

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

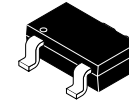
- Low Noise Amplifier for Automotive AM Radio

Specifications

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

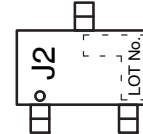
Parameter	Symbol	Value	Unit
Drain-to-Source Voltage	V_{DSX}	25	V
Gate-to-Drain Voltage	V_{GDS}	-25	V
Gate Current	I_G	10	mA
Drain Current	I_D	50	mA
Allowable Power Dissipation	P_D	400	mW
Operating Junction and Storage Temperature	T_J, T_{STG}	-55 to +150	$^\circ\text{C}$

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.



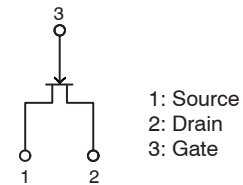
CPH3
CASE 318BA

MARKING DIAGRAM



J2 = Specific Device Code

ELECTRICAL CONNECTION



N-Channel

ORDERING INFORMATION

Device	Package	Shipping [†]
NSVJ3910SB3T1G	CPH3 (Pb-Free)	3000 / Tape & Reel

[†]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

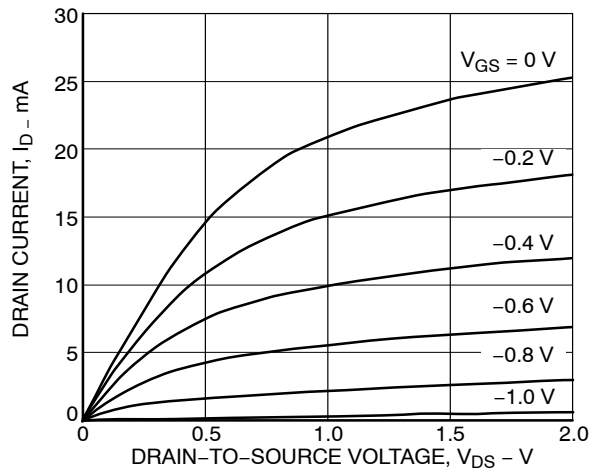


Figure 1. $I_D - V_{DS}$

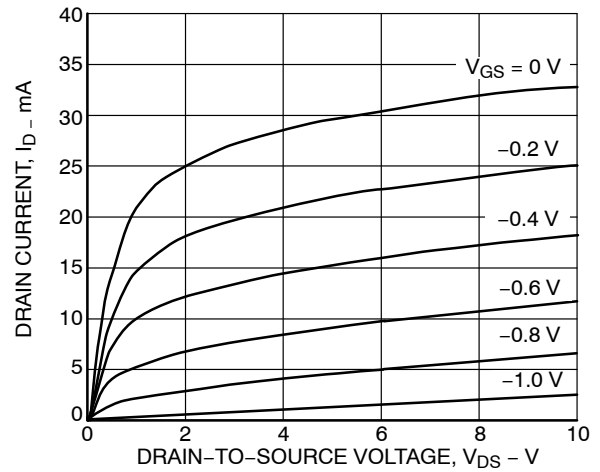


Figure 2. $I_D - V_{DS}$

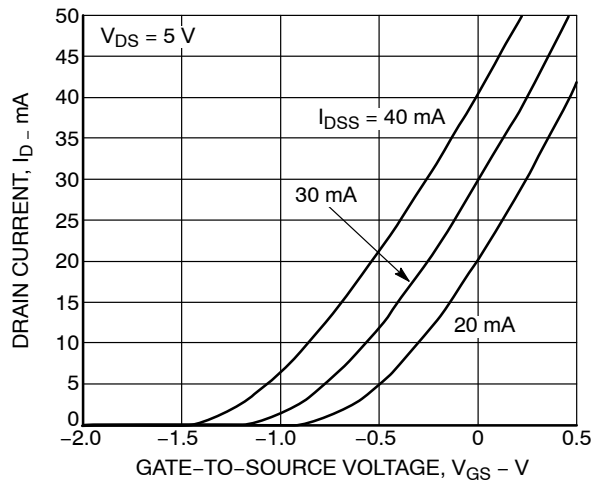


Figure 3. $I_D - V_{GS}$

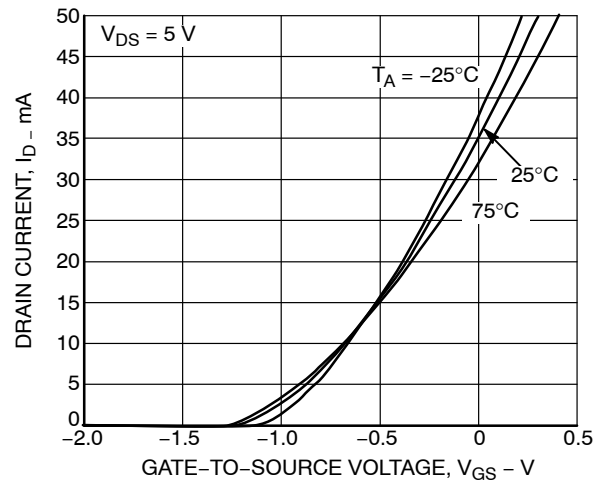


Figure 4. $I_D - V_{GS}$

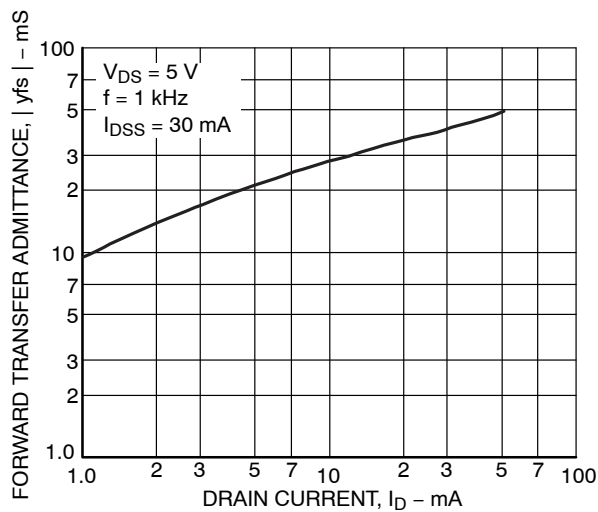


Figure 5. $|y_{fs}| - I_D$

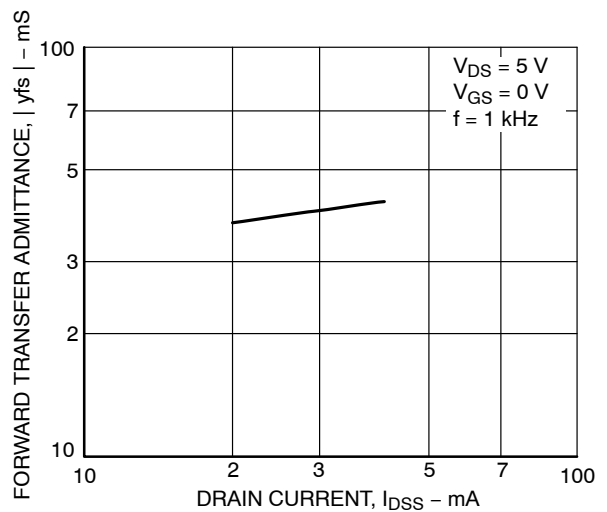


Figure 6. $|y_{fs}| - I_{DSS}$

TYPICAL CHARACTERISTICS (CONTINUED)

