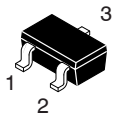
# N-Channel JFET

## 15 V, 10 to 32 mA, 35 mS

# NSVJ3557SA3

Automotive JFET designed for compact and efficient designs and including high gain performance. AEC−Q101 qualified JFET and PPAP capable suitable for automotive applications.




1: Source
2: Drain
3: Gate

**SC−59 / CP3**
**CASE 318BJ**

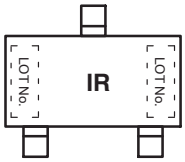
### Features

- Large | yfs |
- Small Ciss
- This Small Package Enables Sets to be Smaller and Thinner
- Ultralow Noise Figure
- This Device is Pb−Free and RoHS Compliant
- AEC−Q101 Qualified and PPAP Capable

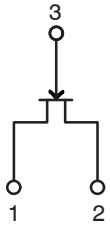
### Applications

- AM Tuner RF Amplification, Low Noise Amplifier
- Low Noise Amplifier

### MARKING DIAGRAM




### ELECTRICAL CONNECTION




1: Source
2: Drain
3: Gate

### ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 4 of this data sheet.

### SPECIFICATIONS ABSOLUTE MAXIMUM RATINGS ($T_A$ = 25°C)

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_{DSX}$ | Drain−to−Source Voltage | 15 | V |
| $V_{GDS}$ | Gate−to−Drain Voltage | −15 | V |
| $I_G$ | Gate Current | 10 | mA |
| $I_D$ | Drain Current | 50 | mA |
| $P_D$ | Allowable Power Dissipation | 200 | mW |
| $T_j$, $T_{stg}$ | Operating Junction and Storage Temperature | −55 to +150 | °C |

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

### ELECTRICAL CHARACTERISTICS ($T_A$ = 25°C)

| Symbol | Parameter | Conditions | Value | | | Unit |
|---|---|---|---|---|---|---|
| | | | Min | Typ | Max | |
| $V_{(BR)GDS}$ | Gate−to−Drain Breakdown Voltage | $I_G$ = −10 μA, $V_{DS}$ = 0 V | −15 | – | – | V |
| $I_{GSS}$ | Gate Cutoff Current | $V_{GS}$= −10 V, $V_{DS}$ = 0 V | – | – | −1 | nA |
| $V_{GS(off)}$ | Cutoff Voltage | $V_{DS}$ = 5 V, $I_D$ = 100 μA | −0.3 | −0.7 | −1.5 | V |
| $I_{DSS}$ | Drain Current | $V_{DS}$= 5 V, $V_{GS}$ = 0 V | 10 | – | 32 | mA |
| \| yfs \| | Forward Transfer Admittance | $V_{DS}$ = 5 V, $V_{GS}$ = 0 V, f = 1 kHz | 24 | 35 | – | mS |
| $C_{iss}$ | Input Capacitance | $V_{DS}$ = 5 V, $V_{GS}$ = 0 V, f = 1 MHz | – | 10 | – | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | | – | 2.9 | – | pF |
| NF | Noise Figure | $V_{DS}$ = 5 V, $R_g$ = 1 kΩ, $I_D$ = 1 mA, f = 1 kHz | – | 1 | – | dB |

Product parametric performance is indicated in the Electrical Characteristics for the listed test conditions, unless otherwise noted. Product performance may not be indicated by the Electrical Characteristics if operated under different conditions.

