

P-Channel JFETs

J270 SST270
J271 SST271

Product Summary

Part Number	V _{GS(off)} (V)	V _{(BR)GSS} Min (V)	g _{fs} Min (mS)	I _{DSS} Min (mA)
J/SST270	0.5 to 2.0	30	6	-2
J/SST271	1.5 to 4.5	30	8	-6

Features

- Low Cutoff Voltage: J270 <2 V
- High Input Impedance
- Very Low Noise
- High Gain

Benefits

- Full Performance from Low-Voltage Power Supply: Down to 2 V
- Low Signal Loss/System Error
- High System Sensitivity
- High-Quality, Low-Level Signal Amplification

Applications

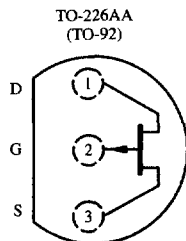
- High-Gain, Low-Noise Amplifiers
- Low-Current, Low-Voltage Battery Amplifiers
- Ultrahigh Input Impedance Pre-Amplifiers
- High-Side Switching

Description

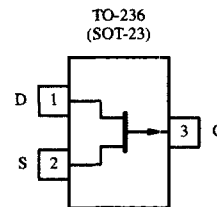
The J/SST270 series consists of all-purpose amplifiers for designs requiring p-channel operation.

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

The TO-226AA (TO-92) plastic package provides a low-cost option, while the TO-236 (SOT-23) package



Top View
J270
J271



Top View
SST270 (S0)*
SST271 (S1)*
*Marking Code for TO-236

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Absolute Maximum Ratings

Gate-Drain Voltage	30 V	Lead Temperature (¹ / ₁₆ " from case for 10 sec.)	300°C
Gate-Source Voltage	30 V	Power Dissipation ^a	350 mW
Gate Current	-50 mA	Notes	
Storage Temperature	-55 to 150°C	a. Derate 2.8 mW/°C above 25°C	
Operating Junction Temperature	-55 to 150°C		

Updates to this data sheet may be obtained via facsimile by calling Siliconix FaxBack, 1-408-970-5600. Please request FaxBack document #70258.

Specifications^a

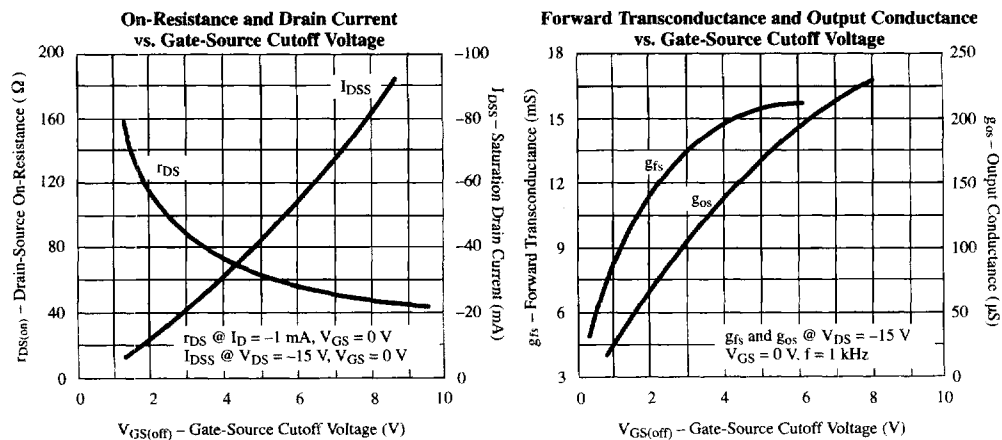
Parameter	Symbol	Test Conditions	Typ ^b	Limits				Unit
				J/SST270		J/SST271		
				Min	Max	Min	Max	
Static								
Gate-Source Breakdown Voltage	$V_{(BR)GSS}$	$I_G = 1 \mu A, V_{DS} = 0 V$	45	30		30		V
Gate-Source Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = -15 V, I_D = -1 nA$		0.5	2.0	1.5	4.5	
Saturation Drain Current ^c	I_{DSS}	$V_{DS} = -15 V, V_{GS} = 0 V$		-2	-15	-6	-50	mA
Gate Reverse Current	I_{GSS}	$V_{GS} = 20 V, V_{DS} = 0 V$	10		200		200	pA
		$T_A = 125^\circ C$	5					nA
Gate Operating Current	I_G	$V_{DG} = -15 V, I_D = -1 mA$	10					pA
Drain Cutoff Current	$I_{D(off)}$	$V_{DS} = -15 V, V_{GS} = 10 V$	-10					
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}	$V_{DS} = -15 V, V_{GS} = 0 V$ $f = 1 kHz$		6	15	8	18	mS
Common-Source Output Conductance	g_{os}				200		500	μS
Common-Source Input Capacitance	C_{iss}	$V_{DS} = -15 V, V_{GS} = 0 V$ $f = 1 MHz$	20					pF
Common-Source Reverse Transfer Capacitance	C_{rss}		4					
Equivalent Input Noise Voltage	\bar{e}_n	$V_{DG} = -10 V, V_{GS} = 0 V$ $f = 1 kHz$	20					nV/ \sqrt{Hz}

