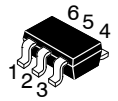
N-Channel JFET, Dual

-25 V, 20 to 40 mA, 40 mS

NSVJ6904DSB6



CPH6
CASE 318BD

The NSVJ6904DSB6 is a composite type of JFET designed for compact size and high efficiency which can achieve high gain performance. This AEC−Q101 qualified and PPAP capable device is suited for automotive applications.

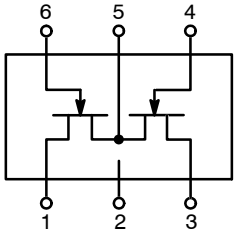
Features

- Large | yfs |
- Small Ciss
- Ultralow Noise Figure
- CPH6 Package is Pin−Compatible with SC−74
- AEC−Q101 Qualified and PPAP Capable
- Mounting Area is Greatly Reduced by Incorporating Two JFETs of the NSVJ3910SB3 in One Package of CPH6 Compared with Using Two Separate Packages

Typical Applications

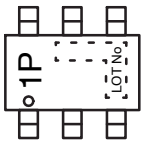
- AM Tuner RF Amplification
- Low Noise Amplifier

ELECTRICAL CONNECTION
N−Channel



1 : Drain 1
2 : NC
3 : Drain 2
4 : Gate 2
5 : Source 1 / Source 2
6 : Gate 1

MARKING DIAGRAM



CPH6

SPECIFICATIONS ABSOLUTE MAXIMUM RATINGS T_A = 25°C

Symbol	Parameter	Value	Unit
V_{DSX}	Drain to Source Voltage	25	V
V_{GDS}	Gate to Drain Voltage	−25	V
I_G	Gate Current	10	mA
I_D	Drain Current	50	mA
P_D	Allowable Power Dissipation 1 unit	400	mW
P_T	Total Power Dissipation	700	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.

ORDERING INFORMATION

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

ELECTRICAL CHARACTERISTICS T_J = 25°C (Note 1)

Symbol	Characteristic	Conditions	Min	Typ	Max	Unit
$V_{(BR)GDS}$	Gate to Drain Breakdown Voltage	I_G = −10 μA, V_{DS} = 0 V	−25	–	–	V
I_{GSS}	Gate to Source Leakage Current	V_{GS} = −10 V, V_{DS} = 0 V	–	–	−1.0	nA
$V_{GS(off)}$	Cutoff Voltage	V_{DS} = 5 V, I_D = 100 μA	−0.6	−1.2	−1.8	V
I_{DSS}	Zero−Gate Voltage Drain Current	V_{DS} = 5 V, V_{GS} = 0 V	20	–	40	mA
| yfs |	Forward Transfer Admittance	V_{DS} = 5 V, V_{GS} = 0 V, f = 1 kHz	30	40	–	mS
Ciss	Input Capacitance	V_{DS} = 5 V, V_{GS} = 0 V, f = 1 MHz	–	6.0	–	pF
Crss	Reverse Transfer Capacitance		–	2.3	–	pF
NF	Noise Figure	V_{DS} = 5 V, V_{GS} = 0 V, f = 100 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.

