



n-channel JFETs designed for . . .

■ General Purpose Amplifiers

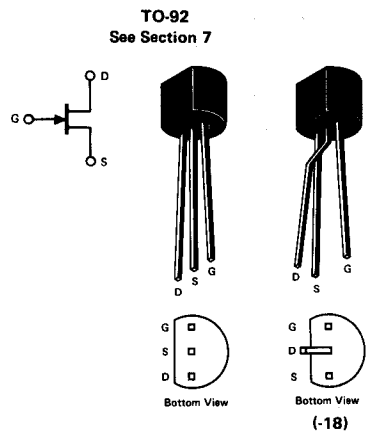
Performance Curves NP
See Section 5

BENEFITS

- High Input Impedance
 $I_G = 35 \mu\text{A Typical}$
- Good for Low Power Supply Operation
 $V_{GS(off)} < 1.5 \text{ V (J201)}$

ABSOLUTE MAXIMUM RATINGS (25°C)

| | | |
|---|-------|--------------|
| Gate-Drain or Gate-Source Voltage (Note 1) | | -40 V |
| Gate Current | | 50 mA |
| Total Device Dissipation at 25°C Ambient (Derate 3.27 mW/°C) | | 360 mW |
| Operating Temperature Range | | -55 to 135°C |
| Storage Temperature Range | | -55 to 150°C |
| Lead Temperature Range (1/16" from case for 10 seconds) | | 300°C |

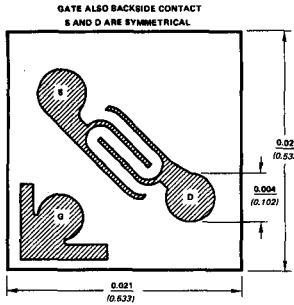


ELECTRICAL CHARACTERISTICS (25°C unless otherwise noted)

| Characteristic | J201 | | | J202 | | | J203 | | | Unit | Test Conditions |
|---|------|-----|------|-------|-----|------|-------|-----|-------|------------------------|---|
| | Min | Typ | Max | Min | Typ | Max | Min | Typ | Max | | |
| 1 I_{GSS} Gate Reverse Current (Note 2) | | | -100 | | | -100 | | | -100 | pA | $V_{DS} = 0, V_{GS} = -20 \text{ V}$ |
| 2 $V_{GS(off)}$ Gate-Source Cutoff Voltage | -0.3 | | -1.5 | -0.8 | | -4.0 | -2.0 | | -10.0 | V | $V_{DS} = 20 \text{ V}, I_D = 10 \text{ nA}$ |
| 3 BV_{GSS} Gate-Source Breakdown Voltage | -40 | | | -40 | | | -40 | | | | $V_{DS} = 0, I_G = -1 \mu\text{A}$ |
| 4 I_{DSS} Saturation Drain Current (Note 3) | 0.2 | | 1.0 | 0.9 | | 4.5 | 4.0 | | 20 | mA | $V_{DS} = 20 \text{ V}, V_{GS} = 0$ |
| 5 I_G Gate Current (Note 2) | | -35 | | | -35 | | | -35 | | pA | $V_{DG} = 20 \text{ V}, I_D = I_{DSS(min)}$ |
| 6 g_{fs} Common-Source Forward Transconductance (Note 3) | 500 | | | 1,000 | | | 1,500 | | | μmho | $V_{DS} = 20 \text{ V}, V_{GS} = 0$ |
| 7 g_{os} Common-Source Output Conductance | | 1 | | | 3.5 | | | 10 | | | |
| 8 C_{iss} Common-Source Input Capacitance | | 4 | | | 4 | | | 4 | | pF | f = 1 MHz |
| 9 C_{rss} Common-Source Reverse Transfer Capacitance | | 1 | | | 1 | | | 1 | | | |
| 10 \bar{e}_n Equivalent Short-Circuit Input Noise Voltage | | 5 | | | 5 | | | 5 | | $\frac{nV}{\sqrt{Hz}}$ | $V_{DS} = 10 \text{ V}, V_{GS} = 0$ f = 1 kHz |

- NOTES:**
1. Geometry is symmetrical. Units may be operated with source and drain leads interchanged.
 2. Approximately doubles for every 10°C increase in T_A .
 3. Pulse test duration = 2 ms.

