**2N/PN/SST4117A Series**

**Siliconix**

**N-Channel JFETs**

<table>
<thead>
<tr>
<th>Part Number</th>
<th>V(Drain) (V)</th>
<th>V(BR) = 1mA (V)</th>
<th>g_m (mS)</th>
<th>Ioss (mA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>4N4117A</td>
<td>40</td>
<td>-0.6 to -1.8</td>
<td>70</td>
<td>30</td>
</tr>
<tr>
<td>4N4118A</td>
<td>-3</td>
<td>-1 to -3</td>
<td>80</td>
<td>80</td>
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<tr>
<td>2N4119A</td>
<td>-6</td>
<td>-2 to -6</td>
<td>100</td>
<td>200</td>
</tr>
</tbody>
</table>

PN95ST4119A. For applications information see AN105, page 12-22.

**Features**
- Ultra-Low Leakage: 0.2 pA
- Very Low-Cap/Optical Operation
- Ultralow Input Impedance
- Low Noise

**Benefits**
- Insensitive Signal Leakage Voltage with High-impedance Source
- Low Power Consumption (Bias)
- Maximum Signal Output, Low Noise
- High Sensitivity to Low-Level Signals

**Applications**
- High-impedance Transducer Amplifiers
- Smoke Detector Input
- Infared Detetector Amplifier
- Precision Test Equipment

**Description**

The 2N/PN/SST4117A series of n-channel JFETs provide ultra-high input impedance. These devices are specified with a 1-pA limit and typically operate at 0.2 pA. This makes them perfect choices for use as high-impedance sensitive front-end amplifiers.

The hermetically sealed TO-266AF package allows full military processing per MIL-S-19500 (see Military Information). The TO-226A (TO-92) plastic package provides a low-cost option. The TO-239 (SOT-23) package provides surface-mount capability. Both the PN and SST series are available in tape-and-reel for automated assembly (see Packaging Information).

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**Specifications**

**Absolute Maximum Ratings**

- Gate-Source/Case Drain Voltage: 40V
- Forward Drain Current: 50 mA
- Source Temperature: 25°C
- Power Dissipation: 300 mW

**Operating Conditions**

- Operating Temperature: PN (PNST, SST) -55 to 125°C
- Operating Temperature: SST -55 to 130°C

**Specifications**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Symbol</th>
<th>Test Conditions</th>
<th>Typ</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
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<td>PN95ST4119A</td>
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</tbody>
</table>

**Notes**

- a) PNST 25°C unless otherwise stated.
- b) Typical values are for DEVICES AND ONLY, not guaranteed nor subject to production testing.
- c) This parameter not registered with JEDEC.
2N/PN/SST4117A Series

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Typical Characteristics

Drain Current and Transconductance vs. Gate-Source Cutoff Voltage

Gate Leakage Current

On-Resistance and Output Conductance vs. Gate-Source Cutoff Voltage

Common-Source Forward Transconductance vs. Drain Current

Transfer Characteristics

Transconductance vs. Gate-Source Voltage

Output Characteristics

Common-Source Input Capacitance vs. Gate-Source Voltage

Circuit Voltage Gain vs. Drain Current

Typical Characteristics (Cont'd)

Transfer Characteristics

Transconductance vs. Gate-Source Voltage

Common-Source Input Capacitance vs. Gate-Source Voltage

Circuit Voltage Gain vs. Drain Current
2N/PN/SST4117A Series

Typical Characteristics (Cont'd)

Common-Source Reverse Feedback Capacitance vs Gate-Source Voltage

Equivalent Input Noise Voltage vs. Frequency

Output Conductance vs. Drain Current

On-Resistance vs. Drain Current

Product Summary

Part Number
- 2N4338
- 2N4339
- 2N4340
- 2N4341

Features
- Low Cutoff Voltage
- High Input Impedance
- Very Low Noise
- High Gain: Av = 8

Description

The 2N4338A/4339/4340/4341 series are designed for use in low-level power supplies, offering a combination of high gain, low noise, and low current consumption.

Absolute M

Gate-Source Drain-Source
Forward Gate Current
Storage Temperature
Operating Voltage

7.54

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