

# N-Channel JFET, -25 V, 20 to 40 mA, 40 mS

## NSVJ3910SB3

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

### Features

- High Forward Transfer Admittance
- High Breakdown Voltage
- Low Input Capacitance
- Low Noise Figure
- NSV Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable
- These Devices are Pb-Free and are RoHS Compliant

### Typical Applications

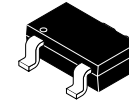
- Low Noise Amplifier for Automotive AM Radio

### Specifications

#### ABSOLUTE MAXIMUM RATINGS (at $T_A = 25^\circ\text{C}$ )

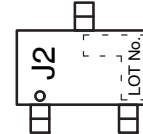
Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	$V_{DSX}$	25	V
Gate-to-Drain Voltage	$V_{GDS}$	-25	V
Gate Current	$I_G$	10	mA
Drain Current	$I_D$	50	mA
Allowable Power Dissipation	$P_D$	400	mW
Operating Junction and Storage Temperature	$T_J, T_{STG}$	-55 to +150	$^\circ\text{C}$

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.



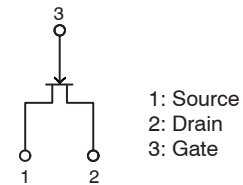
CPH3  
CASE 318BA

### MARKING DIAGRAM



J2 = Specific Device Code

### ELECTRICAL CONNECTION



N-Channel

### ORDERING INFORMATION

Device	Package	Shipping <sup>†</sup>
NSVJ3910SB3T1G	CPH3 (Pb-Free)	3000 / Tape & Reel

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

# NSVJ3910SB3

## ELECTRICAL CHARACTERISTICS (at $T_A = 25^\circ\text{C}$ )

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Gate-to-Drain Breakdown Voltage	$V_{(BR)GDS}$	$I_G = -10\ \mu\text{A}$ , $V_{DS} = 0\ \text{V}$	-25	-	-	V
Gate Cutoff Current	$I_{GSS}$	$V_{GS} = -10\ \text{V}$ , $V_{DS} = 0\ \text{V}$	-	-	-1.0	nA
Cutoff Voltage	$V_{GS(off)}$	$V_{DS} = 5\ \text{V}$ , $I_D = 100\ \mu\text{A}$	-0.6	-1.2	-1.8	V
Drain Current	$I_{DSS}$	$V_{DS} = 5\ \text{V}$ , $V_{GS} = 0\ \text{V}$	20	-	40	mA
Forward Transfer Admittance	$ y_{fs} $	$V_{DS} = 5\ \text{V}$ , $V_{GS} = 0\ \text{V}$ , $f = 1\ \text{kHz}$	30	40	-	mS
Input Capacitance	$C_{iss}$	$V_{DS} = 5\ \text{V}$ , $V_{GS} = 0\ \text{V}$ , $f = 1\ \text{MHz}$	-	6.0	-	pF
Reverse Transfer Capacitance	$C_{rss}$		-	2.3	-	pF
Noise Figure	NF	$V_{DS} = 5\ \text{V}$ , $V_{GS} = 0\ \text{V}$ , $f = 100\ \text{MHz}$	-	2.1	2.8	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.