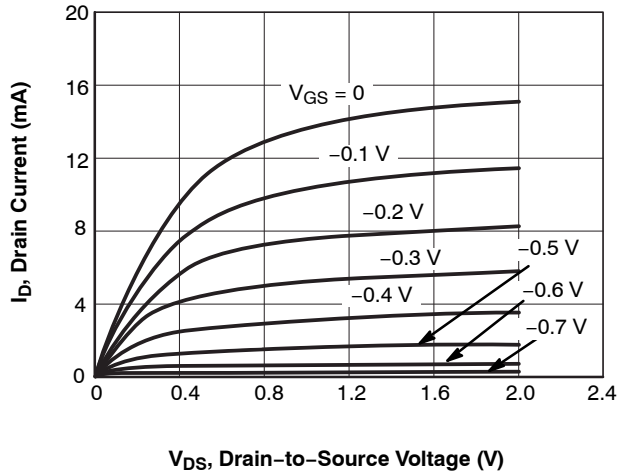



Figure 1. $I_D$ – $V_{DS}$

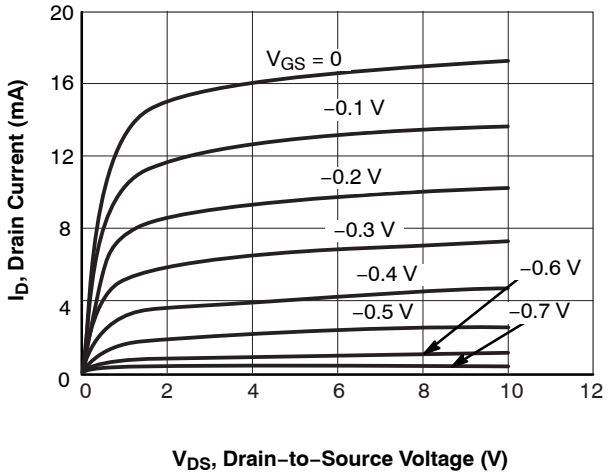



Figure 2. $I_D$ – $V_{DS}$

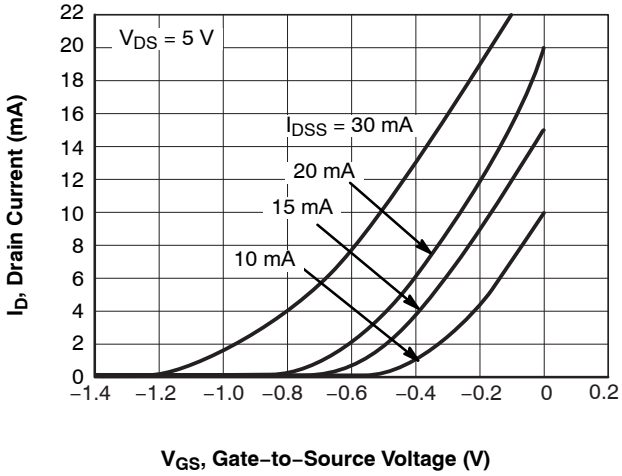



Figure 3. $I_D$ – $V_{GS}$

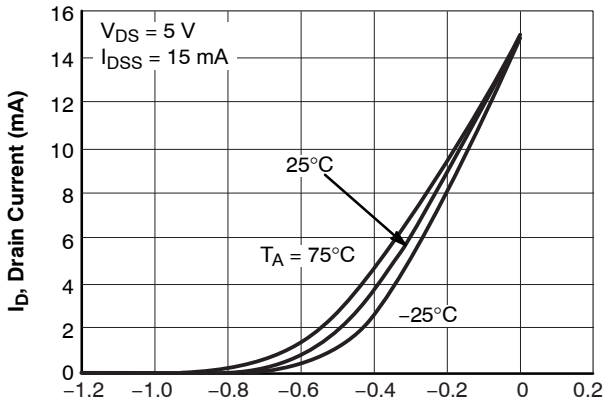



Figure 4. $I_D$ – $V_{GS}$

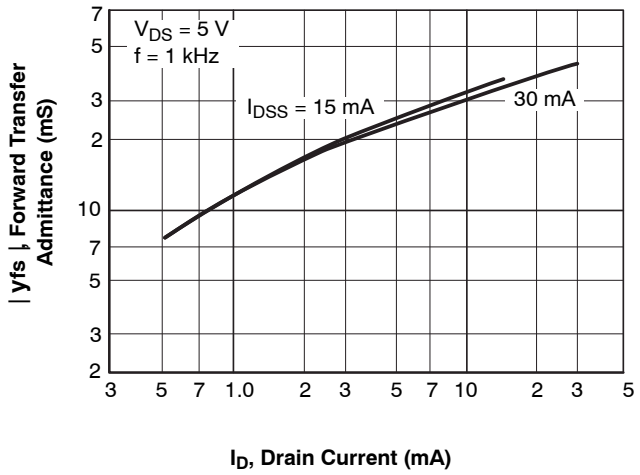



Figure 5. | yfs | – $I_D$

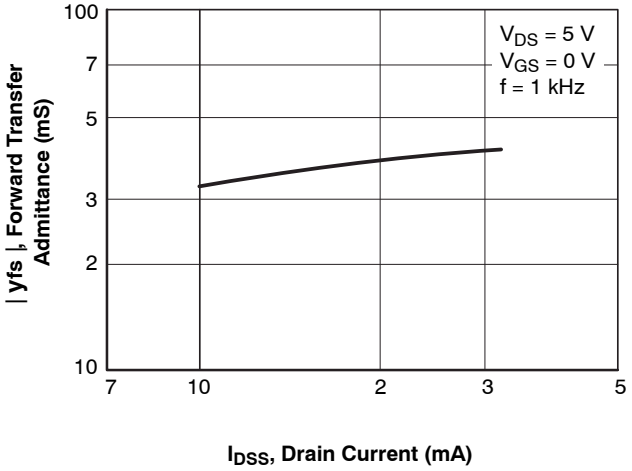



Figure 6. | yfs | – $I_{DSS}$

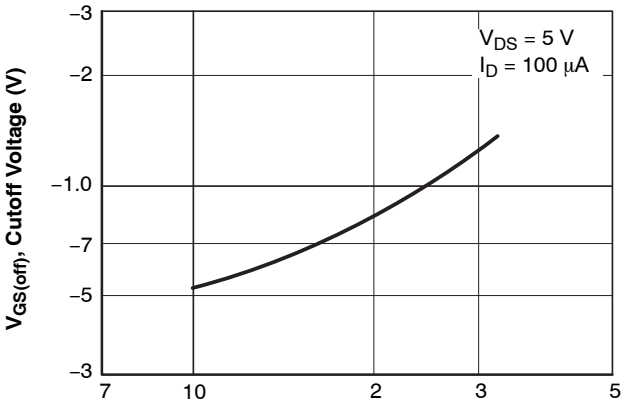



Figure 7. $V_{GS}(off)$ – $I_{DSS}$

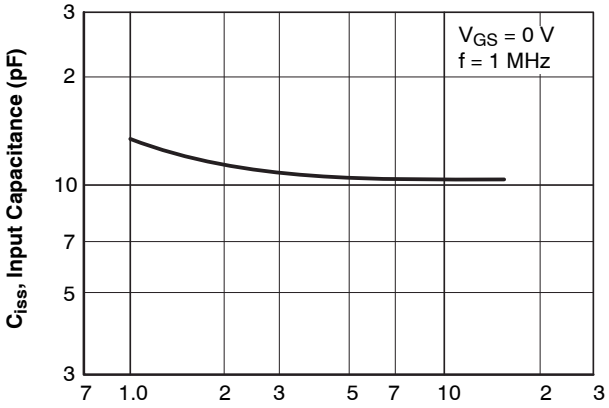



Figure 8. $C_{iss}$ – $V_{DS}$

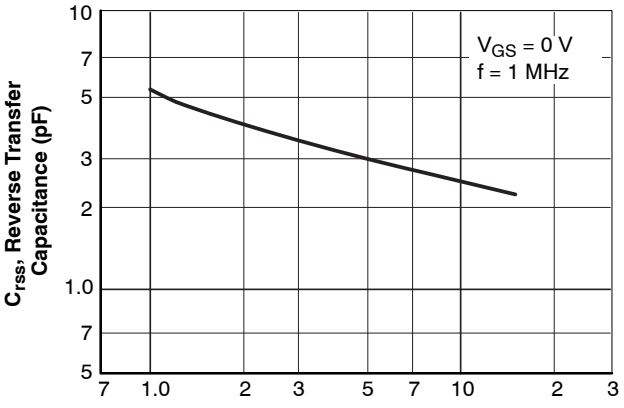



Figure 9. $C_{rss}$ – $V_{DS}$

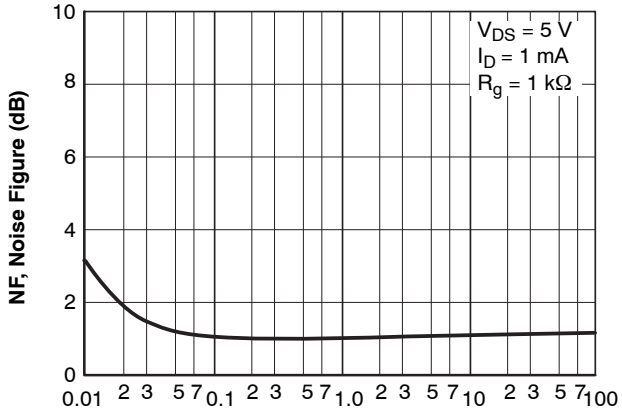



Figure 10. NF – f

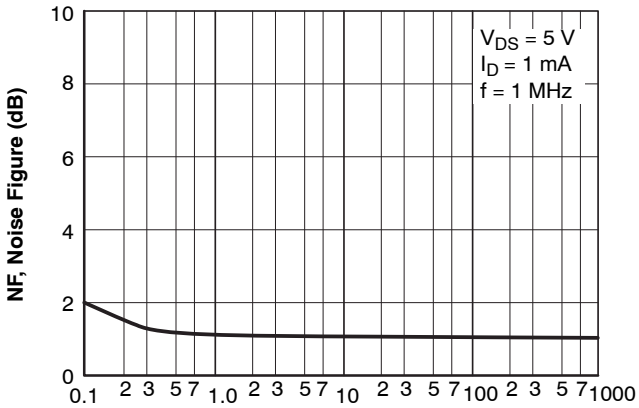



Figure 11. NF – $R_g$

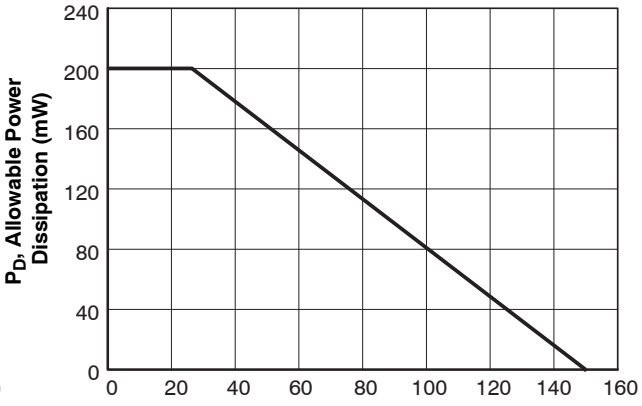



Figure 12. $P_D$ – $T_A$

## ORDERING INFORMATION

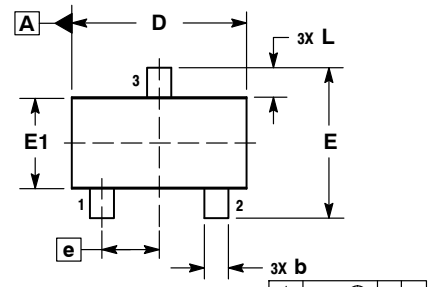