1. The specifications shown above are for each individual JFET.

TYPICAL CHARACTERISTICS

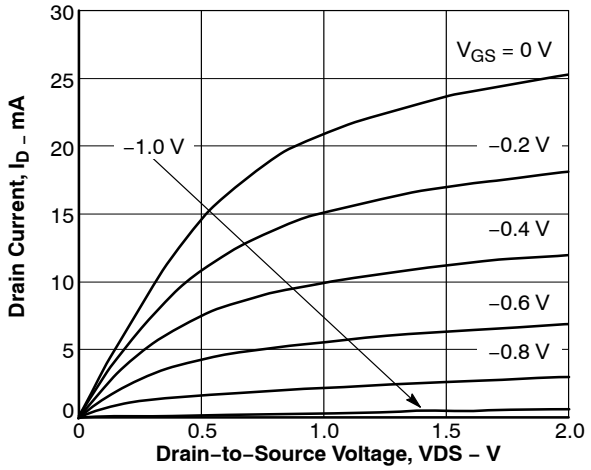


Figure 1. I_D – V_{DS}

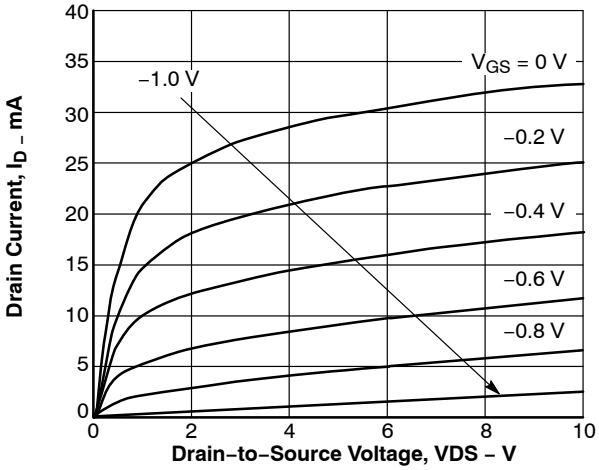


Figure 2. I_D – V_{DS}

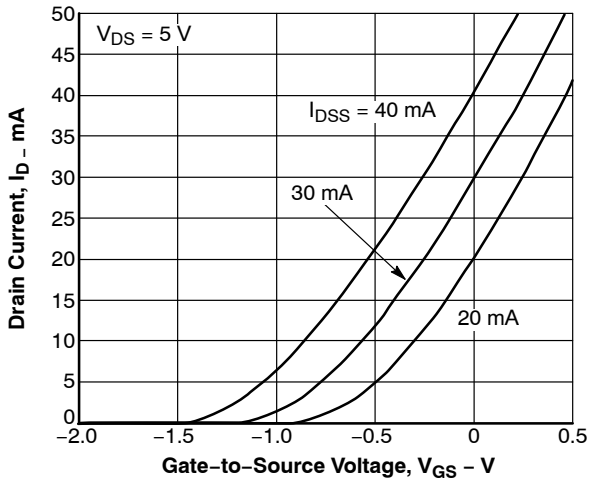


Figure 3. I_D – V_{GS}

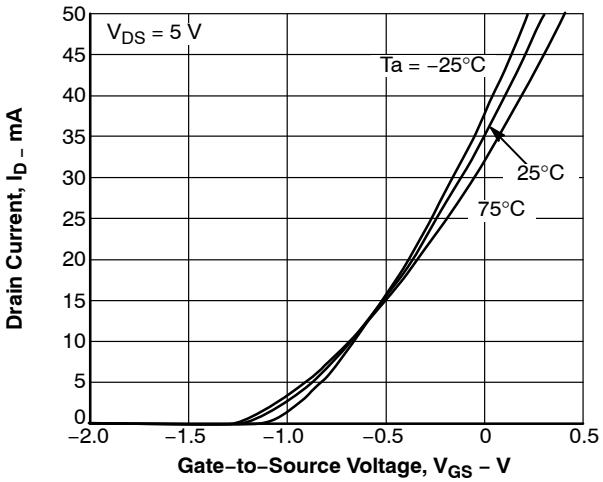


Figure 4. I_D – V_{GS}

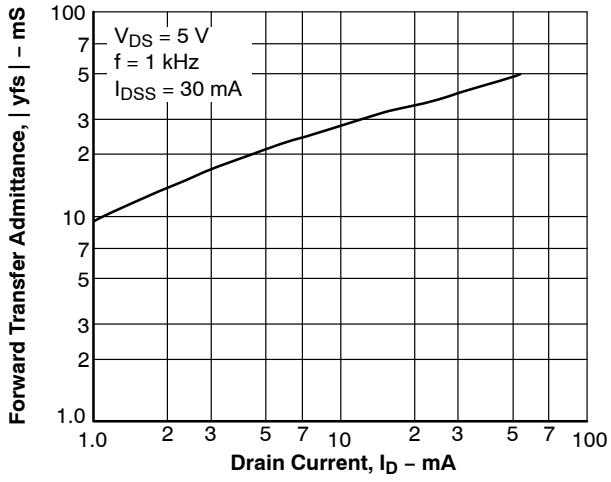


Figure 5. | yfs | – I_D

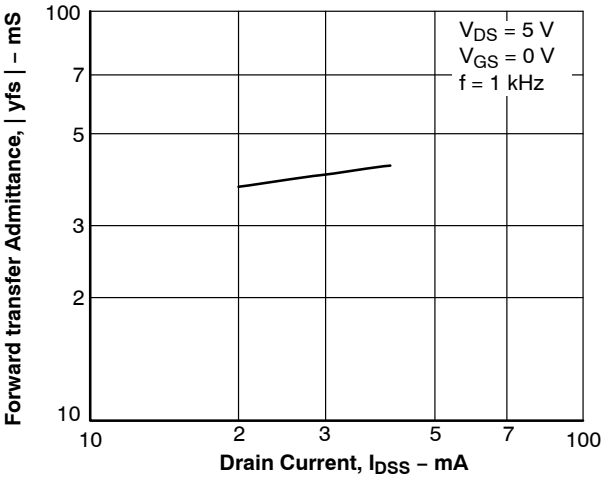


Figure 6. | yfs | – I_{DSS}

TYPICAL CHARACTERISTICS (continued)

