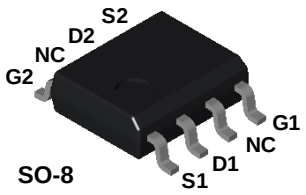
# Index of /ds/NP/

| Name | Last modified | Size | Description |
|---|---|---|---|
| Parent Directory | | | |
| NPDS402.pdf | 22-Dec-99 00:13 | 123K | |
| NPDS403.pdf | 22-Dec-99 00:13 | 123K | |
| NPDS404.pdf | 22-Dec-99 00:13 | 123K | |
| NPDS405.pdf | 22-Dec-99 00:13 | 123K | |
| NPDS5565.pdf | 22-Dec-99 00:13 | 130K | |
| NPDS5566.pdf | 22-Dec-99 00:13 | 130K | |
| NPDS5911.pdf | 22-Dec-99 00:13 | 121K | |
| NPDS5912.pdf | 22-Dec-99 00:13 | 121K | |
| NPDS8301.pdf | 22-Dec-99 00:13 | 109K | |
| NPDS8302.pdf | 22-Dec-99 00:13 | 109K | |
| NPDS8303.pdf | 22-Dec-99 00:13 | 109K | |
| NPN_Epitaxial_Silicon+ | 16-Apr-99 13:01 | 73K | |

FAIRCHILD SEMICONDUCTOR™

*Discrete POWER & Signal Technologies*

# NPDS402
# NPDS403
# NPDS404
# NPDS406




## N-Channel General Purpose Dual Amplifier

Sourced from Process 98.

### Absolute Maximum Ratings*

TA = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{DG}$ | Drain-Gate Voltage | 50 | V |
| $V_{GS}$ | Gate-Source Voltage | 50 | 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)

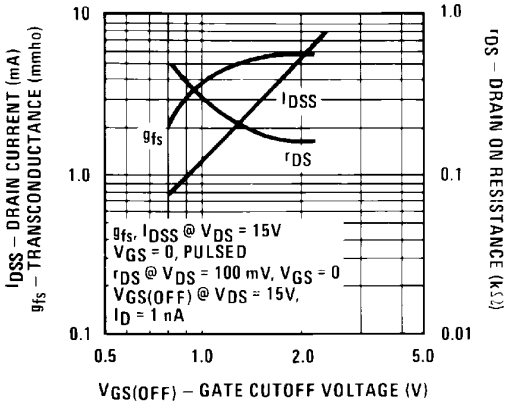
### Electrical Characteristics
TA = 25°C unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | |
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_G$ = 1.0 µA, $V_{DS}$ = 0 | - 50 | | V |
| $I_{GSS}$ | Gate Reverse Current | $V_{GS}$ = 30 V, $V_{DS}$ = 0 | | 25 | pA |
| $V_{GS(off)}$ | Gate-Source Cutoff Voltage | $V_{DS}$ = 15 V, $I_D$ = 1.0 nA | - 0.5 | - 2.5 | V |
| $V_{GS}$ | Gate-Source Voltage | $V_{DG}$ = 15 V, $I_D$ = 200 µA | | - 2.3 | V |
| $V_{G1 - G2}$ | Voltage Gate 1-Gate 2 | $I_G$ = 1.0 µA, $V_{DS}$ = 0 | + / - 50 | | V |
| **ON CHARACTERISTICS** | | | | | |
| $I_{DSS}$ | Zero-Gate Voltage Drain Current* | $V_{DS}$ = 10 V, $V_{GS}$ = 0 | 0.5 | 10 | mA |
| **SMALL SIGNAL CHARACTERISTICS** | | | | | |
| $g_{fs}$ | Common Source Forward Transconductance | $V_{DS}$ = 10 V, $V_{GS}$ = 0, f = 1.0 kHz<br>$V_{DS}$ = 15 V, $I_D$ = 200µA, f = 1.0 kHz | 2000<br>1000 | 7000<br>2000 | µmhos<br>µmhos |
| $g_{oss}$ | Common Source Output Conductance | $V_{DS}$ = 10 V, $V_{GS}$ = 0, f = 1.0 kHz | | 20 | µmhos |
| $g_{os}$ | Common Source Output Conductance | $V_{DS}$ = 15 V, $I_D$ = 200µA, f = 1.0 kHz | | 2.0 | µmhos |
| $C_{iss}$ | Input Capacitance | $V_{DG}$ = 15 V, $I_D$ = 200 µA, f = 1.0 MHz | | 8.0 | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | $V_{DG}$ = 15 V, $I_D$ = 200 µA, f = 1.0 MHz | | 3.0 | pF |
| CMMR | Common Mode Rejection | $V_{DG}$ = 10 to 20 V, $I_D$ = 200 µA | 95 | | dB |
| $V_{GS1} - V_{GS2}$ | Differential Match | $V_{DG}$ = 10 V, $I_D$ = 200 µA,<br>**NPDS402**<br>**NPDS403**<br>**NPDS404**<br>**NPDS406** | | <br>10<br>10<br>15<br>40 | <br>mV<br>mV<br>mV<br>mV |
| $\Delta V_{GS1} - V_{GS2}$ | Differential Drift | $V_{DG}$ = 10 V, $I_D$ = 200 µA,<br>$T_A$ = -55 to 25 °C **NPDS402**<br>**NPDS403**<br>**NPDS404**<br>**NPDS406**<br>$V_{DG}$ = 10 V, $I_D$ = 200 µA<br>$T_A$ = 25 to 125 °C **NPDS402**<br>**NPDS403**<br>**NPDS404**<br>**NPDS406** | | <br>10<br>25<br>25<br>80<br><br>10<br>25<br>25<br>80 | <br>µV/°C<br>µV/°C<br>µV/°C<br>µV/°C<br><br>µV/°C<br>µV/°C<br>µV/°C<br>µV/°C |