| Part Number | Marking | Package | Shipping† |
|---|---|---|---|
| NSVJ3557SA3T1G | IR | SC−59 3−Lead / CP3 (Pb−Free) | 3,000 Tape & Reel |

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

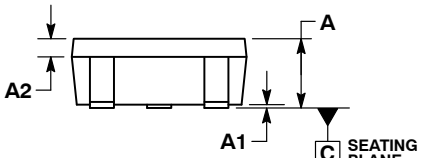
**SCALE 2:1**

**SC−59 / CP3**
CASE 318BJ
ISSUE O

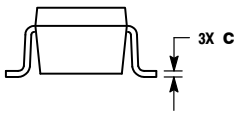
DATE 09 JAN 2015




TOP VIEW




SIDE VIEW

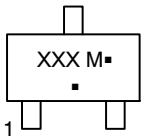



END VIEW

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 1994.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. DIMENSIONS D AND E1 DO NOT INCLUDE MOLD FLASH, PROTRUSIONS, OR GATE BURRS. MOLD FLASH, PROTRUSIONS, OR GATE BURRS SHALL NOT EXCEED 0.20 PER SIDE.
4. DIMENSIONS D AND E1 ARE MEASURED AT THE OUTERMOST EXTREME OF THE PLASTIC BODY.
5. DIMENSIONS b AND c APPLY TO THE FLAT SECTION OF THE LEAD BETWEEN 0.10 AND 0.20 FROM THE TIP.

| | MILLIMETERS | |
|---|---|---|
| DIM | MIN | MAX |
| A | 0.95 | 1.35 |
| A1 | 0.00 | 0.10 |
