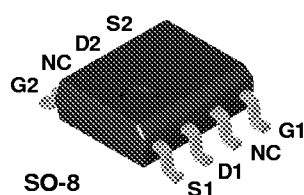


NPDS5911 NPDS5912



N-Channel General Purpose Dual Amplifier

Sourced from Process 93.

Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V _{DS}	Drain-Gate Voltage	25	V
V _{GS}	Gate-Source Voltage	25	V
I _{GF}	Forward Gate Current	10	mA
T _J , T _{stg}	Operating and Storage Junction Temperature Range	-55 to +150	°C

*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

NOTES:

- 1) These ratings are based on a maximum junction temperature of 150 degrees C.
- 2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

General Purpose Dual Amplifier (continued)

Electrical Characteristics

TA = 25 °C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0 \mu A, V_{DS} = 0$	- 25		V
I_{GSS}	Gate Reverse Current	$V_{GS} = 15 V, V_{DS} = 0$ $V_{GS} = 15 V, V_{DS} = 0, T_A = 150 ^\circ C$		100 250	pA nA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 10 V, I_D = 1.0 nA$	- 1.0	- 5.0	V
V_{GS}	Gate-Source Voltage	$V_{DG} = 10 V, I_D = 5.0 mA$	- 0.3	- 4.0	V
$V_{G1 - G2}$	Voltage Gate 1 - Gate 2	$V_{DS} = 0, I_G = + / - 1.0 \mu A$	+ / - 25		V

ON CHARACTERISTICS

I_{DSS}	Zero-Gate Voltage Drain Current*	$V_{DS} = 10 V, V_{GS} = 0$	7.0	40	mA
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SMALL SIGNAL CHARACTERISTICS

g_{fs}	Common Source Forward Transconductance	$V_{DS} = 10 V, I_D = 5.0 mA, f = 1.0 kHz$ $V_{DS} = 10 V, I_D = 5.0 mA, f = 100 MHz$	5000 5000	10,000 10,000	$\mu mhos$ $\mu mhos$
g_{oss}	Common Source Output Conductance	$V_{DS} = 10 V, I_D = 5.0 mA, f = 1.0 kHz$ $V_{DS} = 10 V, I_D = 5.0 mA, f = 100 MHz$		100 150	$\mu mhos$ $\mu mhos$
C_{iss}	Input Capacitance	$V_{DG} = 10 V, I_D = 5.0 mA, f = 1.0 MHz$		5.0	pF
C_{rss}	Reverse Transfer Capacitance	$V_{DS} = 10 V, I_D = 5.0 mA, f = 1.0 kHz$		1.2	pF
e_n	Equivalent Short-Circuit Input Noise Voltage	$V_{DG} = 10 V, I_D = 5.0 mA, f = 10 kHz$		20	$nV/\sqrt{Hz}$
NF	Noise Figure	$V_{DG} = 10 V, I_D = 5.0 mA, f = 10 kHz$ $R_G = 100 k\Omega$		1.0	dB
$I_{DSS1} - I_{DSS2}$	I_{DSS} Match	$V_{DS} = 10 V, V_{GS} = 0$		5.0	%
$g_{fs1} - g_{fs2}$	g_{fs} Match	$V_{DS} = 10 V, I_D = 5.0 mA, f = 1.0 kHz$		5.0	%
$g_{oss1} - g_{oss2}$	g_{oss} Match	$V_{DS} = 10 V, I_D = 5.0 mA, f = 1.0 kHz$		20	$\mu mhos$
$I_{G1} - I_{G2}$	I_G Match	$V_{DS} = 10 V, I_D = 5.0 mA, T_A = 125^\circ C$		20	nA
$V_{GS1} - V_{GS2}$	Differential Match	$V_{DG} = 10 V, I_D = 5.0 mA,$ NPDS5911 NPDS5912		10 15	mV mV
$\Delta V_{GS1} - V_{GS2}$	Differential Drift	$V_{DG} = 10 V, V_{GS} = 0, I_D = 5.0 mA,$ $T_A = 25 \text{ to } 125 ^\circ C$ NPDS5911 NPDS5912 $V_{DG} = 10 V, I_D = 5.0 mA,$ $T_A = -55 \text{ to } 25 ^\circ C$ NPDS5911 NPDS5912		20 40 20 40	$\mu V/^\circ C$ $\mu V/^\circ C$ $\mu V/^\circ C$ $\mu V/^\circ C$

