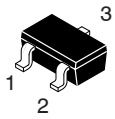
N-Channel JFET

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

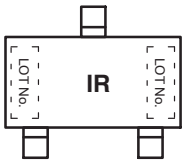
Features

- 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

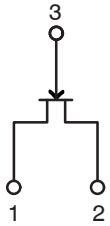
Applications

- 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.

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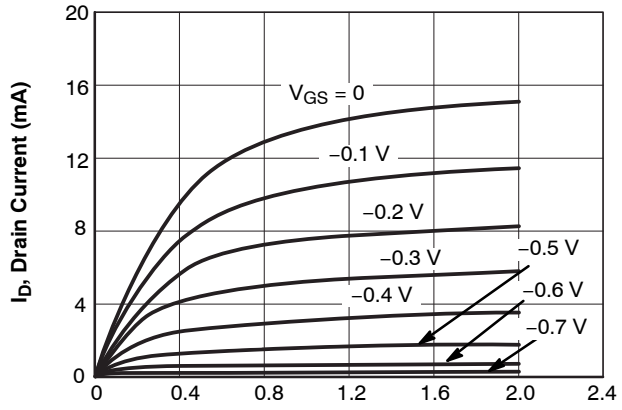

Figure 1. I_D – V_{DS}

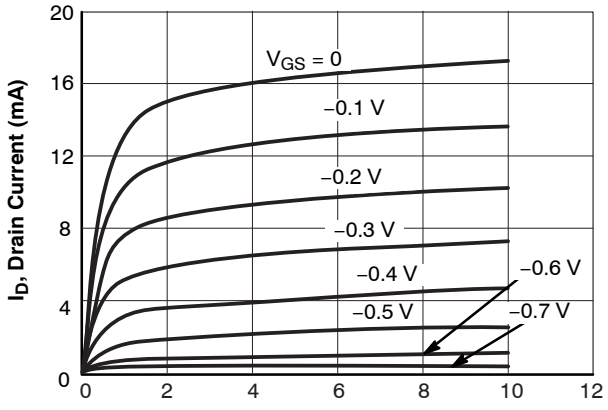

Figure 2. I_D – V_{DS}

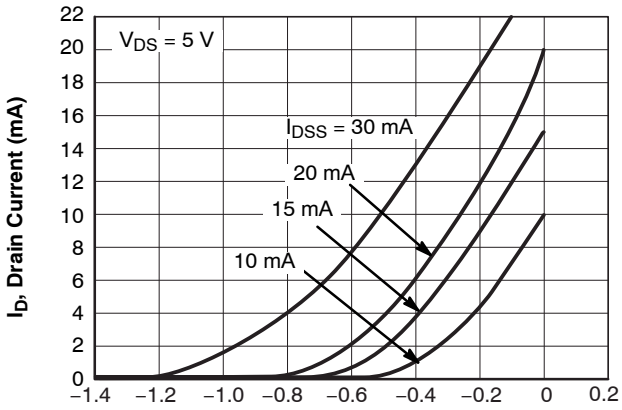

Figure 3. I_D – V_{GS}

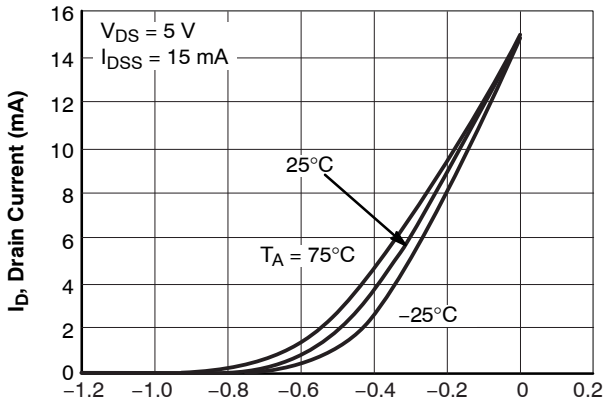

Figure 4. I_D – V_{GS}

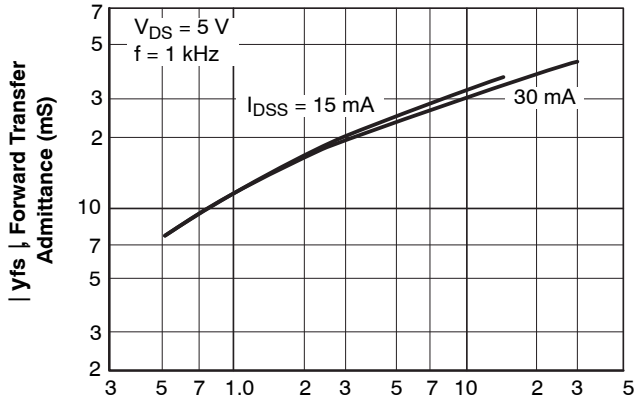

Figure 5. | yfs | – I_D

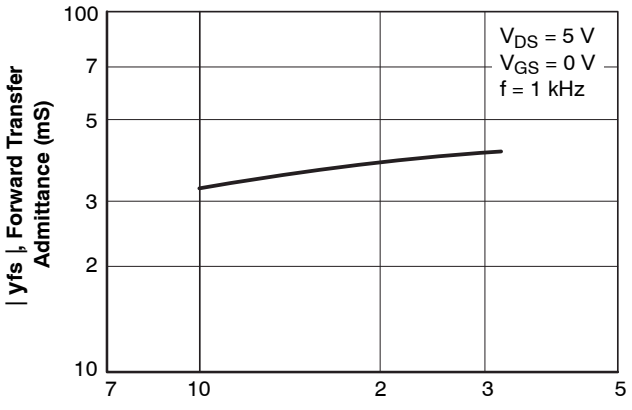

Figure 6. | yfs | – I_{DSS}

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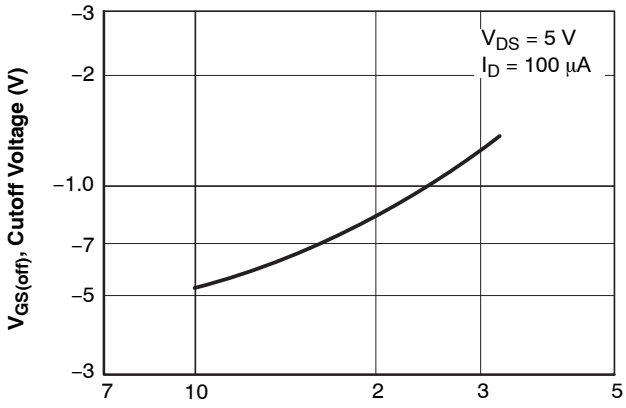

