

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 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

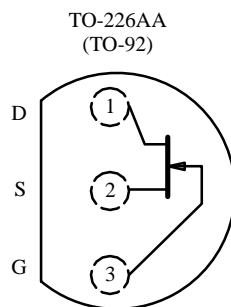
- High-Gain, Low-Noise Amplifiers
- Low-Current, Low-Voltage Battery-Powered Amplifiers
- Infrared Detector Amplifiers
- Ultra High Input Impedance Pre-Amplifiers

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.

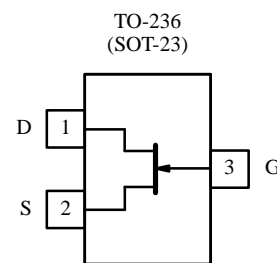
For similar products in TO-206AA (TO-18) packaging, see the 2N4338/4339/4340/4341 data sheet.

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).



Top View

J201
J202
J204



Top View

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

*Marking Code for TO-236

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70233. Applications information may also be obtained via FaxBack, request document #70595 and document #70599.

Absolute Maximum Ratings

Gate-Drain, Gate-Source Voltage	-40 V	Operating Junction Temperature	-55 to 150°C
Gate Current	50 mA	Power Dissipation ^a	350 mW
Lead Temperature (1/16" from case for 10 sec.)	300°C	Notes	
Storage Temperature	-55 to 150°C	a. Derate 2.8 mW/°C above 25°C	

Specifications^a

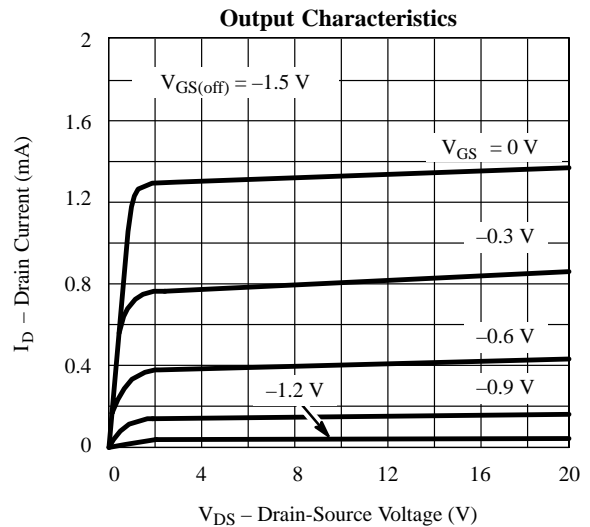
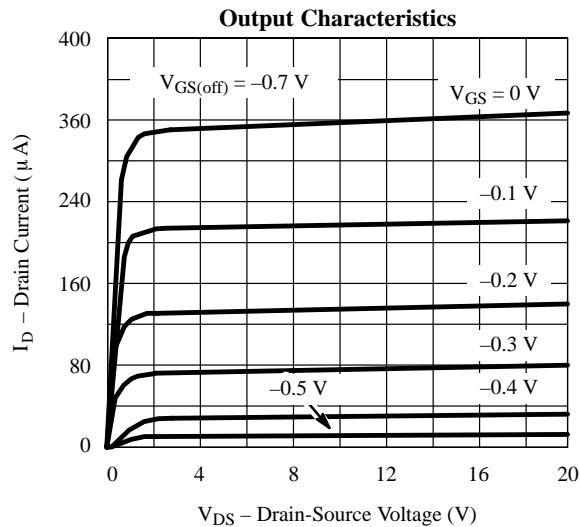
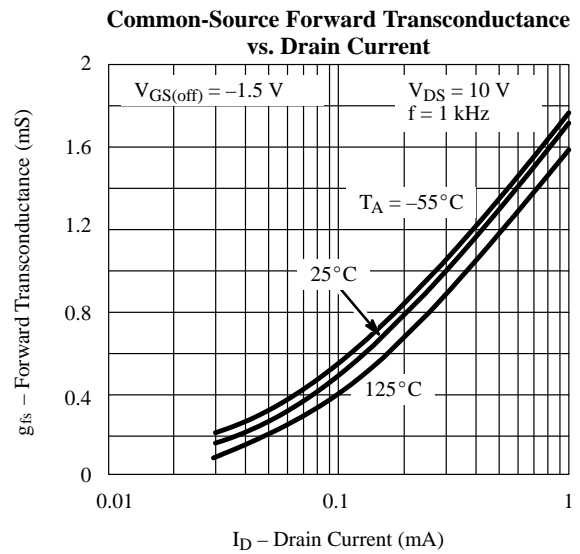
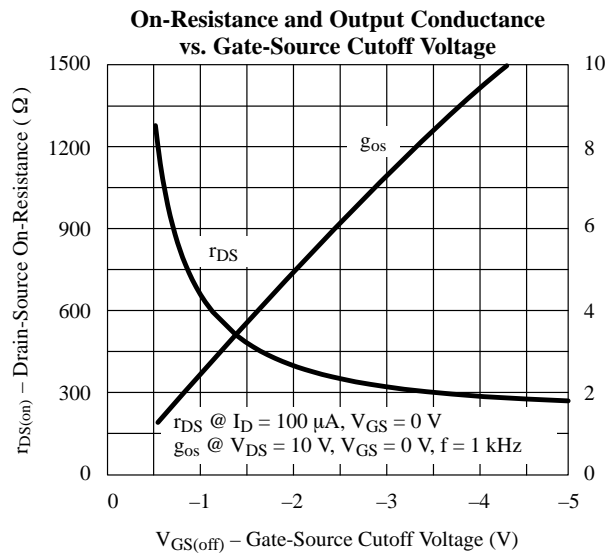
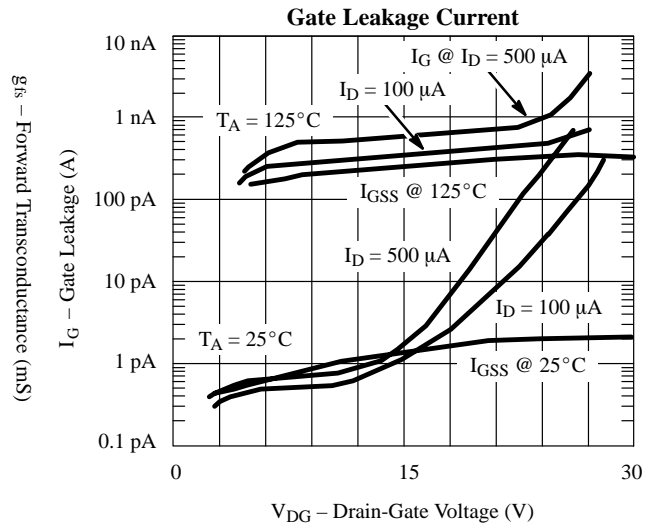
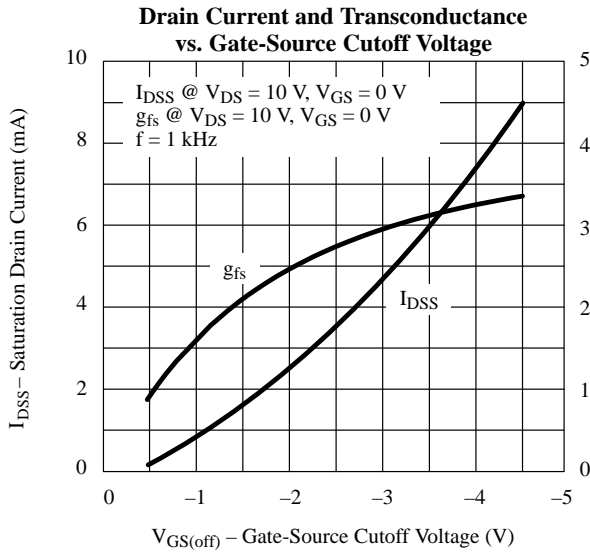
Parameter	Symbol	Test Conditions	Typ ^b	Limits						Unit
				J/SST201		J/SST202		J/SST204 ^d		
				Min	Max	Min	Max	Min	Max	
Static										
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = -1 \mu A, V_{DS} = 0 V$		-40		-40		-25		V
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 15 V, I_D = 10 nA$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