*Pulse Test: Pulse Width ≤ 300 ms, Duty Cycle $\leq 2\%$

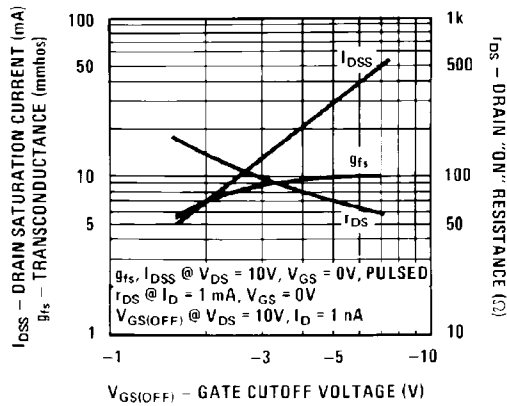
NPDS5911 / NPDS5912

General Purpose Dual Amplifier (continued)

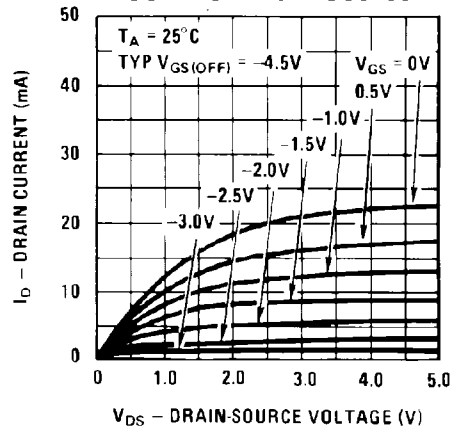
NPDS5911 / NPDS5912

Typical Characteristics (continued)