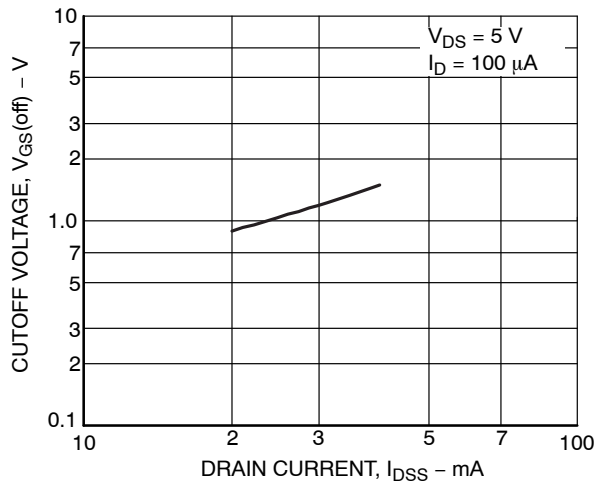


Figure 7. $V_{GS(off)} - I_{DSS}$

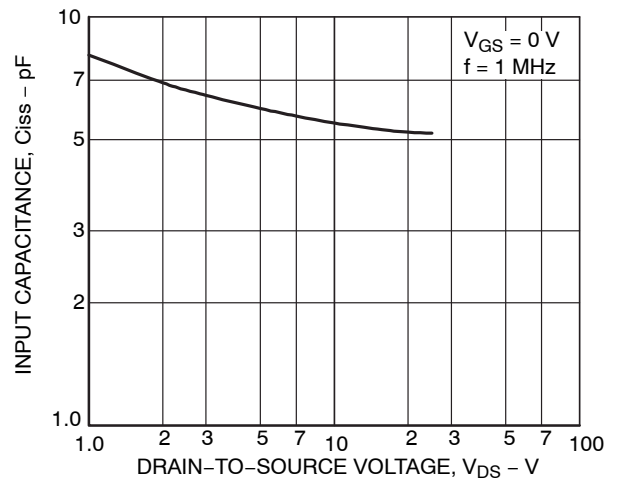


Figure 8. $C_{iss} - V_{DS}$

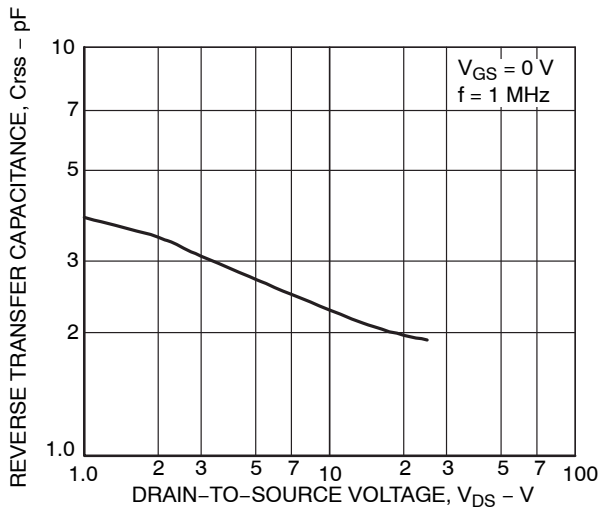


Figure 9. $C_{rss} - V_{DS}$

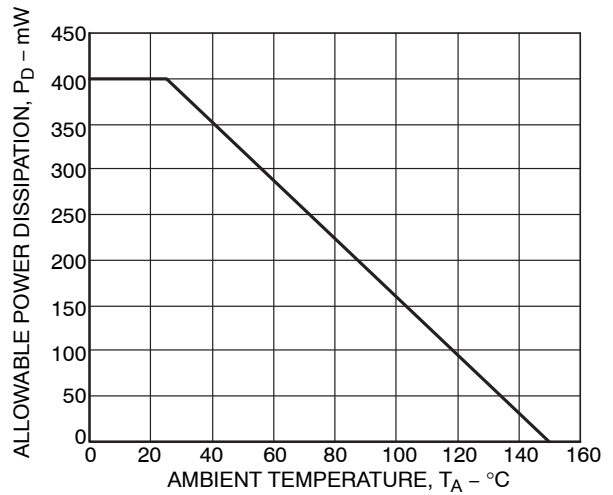


Figure 10. $P_D - T_A$

RECOMMENDED SOLDERING FOOTPRINT

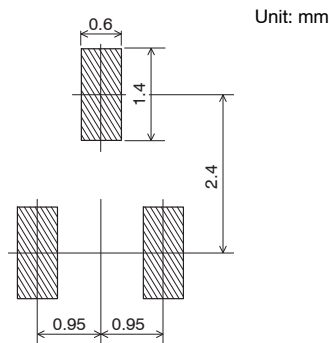
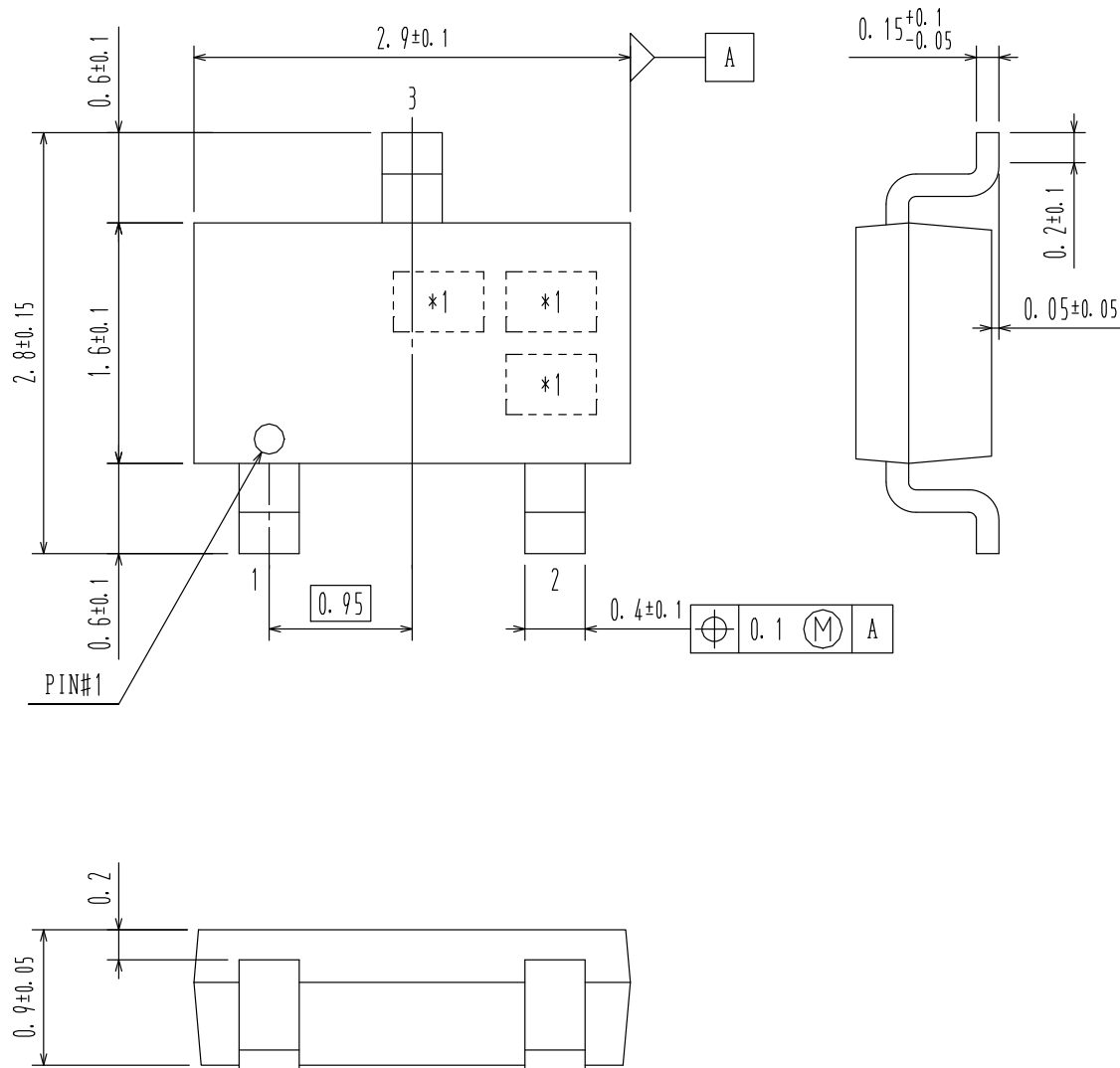



Figure 11. Recommended Soldering Footprint

CPH3
CASE 318BA
ISSUE O

DATE 30 NOV 2011



DOCUMENT NUMBER:	98AON65437E	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped "CONTROLLED COPY" in red.
DESCRIPTION:	CPH3	PAGE 1 OF 1

ON Semiconductor and  are trademarks of Semiconductor Components Industries, LLC dba ON Semiconductor or its subsidiaries in the United States and/or other countries. ON Semiconductor reserves the right to make changes without further notice to any products herein. ON Semiconductor makes no warranty, representation or guarantee regarding the suitability of its products for any particular purpose, nor does ON Semiconductor assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. ON Semiconductor does not convey any license under its patent rights nor the rights of others.

onsemi, **Onsemi**, and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba "**onsemi**" or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**'s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent-Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided "as-is" and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi** products, including compliance with all laws, regulations and safety requirements or standards, regardless of any support or applications information provided by **onsemi**. "Typical" parameters which may be provided in **onsemi** data sheets and/or specifications can and do vary in different applications and actual performance may vary over time. All operating parameters, including "Typicals" must be validated for each customer application by customer's technical experts. **onsemi** does not convey any license under any of its intellectual property rights nor the rights of others. **onsemi** products are not designed, intended, or authorized for use as a critical component in life support systems or any FDA Class 3 medical devices or medical devices with a same or similar classification in a foreign jurisdiction or any devices intended for implantation in the human body. Should Buyer purchase or use **onsemi** products for any such unintended or unauthorized application, Buyer shall indemnify and hold **onsemi** and its officers, employees, subsidiaries, affiliates, and distributors harmless against all claims, costs, damages, and expenses, and reasonable attorney fees arising out of, directly or indirectly, any claim of personal injury or death associated with such unintended or unauthorized use, even if such claim alleges that **onsemi** was negligent regarding the design or manufacture of the part. **onsemi** is an Equal Opportunity/Affirmative Action Employer. This literature is subject to all applicable copyright laws and is not for resale in any manner.

ADDITIONAL INFORMATION

TECHNICAL PUBLICATIONS:

Technical Library: www.onsemi.com/design/resources/technical-documentation
onsemi Website: www.onsemi.com

ONLINE SUPPORT: www.onsemi.com/support

For additional information, please contact your local Sales Representative at
www.onsemi.com/support/sales