NP



ALL DIMENSIONS IN INCHES
(ALL DIMENSIONS IN MILLIMETERS)

n-channel JFET designed for . . .

- Small Signal Amplifiers
- Choppers
- Voltage-Controlled Resistors



BENEFITS:

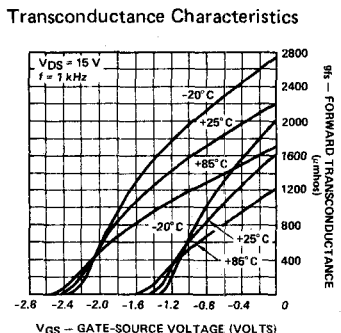
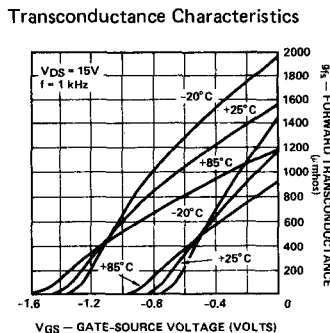
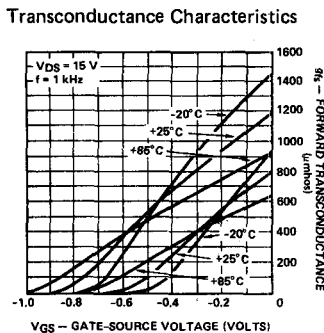
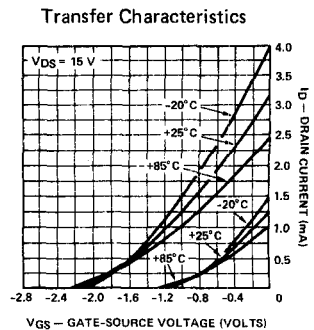
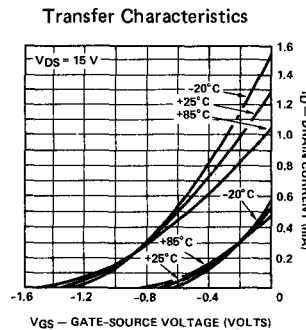
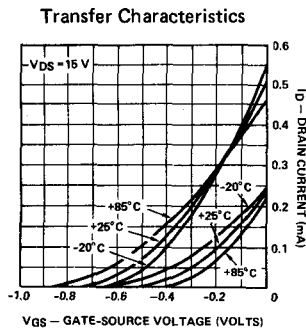
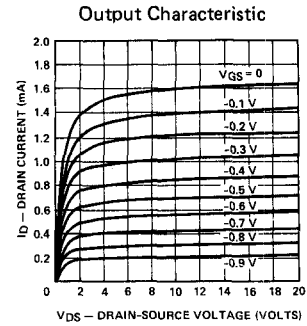
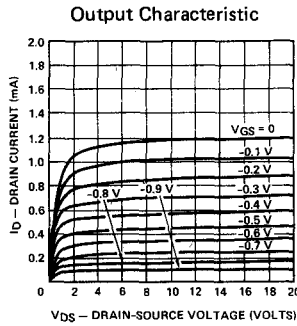
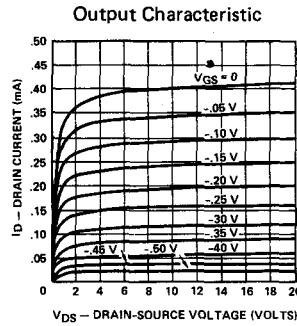
- Low Noise NF < 1 dB at 1 kHz
- Operation From Low Power Supply Voltages, $V_{GS(off)} < 1 V$ (2N4338)
- High Off-Isolation As a Switch $I_{D(off)} < 50 pA$
- High Input Impedance

PRINCIPAL DEVICES

- 2N3368-70, 2N3436-8, 2N3458-60, 2N4338-41, VCR4N
2N5196-9, U231-5, 2N5545-47
J201-203, J204, PN4302-04
J201-18 - 203-18, J204-18,
All of the above
PN4302-18 - 4304-18

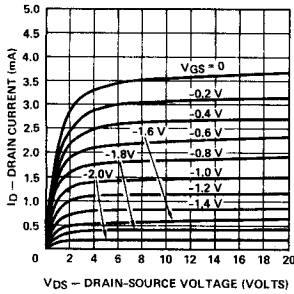
| TYPE | PACKAGE |
|--------|-----------------|
| Single | TO-18 |
| Dual | TO-71 |
| Single | TO-92 |
| Single | TO-92 Lead-form |
| Single | Chip |