| A2 | 0.20 | 0.40 |
| b | 0.35 | 0.50 |
| c | 0.10 | 0.20 |
| D | 2.75 | 3.05 |
| E | 2.30 | 2.70 |
| E1 | 1.35 | 1.65 |
| e | 0.95 BSC | |
| L | 0.35 | 0.75 |

## GENERIC MARKING DIAGRAM

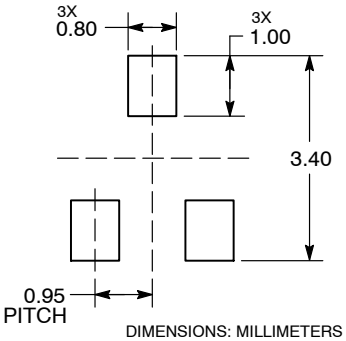



XXX = Specific Device Code
M = Date Code
▪ = Pb−Free Package

(Note: Microdot may be in either location)

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “ ▪”, may or may not be present.

## RECOMMENDED SOLDERING FOOTPRINT*




DIMENSIONS: MILLIMETERS

*For additional information on our Pb−Free strategy and soldering details, please download the **onsemi** Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

| | | | |
|---|---|---|---|
| **DOCUMENT NUMBER:** | **98AON94458F** | Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped “CONTROLLED COPY” in red. | |
| **DESCRIPTION:** | **SC−59 / CP3** | | **PAGE 1 OF 1** |

## ADDITIONAL INFORMATION

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