Notes

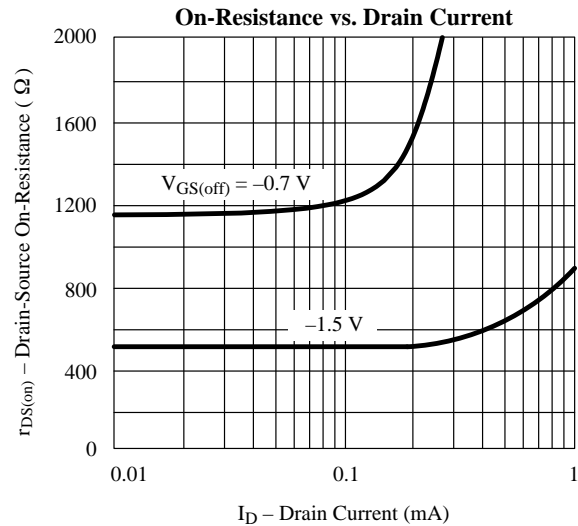
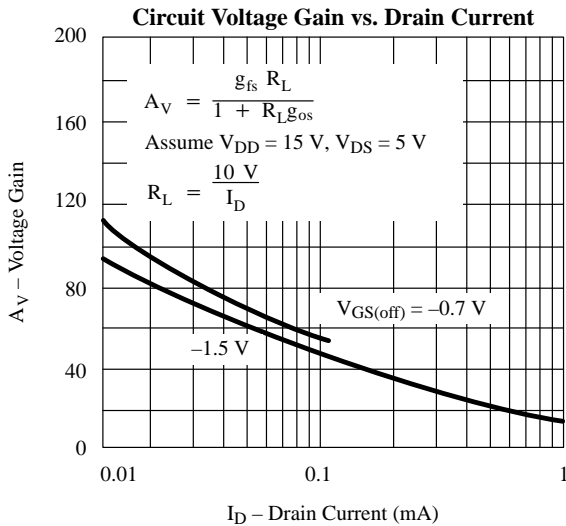
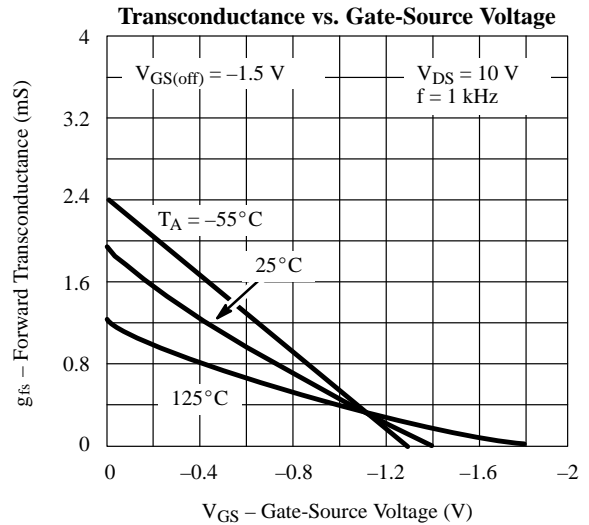
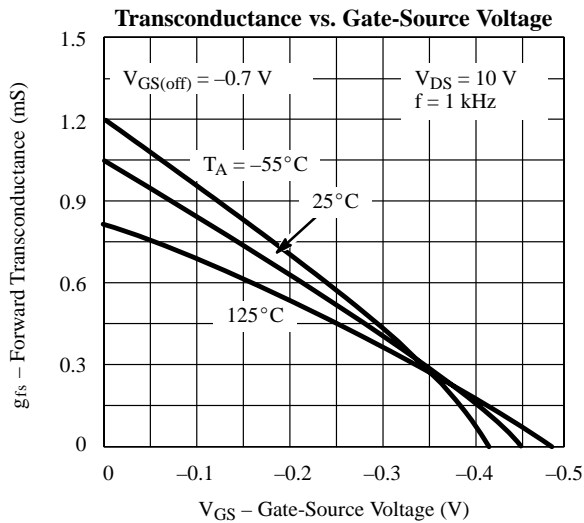
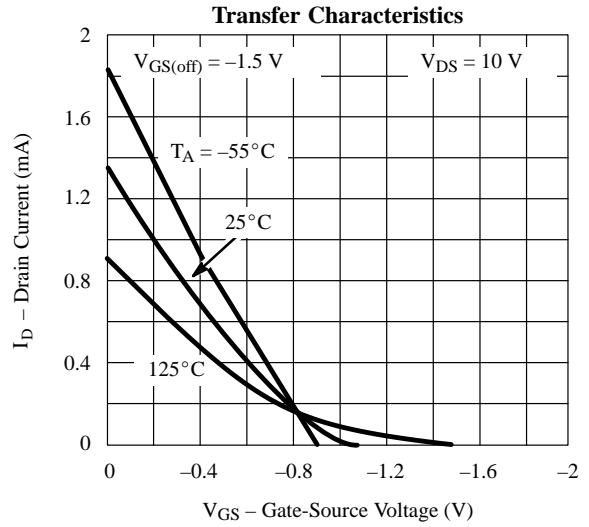
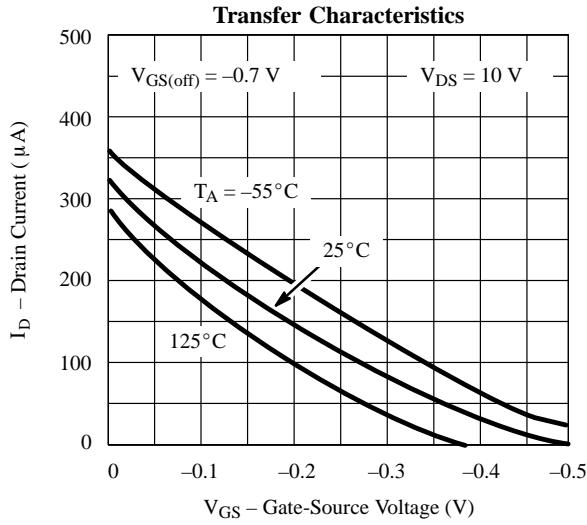
- $T_A = 25^\circ C$ unless otherwise noted.
- Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- Pulse test: $PW \leq 300 \mu s$ duty cycle $\leq 3\%$.
- See 2N/SST5484 Series for J204 typical characteristic curves.

NPA
NH

Typical Characteristics (25°C Unless Noted)



Typical Characteristics (25°C Unless Noted)



Typical Characteristics (25°C Unless Noted)

