



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

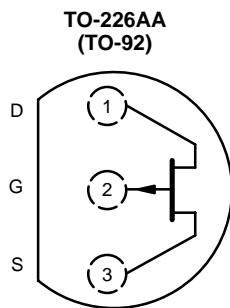
- High-Gain, Low-Noise Amplifiers
- Low-Current, Low-Voltage Battery Amplifiers
- Ultrahigh Input Impedance Pre-Amplifiers
- High-Side Switching

DESCRIPTION

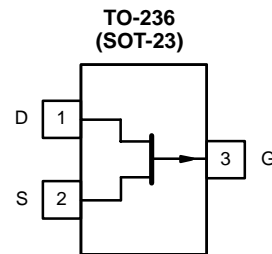
The J/SST270 series consists of all-purpose amplifiers for designs requiring p-channel operation.

The TO-226AA (TO-92) plastic package provides a low-cost option, while the 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
J270
J271



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

ABSOLUTE MAXIMUM RATINGS

| | |
|--------------------------------|--------------|
| Gate-Drain Voltage | 30 V |
| Gate-Source Voltage | 30 V |
| Gate Current | -50 mA |
| Storage Temperature | -55 to 150°C |
| Operating Junction Temperature | -55 to 150°C |

| | |
|--|--------|
| Lead Temperature (¹ / ₁₆ " from case for 10 sec.) | 300°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)

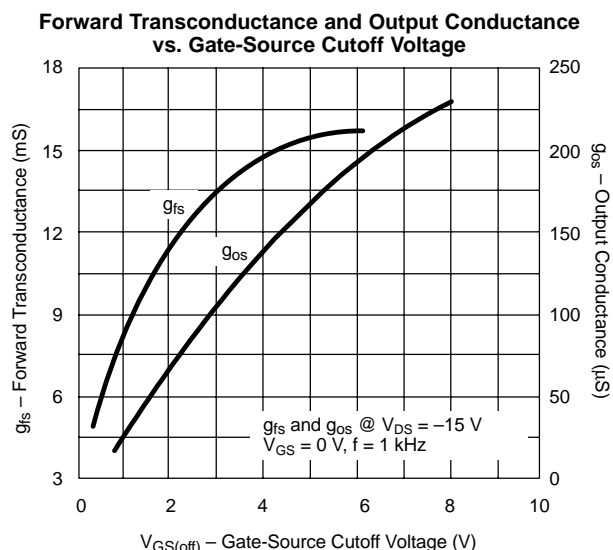
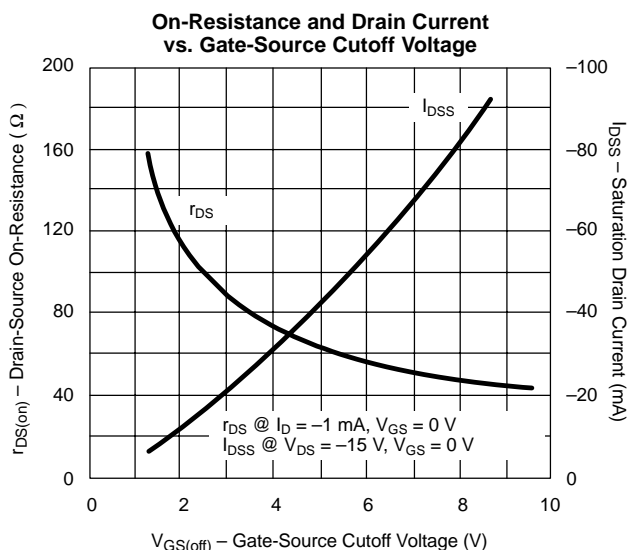
| Parameter | Symbol | Test Conditions | Typ ^a | Limits | | | | Unit |
|--|---------------|--|------------------|----------|-----|----------|-----|---------------------------|
| | | | | J/SST270 | | J/SST271 | | |
| | | | | Min | Max | Min | Max | |
| Static | | | | | | | | |