TYPICAL CHARACTERISTICS

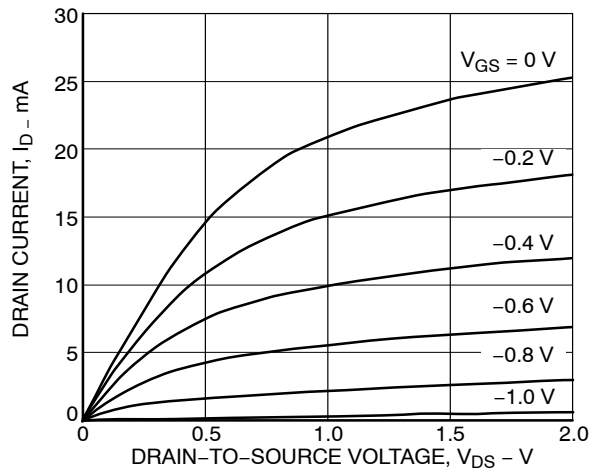


Figure 1.  $I_D - V_{DS}$

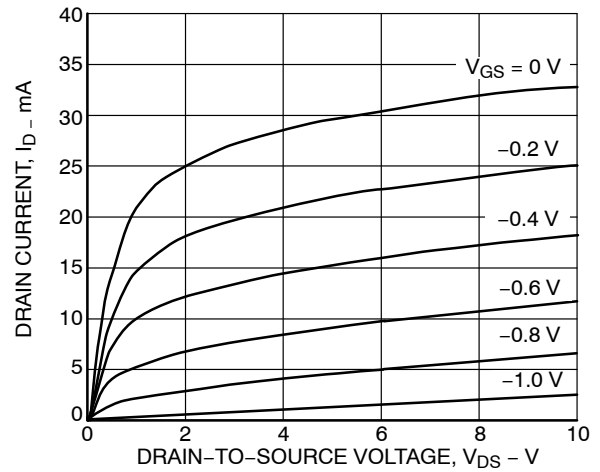


Figure 2.  $I_D - V_{DS}$

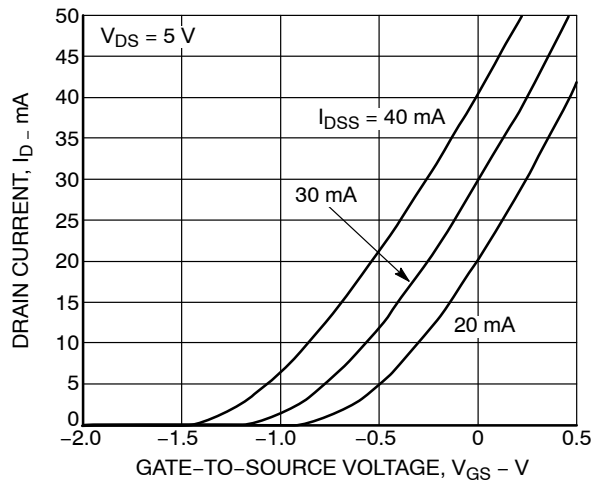


Figure 3.  $I_D - V_{GS}$

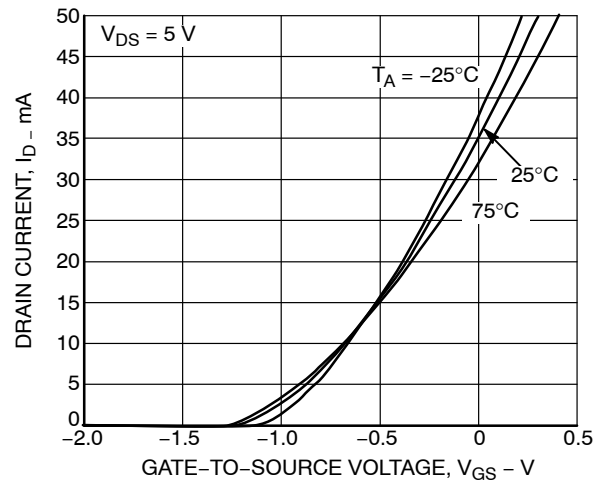


Figure 4.  $I_D - V_{GS}$

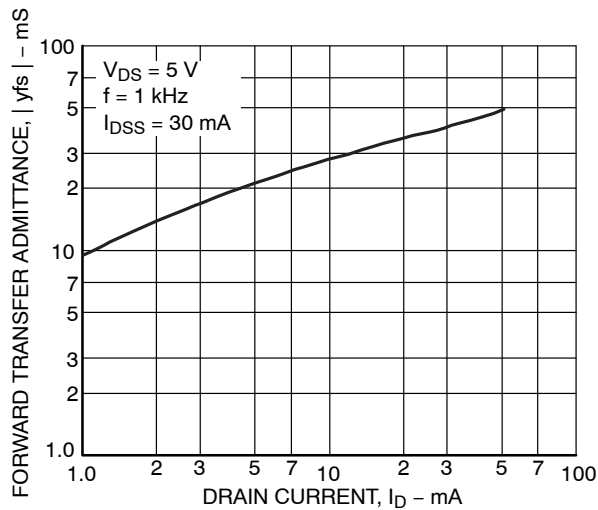


Figure 5.  $|y_{fs}| - I_D$

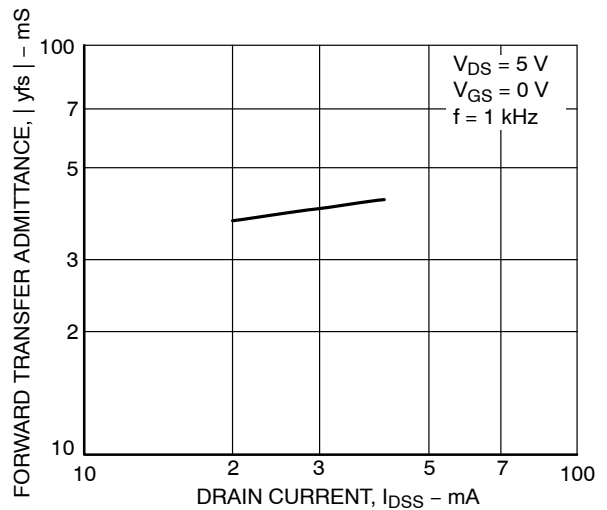


Figure 6.  $|y_{fs}| - I_{DSS}$

TYPICAL CHARACTERISTICS (CONTINUED)

