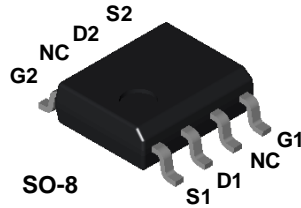


**NPDS8301  
NPDS8302  
NPDS8303**



**N-Channel General Purpose Dual Amplifier**

Sourced from Process 83.

**Absolute Maximum Ratings\***

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>DG</sub>	Drain-Gate Voltage	40	V
V <sub>GS</sub>	Gate-Source Voltage	40	V
I <sub>GF</sub>	Forward Gate Current	10	mA
T <sub>J</sub> , T <sub>stg</sub>	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
<b>OFF CHARACTERISTICS</b>					
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0 \mu A, V_{DS} = 0$	-40		V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = 20 V, V_{DS} = 0$		100	pA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 20 V, I_D = 1.0 nA$	-0.5	-3.5	V
$V_{GS}$	Gate-Source Voltage	$V_{DS} = 20 V, I_D = 200 \mu A$	-0.3	-3.5	V

## ON CHARACTERISTICS

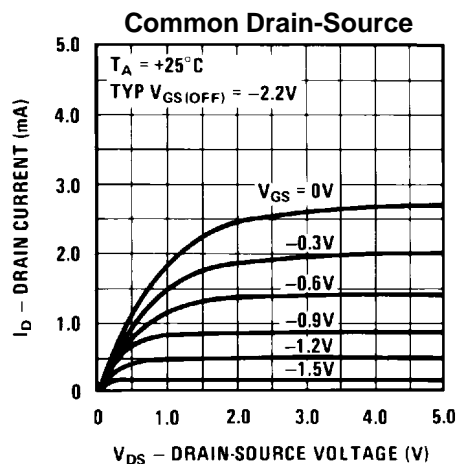
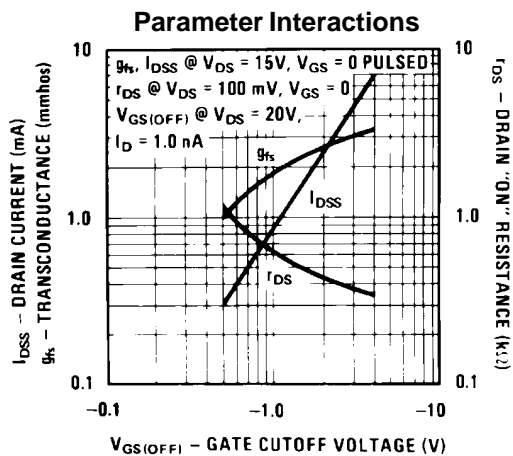
$I_{DSS}$	Zero-Gate Voltage Drain Current*	$V_{DS} = 20 V, V_{GS} = 0$	0.5	6.0	mA
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## SMALL SIGNAL CHARACTERISTICS

$g_{fs}$	Common Source Forward Transconductance	$V_{DS} = 20 V, V_{GS} = 0, f = 1.0 kHz$ $V_{DS} = 20 V, I_D = 200 \mu A,$ $f = 1.0 kHz$	1000 700	4000 1200	$\mu mhos$ $\mu mhos$
$g_{oss}$	Common Source Output Conductance	$V_{DS} = 20 V, I_D = 200 \mu A,$ $f = 1.0 kHz$		20	$\mu mhos$
$g_{os}$	Common Source Output Conductance	$V_{DS} = 20 V, I_D = 200 \mu A,$ $f = 1.0 kHz$		5.0	$\mu mhos$
$V_{GS1} - V_{GS2}$	Differential Match	$V_{DG} = 20 V, I_D = 200 \mu A,$ <b>NPDS8301</b> <b>NPDS8302</b> <b>NPDS8303</b>		5.0 10 15	mV mV mV
$\Delta V_{GS1} - V_{GS2}$	Differential Drift	$V_{DS} = 20 V, I_D = 200 \mu A,$ $T_A = 25 \text{ to } 85^\circ C$ <b>NPDS8301</b> <b>NPDS8302</b> <b>NPDS8303</b>		10 15 25	$\mu V/^\circ C$ $\mu V/^\circ C$ $\mu V/^\circ C$