| Gate-Source Breakdown Voltage | $V_{(BR)GSS}$ | $I_G = 1\ \mu\text{A}$, $V_{DS} = 0\ \text{V}$ | 45 | 30 | | 30 | | V |
| Gate-Source Cutoff Voltage | $V_{GS(off)}$ | $V_{DS} = -15\ \text{V}$, $I_D = -1\ \text{nA}$ | | 0.5 | 2.0 | 1.5 | 4.5 | V |
| Saturation Drain Current ^b | I_{DSS} | $V_{DS} = -15\ \text{V}$, $V_{GS} = 0\ \text{V}$ | | -2 | -15 | -6 | -50 | mA |
| Gate Reverse Current | I_{GSS} | $V_{GS} = 20\ \text{V}$, $V_{DS} = 0\ \text{V}$ | 10 | | 200 | | 200 | pA |
| | | $T_A = 125^\circ\text{C}$ | 5 | | | | | nA |
| Gate Operating Current | I_G | $V_{DG} = -15\ \text{V}$, $I_D = -1\ \text{mA}$ | 10 | | | | | pA |
| Drain Cutoff Current | $I_{D(off)}$ | $V_{DS} = -15\ \text{V}$, $V_{GS} = 10\ \text{V}$ | -10 | | | | | pA |
| Gate-Source Forward Voltage | $V_{GS(F)}$ | $I_G = -1\ \text{mA}$, $V_{DS} = 0\ \text{V}$ | -0.7 | | | | | V |
| Dynamic | | | | | | | | |
| Common-Source Forward Transconductance | g_{fs} | $V_{DS} = -15\ \text{V}$, $V_{GS} = 0\ \text{V}$ $f = 1\ \text{kHz}$ | | 6 | 15 | 8 | 18 | mS |
| Common-Source Output Conductance | g_{os} | | | | | 200 | | 500 |
| Common-Source Input Capacitance | C_{iss} | $V_{DS} = -15\ \text{V}$, $V_{GS} = 0\ \text{V}$ $f = 1\ \text{MHz}$ | 20 | | | | | pF |
| Common-Source Reverse Transfer Capacitance | C_{rss} | | 4 | | | | | |
| Equivalent Input Noise Voltage | \bar{e}_n | $V_{DG} = -10\ \text{V}$, $V_{GS} = 0\ \text{V}$ $f = 1\ \text{kHz}$ | 20 | | | | | nV/ $\sqrt{\text{Hz}}$ |