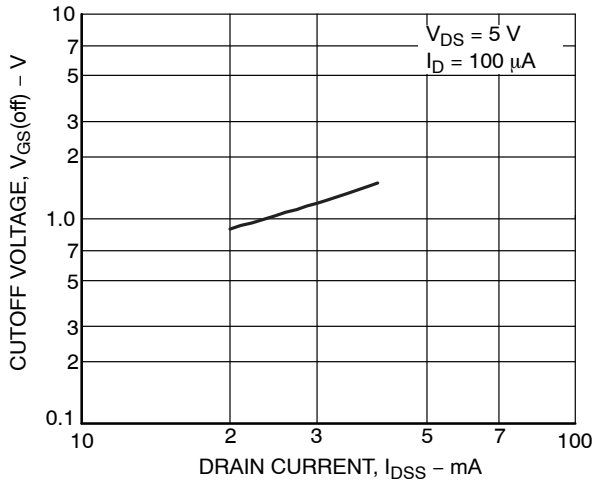


Figure 7.  $V_{GS(off)} - I_{DSS}$

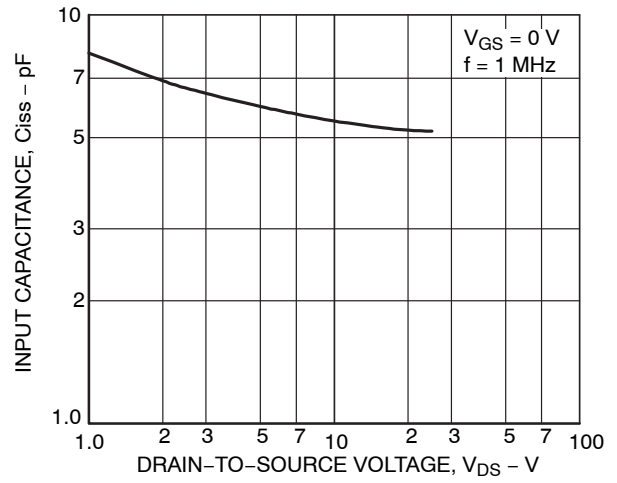


Figure 8.  $C_{iss} - V_{DS}$

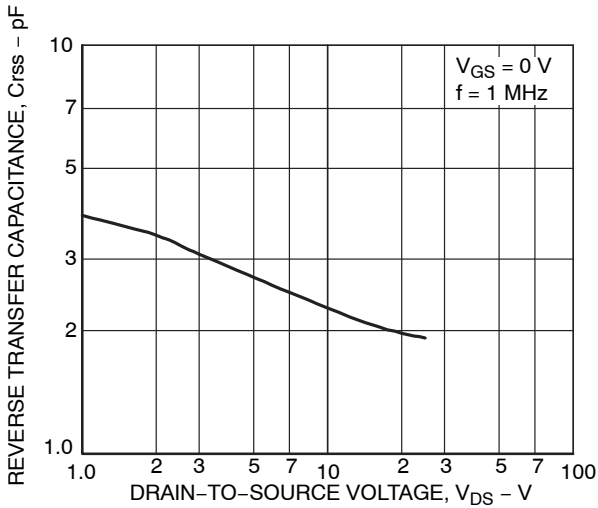


Figure 9.  $C_{rss} - V_{DS}$

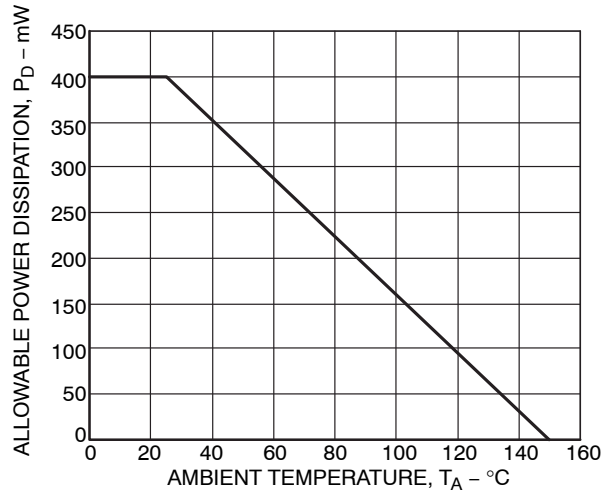


Figure 10.  $P_D - T_A$

RECOMMENDED SOLDERING FOOTPRINT