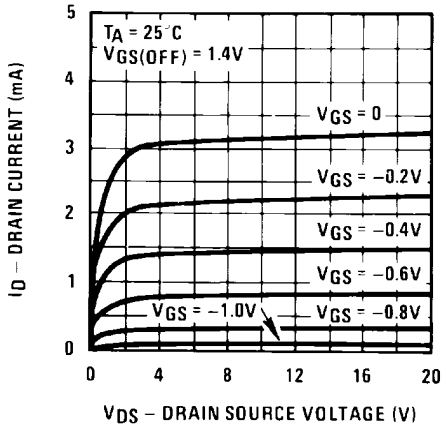
*Pulse Test: Pulse Width ≤ 300 ms, Duty Cycle ≤ 2%

## Typical Characteristics (continued)

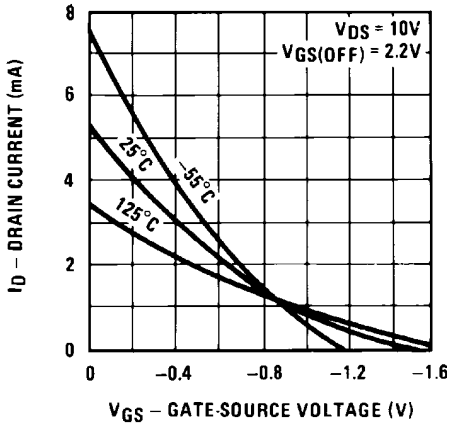
### Parameter Interactions



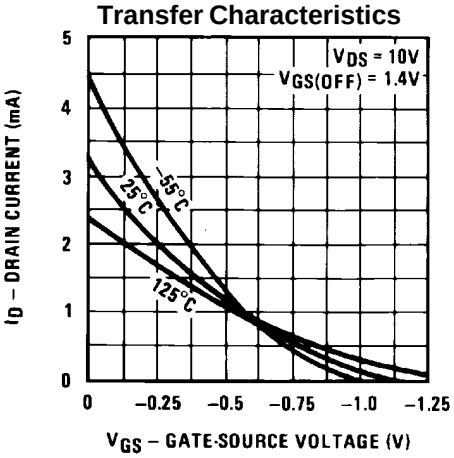

### Common Drain-Source



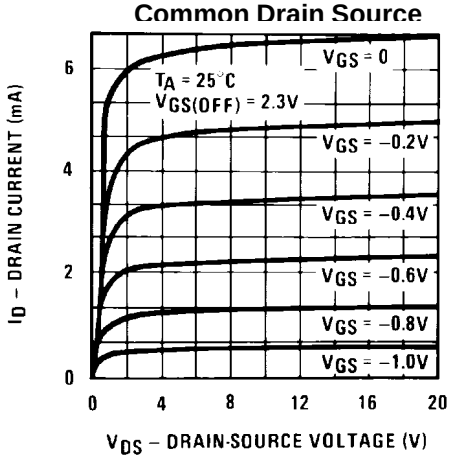

### Transfer Characteristics



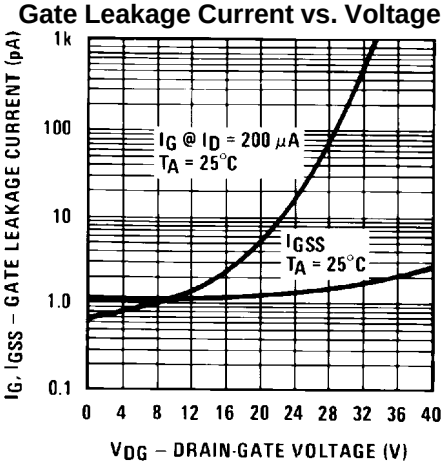