Figure 7. $V_{GS}(off)$ – I_{DSS}

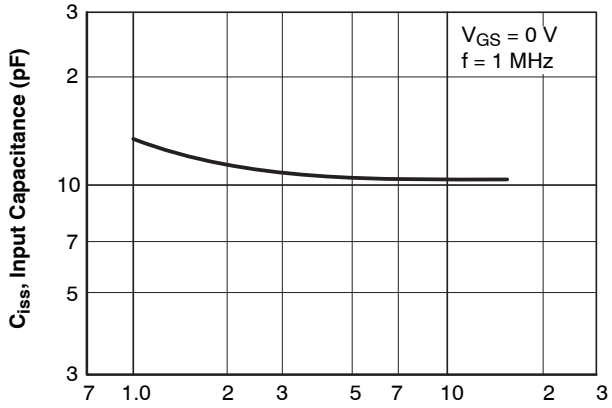

Figure 8. C_{iss} – V_{DS}

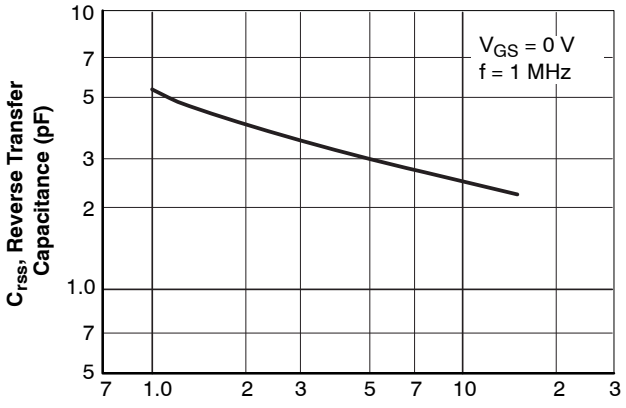

Figure 9. C_{rss} – V_{DS}

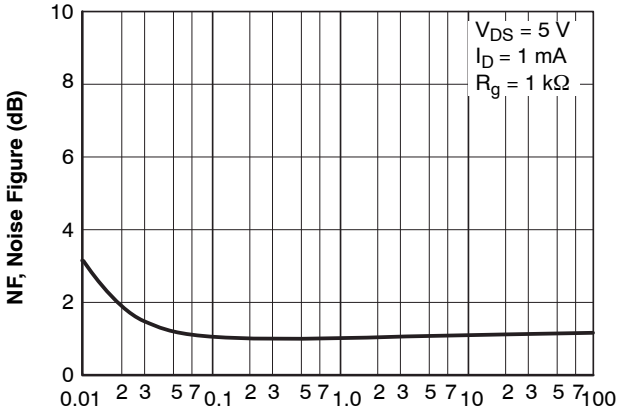

Figure 10. NF – f

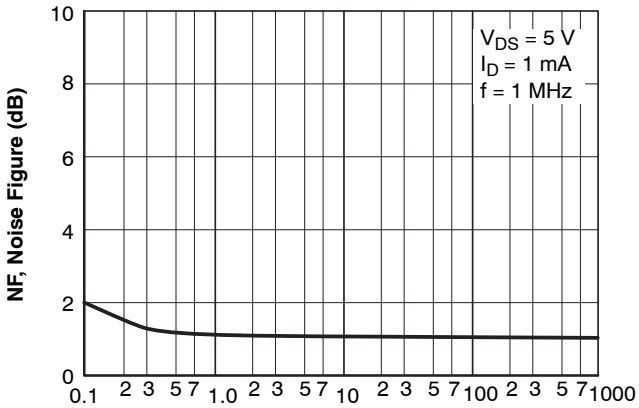

Figure 11. NF – R_g

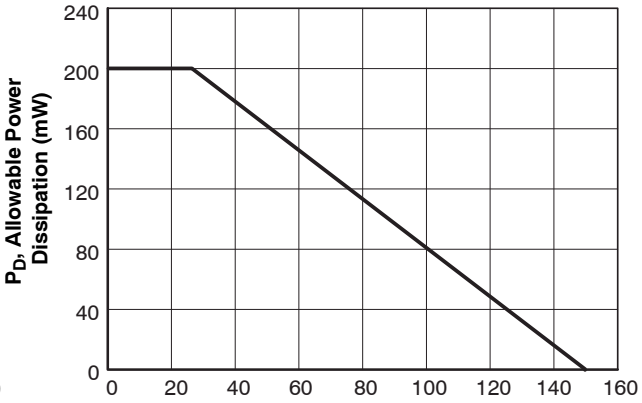

Figure 12. P_D – T_A

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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.

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SCALE 2:1

SC−59 / CP3
CASE 318BJ
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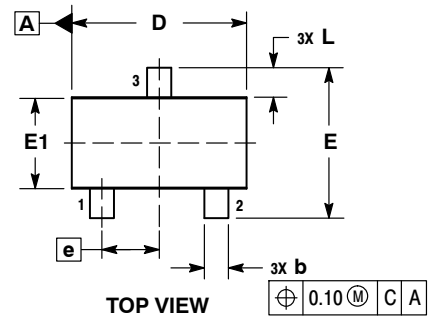
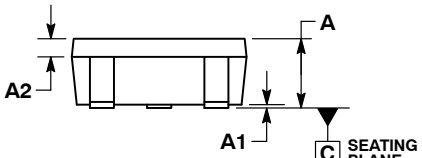
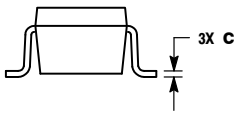


TOP VIEW



SIDE VIEW

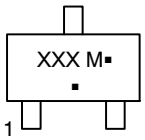


END VIEW

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

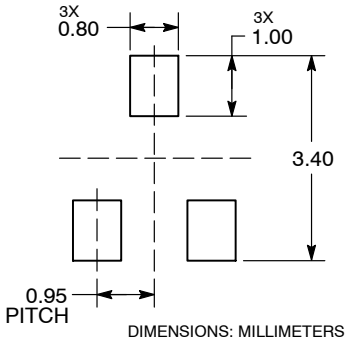


XXX = Specific Device Code
M = Date Code
▪ = Pb−Free Package

(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.

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