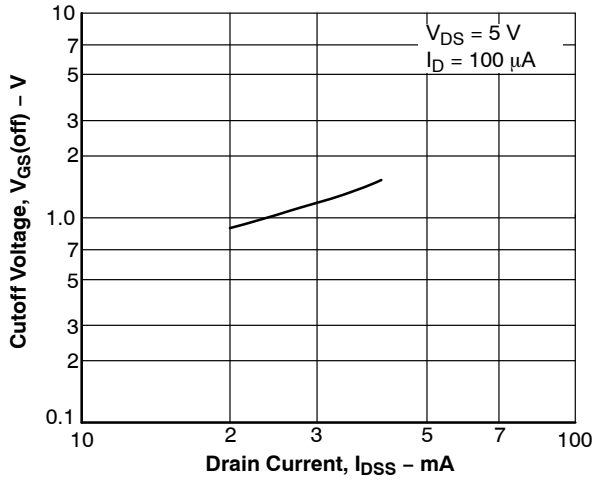


Figure 7. V_{GS}(off) – I_{DSS}

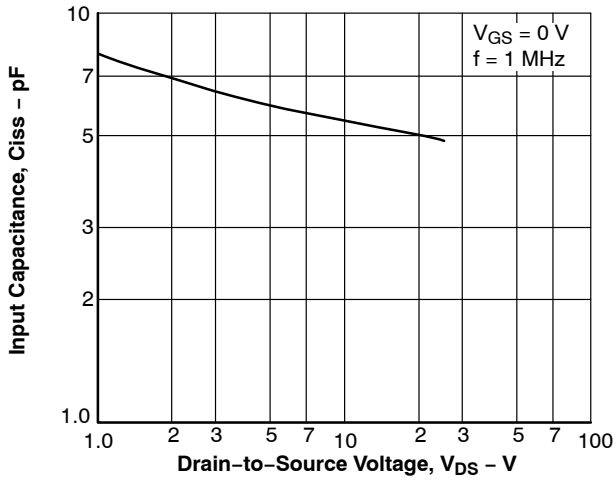


Figure 8. Ciss – V_{GDS}

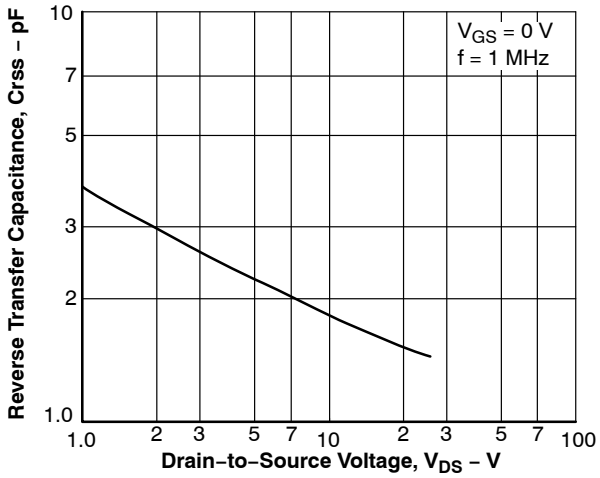


Figure 9. Crss – V_{DS}

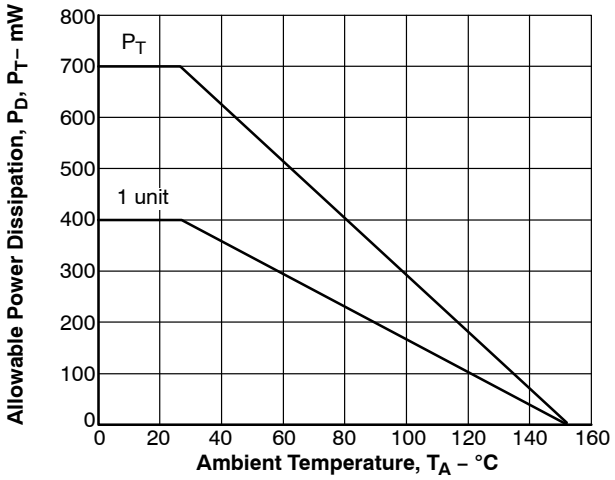
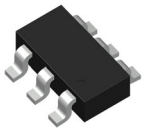


Figure 10. P_D, P_T – Ta

ORDERING INFORMATION

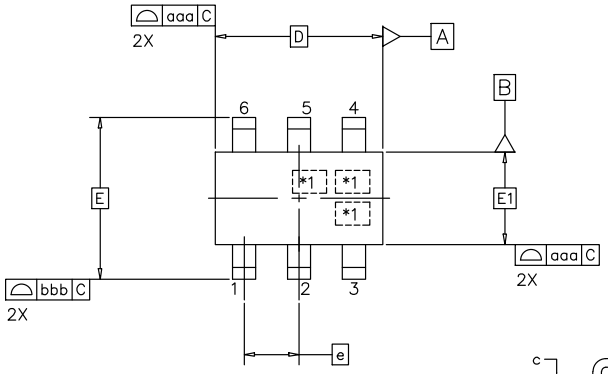
Device Order Number	Specific Device Marking	Package Type	Shipping†
NSVJ6904DSB6T1G	1P	CPH6 (Pb–Free / Halogen Free)	3,000 / Tape & Reel

†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.

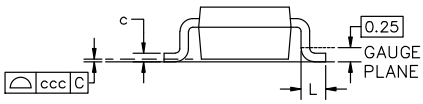


CPH6 2.90x1.60x0.90, 0.95P
CASE 318BD
ISSUE A

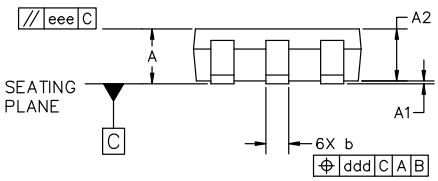
DATE 20 SEPT 2024



TOP VIEW



END VIEW

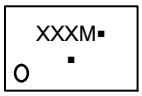


SIDE VIEW

MILLIMETERS			
DIM	MIN	NOM	MAX
A	0.85	0.95	1.05
A1	0.00	0.05	0.10
A2	0.85	0.90	0.95
b	0.30	0.40	0.50