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 $\leq 3\%$.

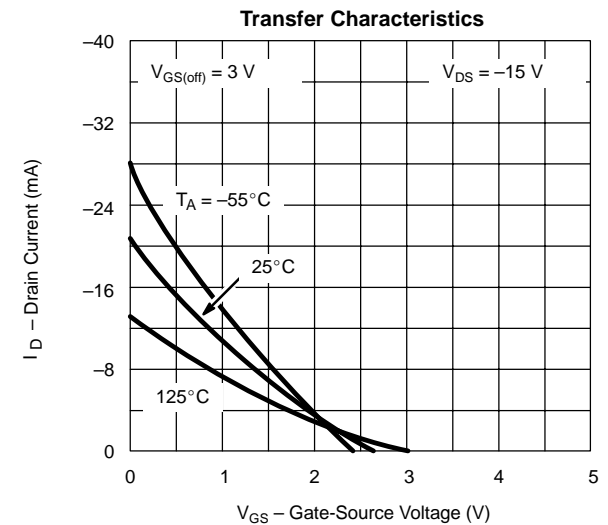
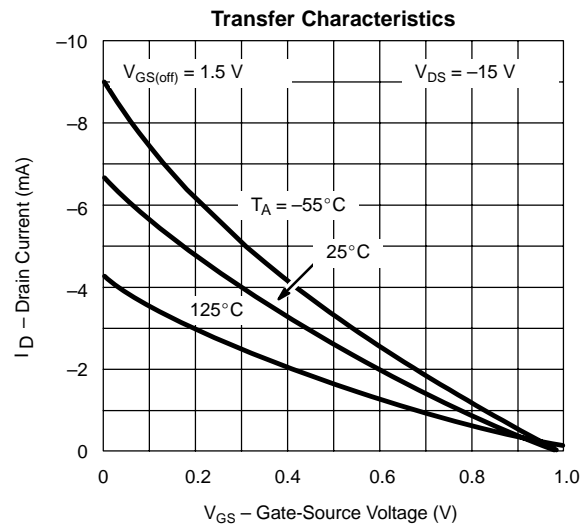
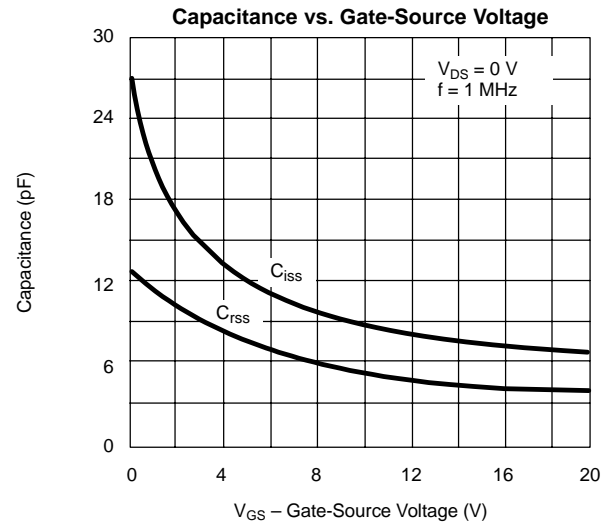
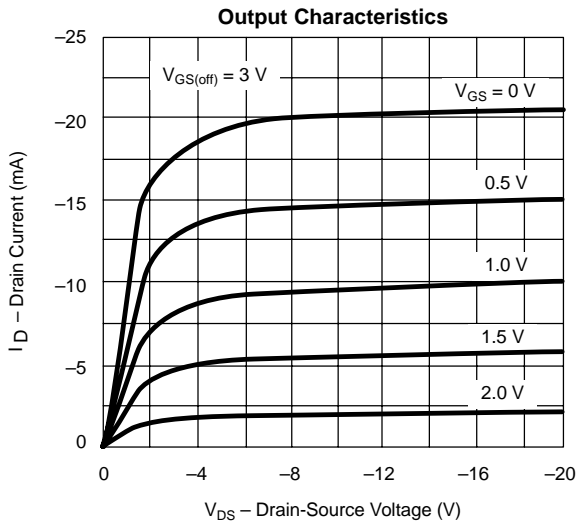
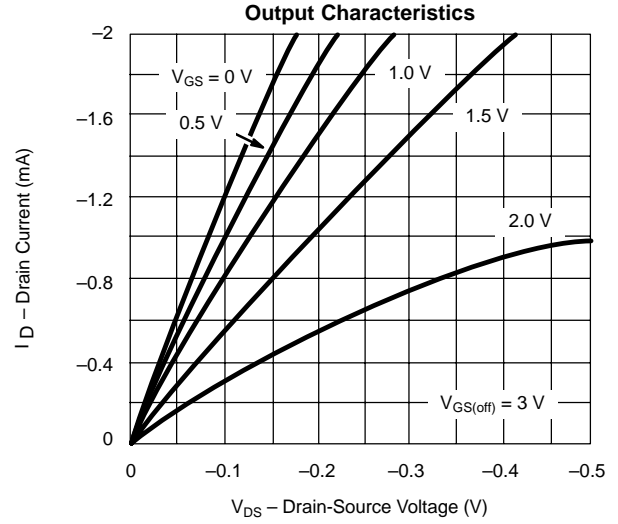
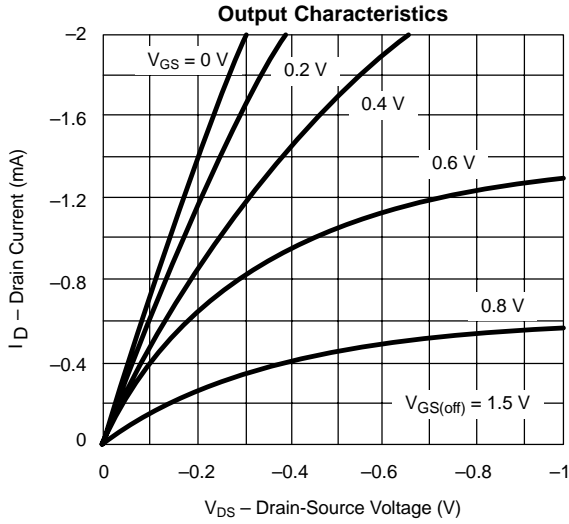
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TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ UNLESS OTHERWISE NOTED)