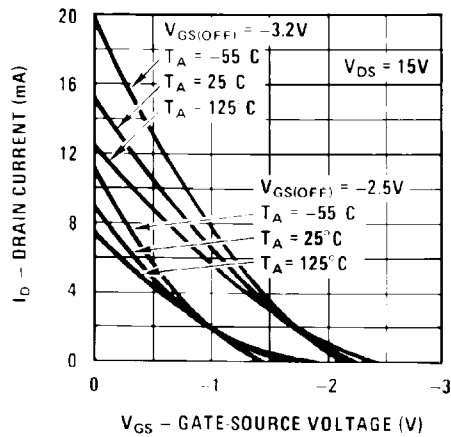
Parameter Interactions



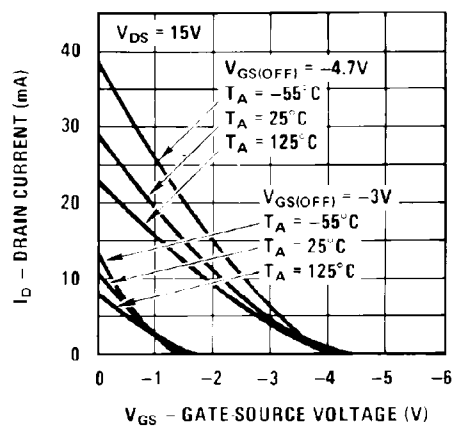
Common Drain-Source



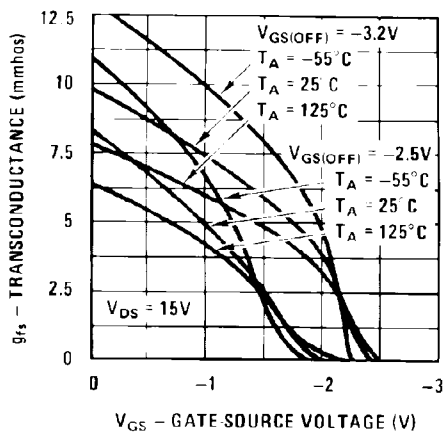
Transfer Characteristics



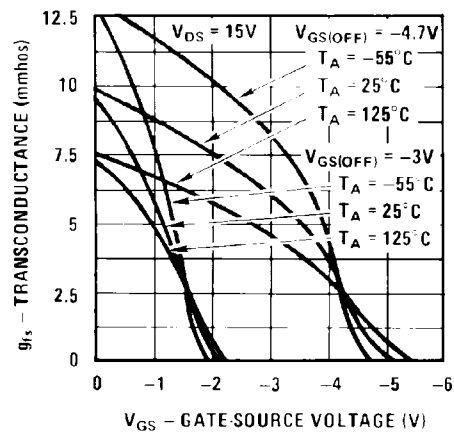
Transfer Characteristics



Transfer Characteristics



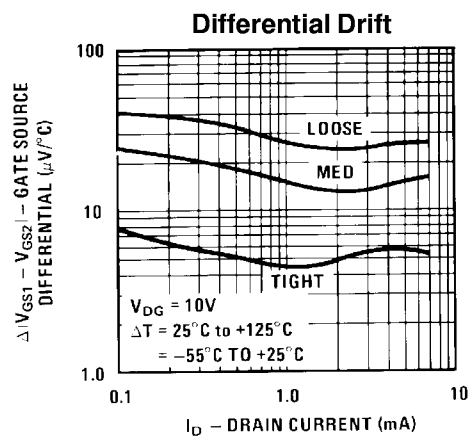
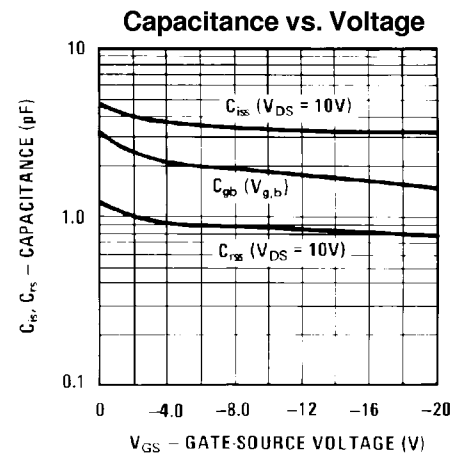
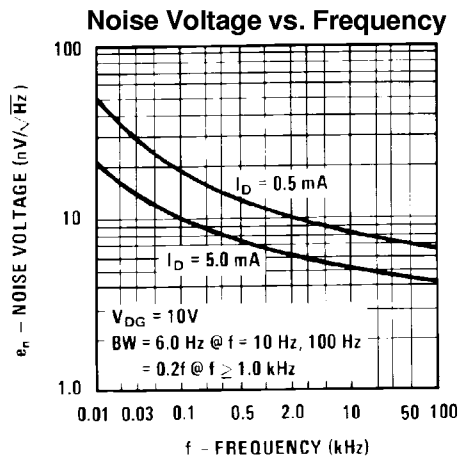
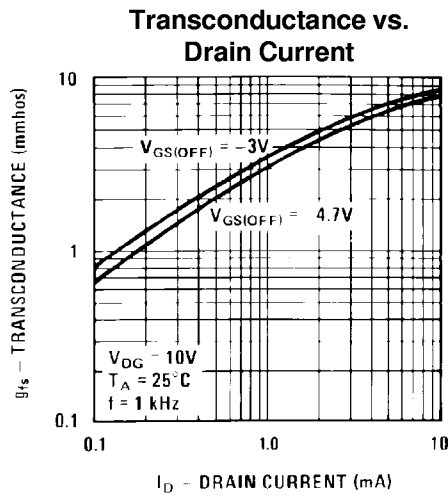
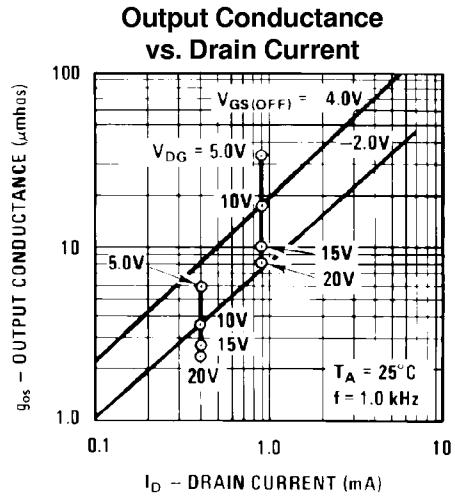
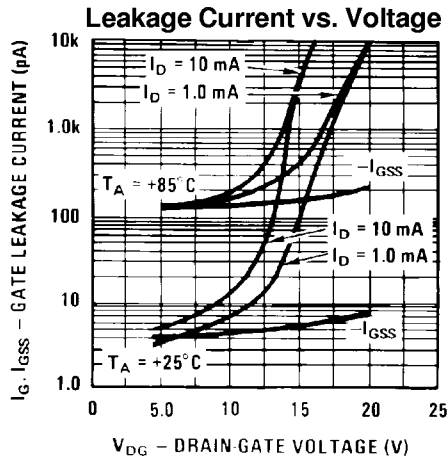
Transfer Characteristics



General Purpose Dual Amplifier (continued)

NPDS5911 / NPDS5912

Typical Characteristics (continued)



Typical Characteristics (continued)