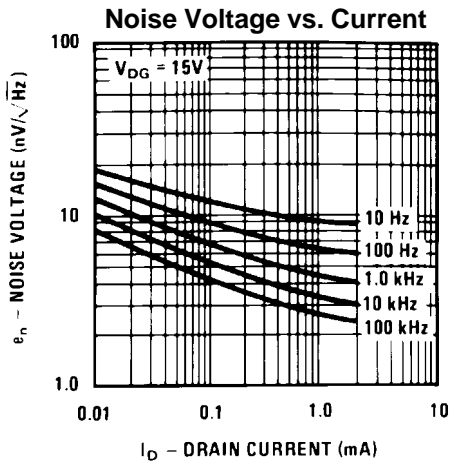
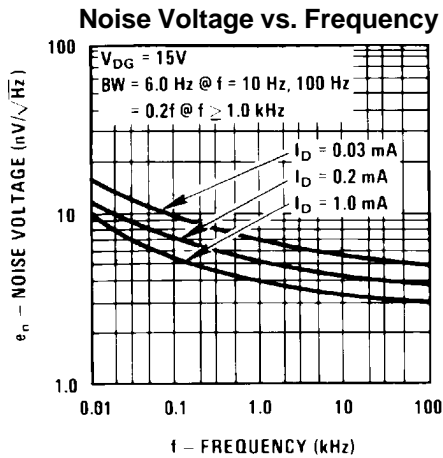
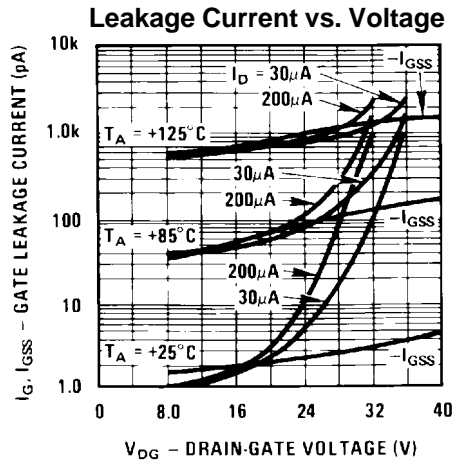
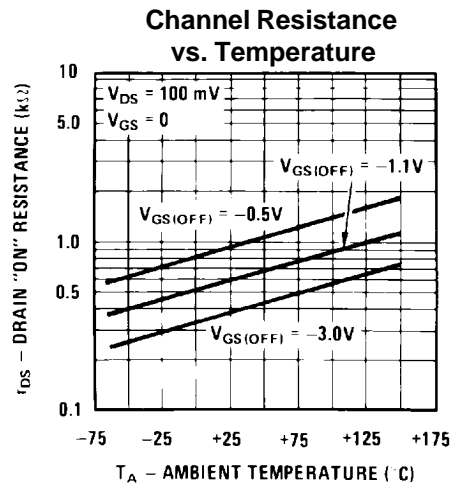
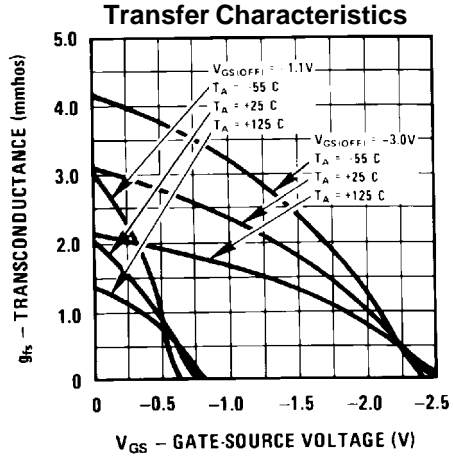
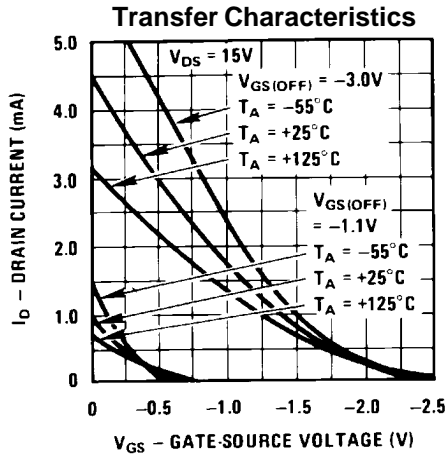
\*Pulse Test: Pulse Width  $\leq 300$  ms, Duty Cycle  $\leq 2\%$

## Typical Characteristics



NPDS8301 / NPDS8302 / NPDS8303

Typical Characteristics (continued)



Typical Characteristics (continued)

