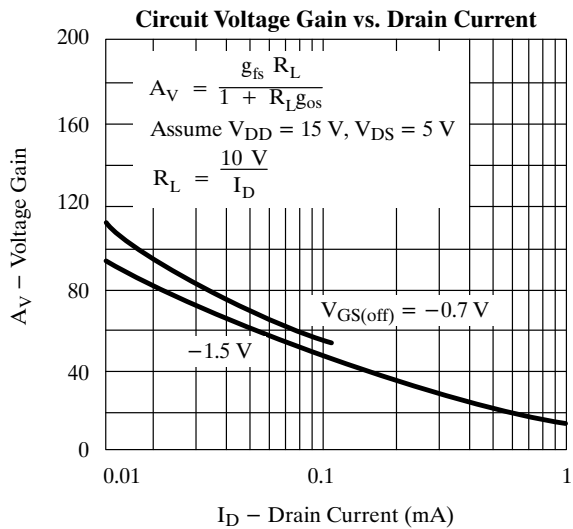
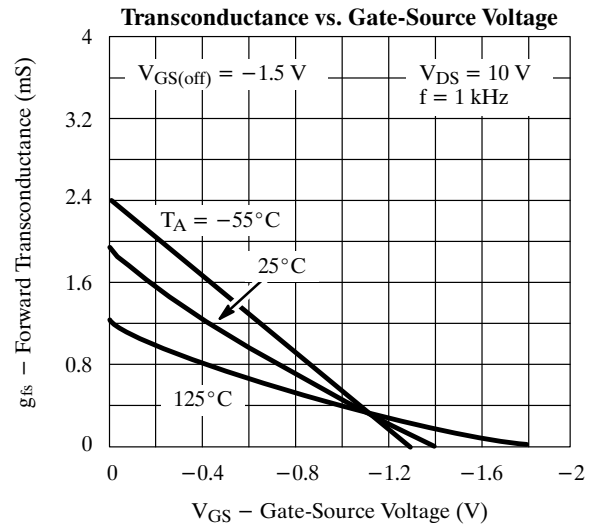
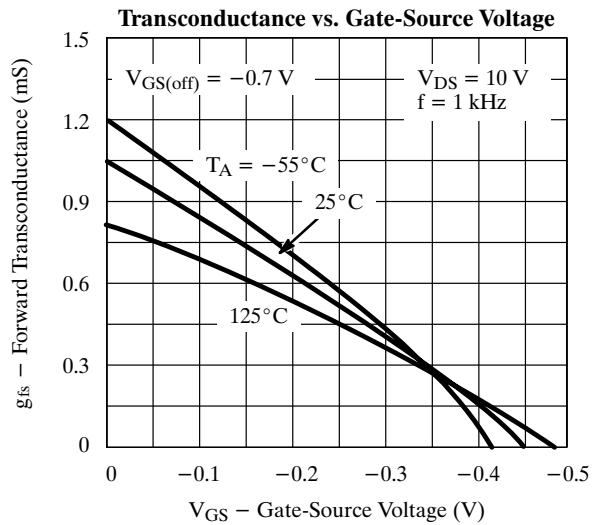
### Typical Characteristics



## Typical Characteristics (Cont'd)



### Typical Characteristics (Cont'd)



## Typical Characteristics (Cont'd)