Notes

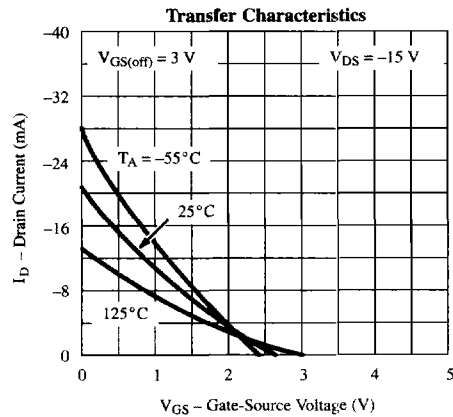
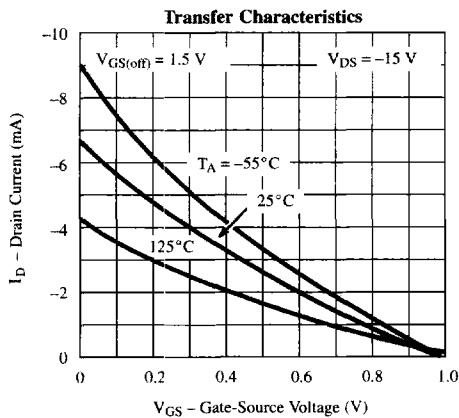
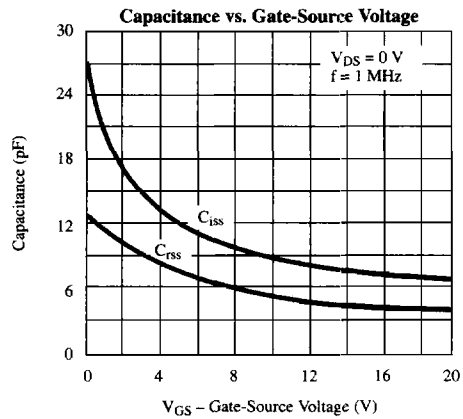
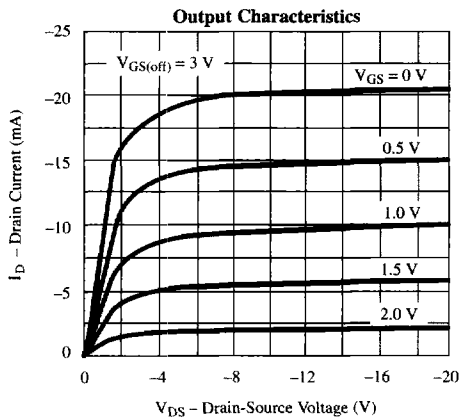
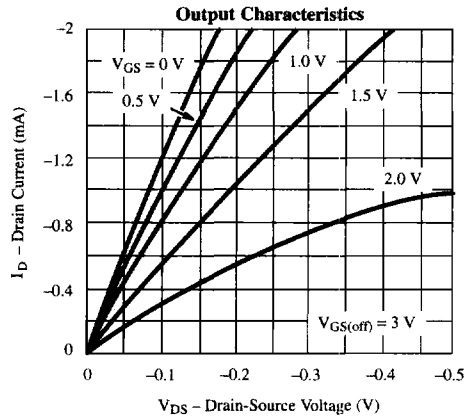
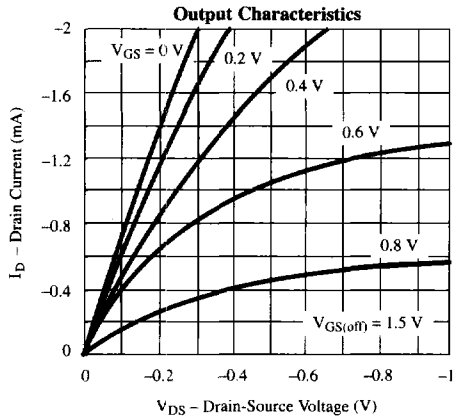
- $T_A = 25^\circ C$ unless otherwise noted.
- Typical values are for DESIGN AID ONLY, not guaranteed nor subject to production testing.
- Pulse test: $PW \leq 300 \mu s$ duty cycle $\leq 3\%$.

PSCIA

Typical Characteristics



Typical Characteristics (Cont'd)



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Typical Characteristics (Cont'd)