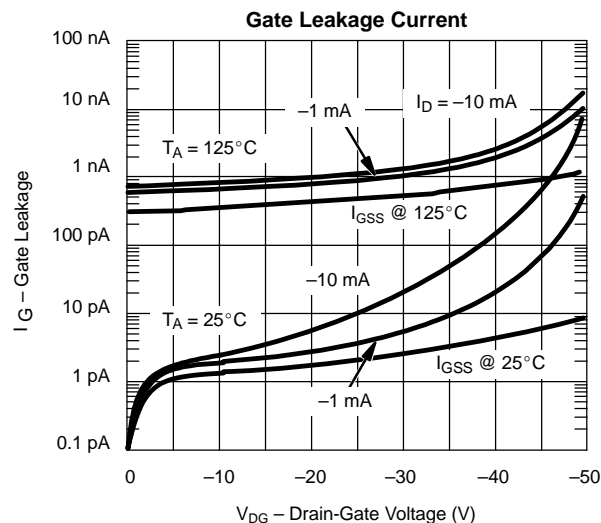
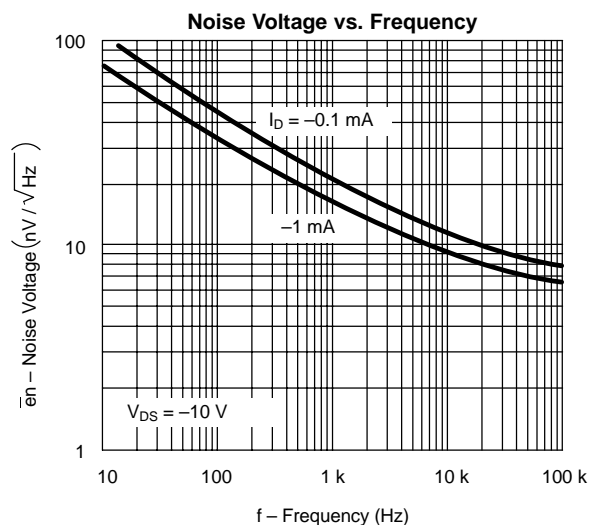
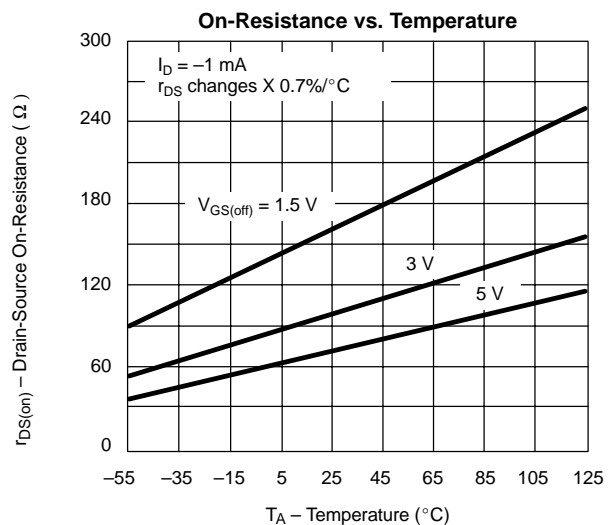
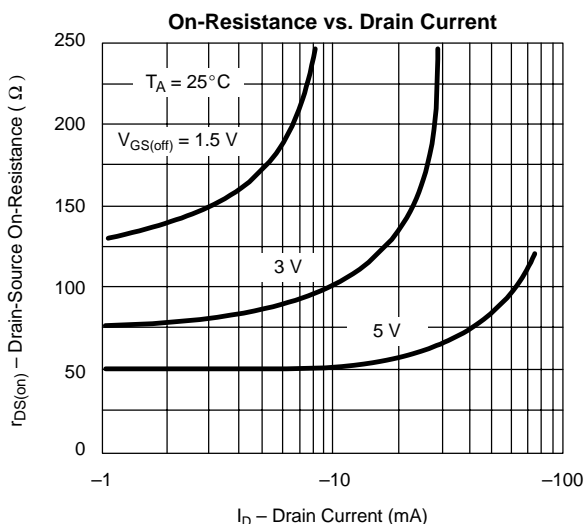
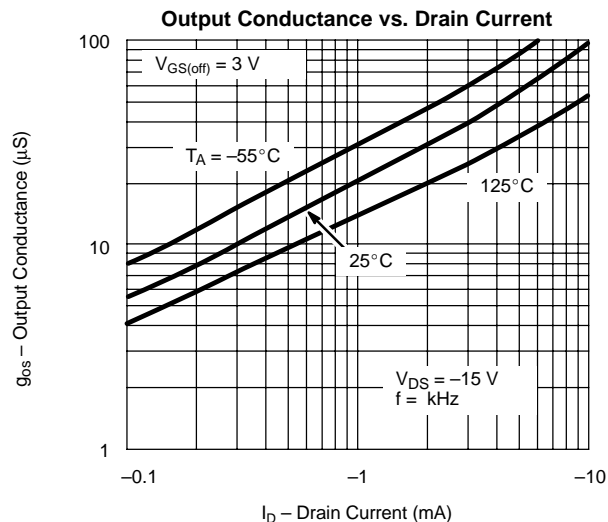
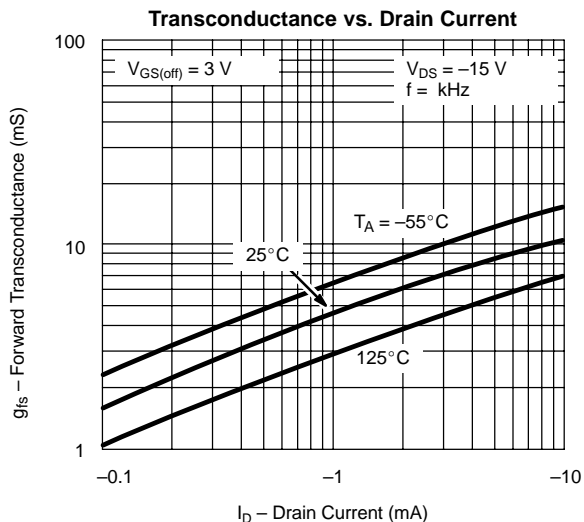




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