PERFORMANCE CURVES (25°C unless otherwise noted)

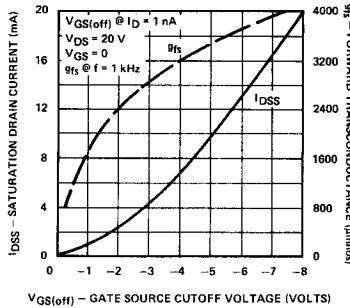


PERFORMANCE CURVES (Cont'd) (25°C unless otherwise noted)

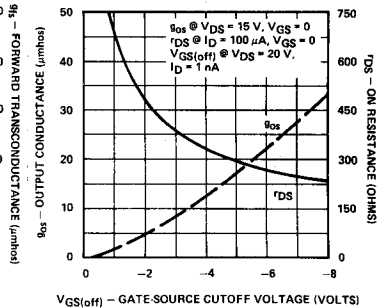
Output Characteristic



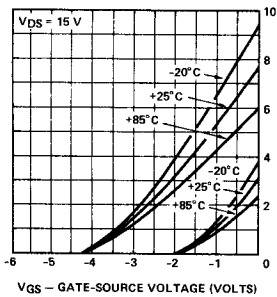
Drain Current and Transconductance vs Gate-Source Cutoff Voltage



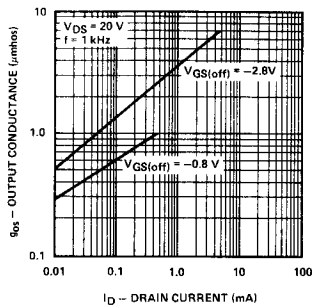
ON Resistance & Output Conductance vs Gate-Source Cutoff Voltage



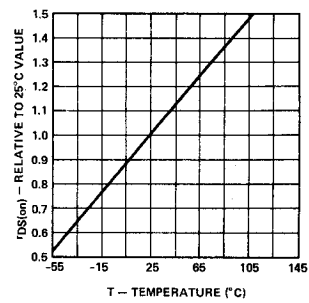
Transfer Characteristics



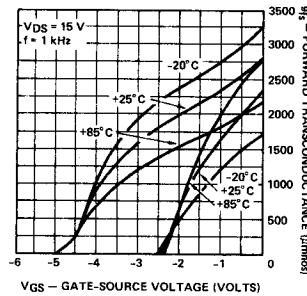
Common-Source Output Conductance vs Drain Current



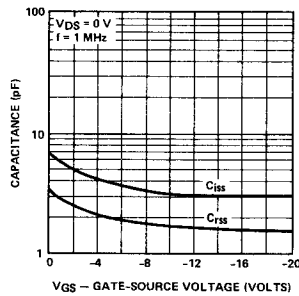
ON Resistance vs Ambient Temperature



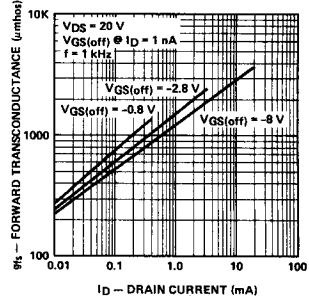
Transconductance Characteristics



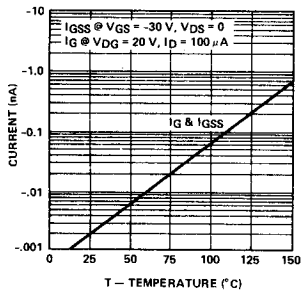
Common-Source Capacitances vs Gate-Source Voltage



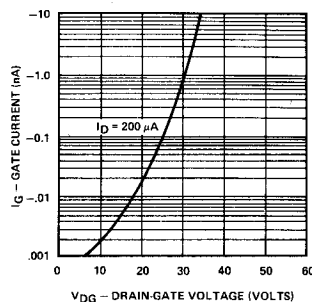
Common-Source Forward Transconductance vs Drain Current



Gate Currents vs Ambient Temperature



Gate Operating Current vs Drain-Gate Voltage



Equivalent Input Noise Voltage and Noise Current vs Frequency