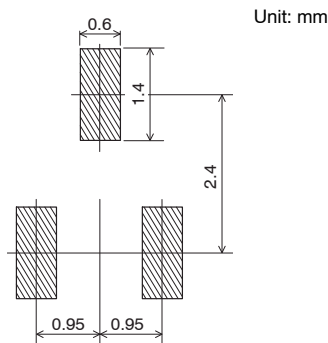


Figure 11. Recommended Soldering Footprint

# MECHANICAL CASE OUTLINE

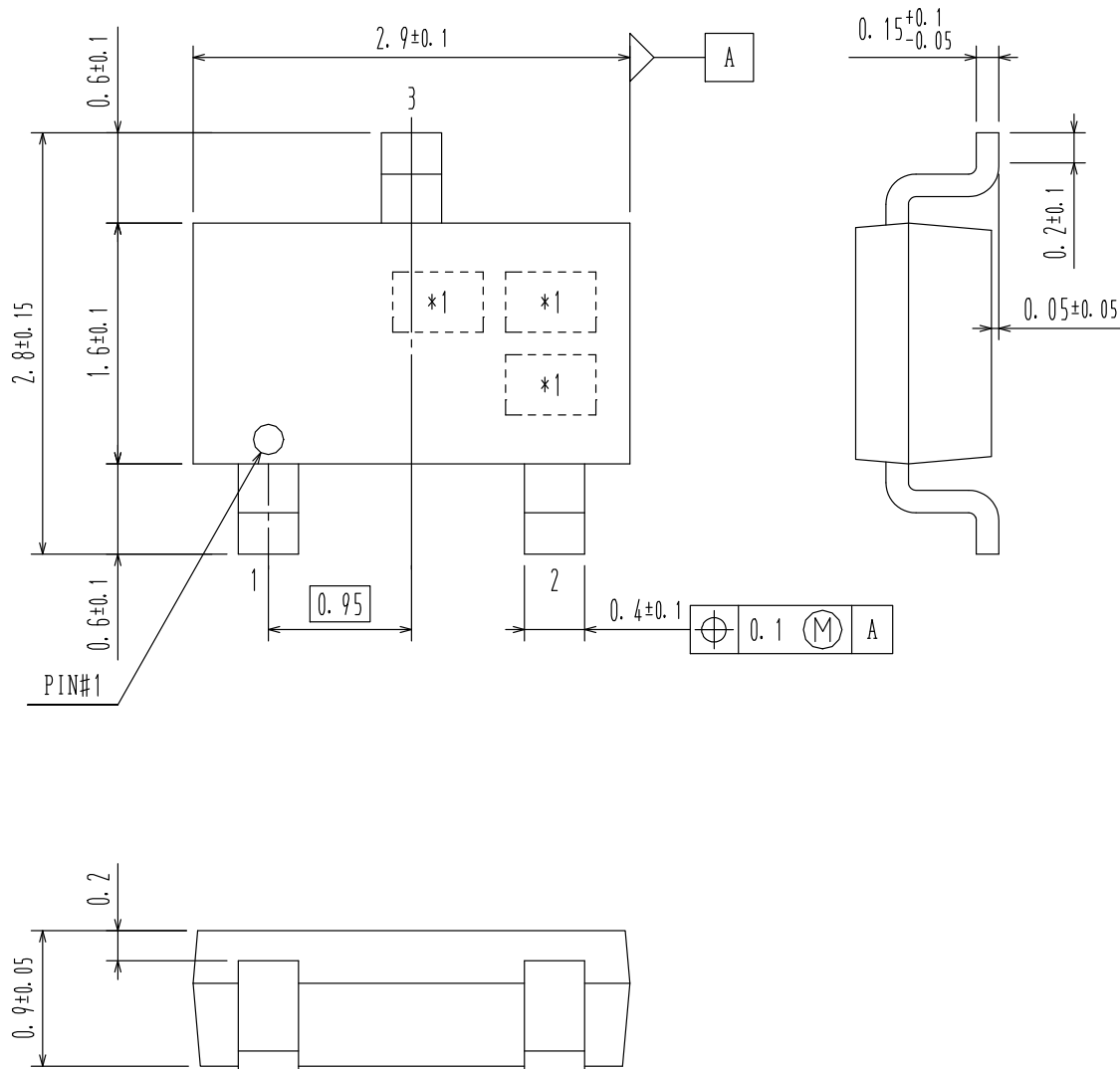
## PACKAGE DIMENSIONS

ON Semiconductor®


ON

### CPH3 CASE 318BA ISSUE O

DATE 30 NOV 2011



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