c	0.10	0.15	0.25
D	2.90 BSC		
E	2.80 BSC		
E1	1.60 BSC		
e	0.95 BSC		
L	0.10	0.20	0.30
TOLERANCE FORM AND POSITION			
aaa	0.10		
bbb	0.15		
ccc	0.05		
ddd	0.10		
eee	0.10		

NOTES:
1. DIMENSIONING AND TOLERANCING PER ASME Y14.5M, 2018.
2. CONTROLLING DIMENSION: MILLIMETERS
3. *1 IS FOR LOT INDICATION

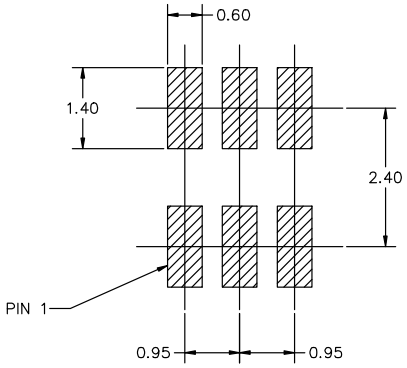
GENERIC
MARKING DIAGRAM*



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. Some products may not follow the Generic Marking.



RECOMMENDED MOUNTING FOOTPRINT

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

DOCUMENT NUMBER:	**98AON65440E**	Electronic versions are uncontrolled except when accessed directly from the Document Repository. Printed versions are uncontrolled except when stamped “CONTROLLED COPY” in red.	
DESCRIPTION:	**CPH6 2.90x1.60x0.90, 0.95P**		**PAGE 1 OF 1**

ADDITIONAL INFORMATION

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