### Transfer Characteristics




### Common Drain Source

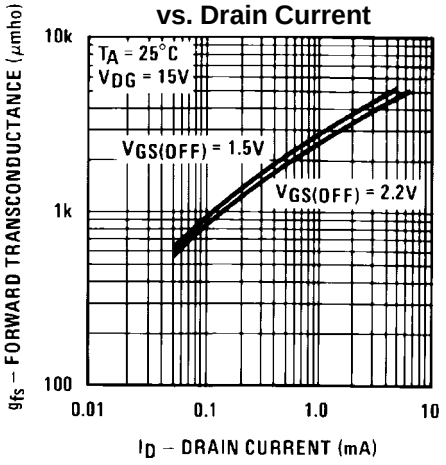



### Gate Leakage Current vs. Voltage

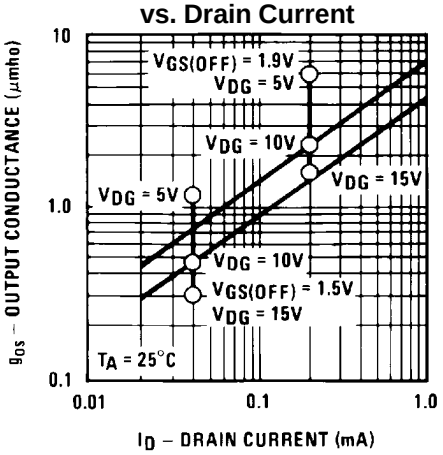


## Typical Characteristics (continued)

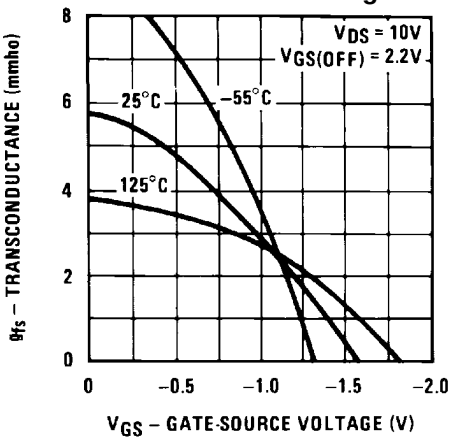
### Forward Transconductance vs. Drain Current



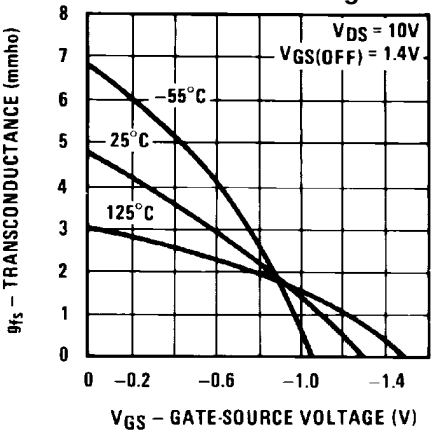

### Output Conductance vs. Drain Current



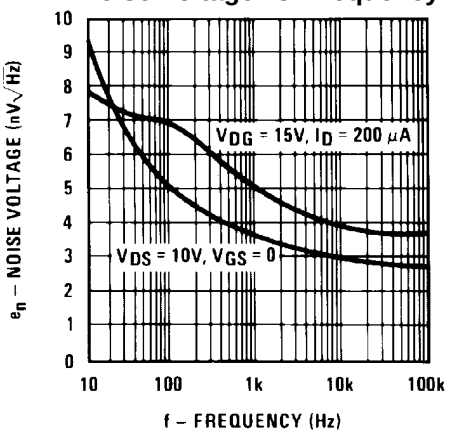

### Transconductance vs. Gate Source Voltage



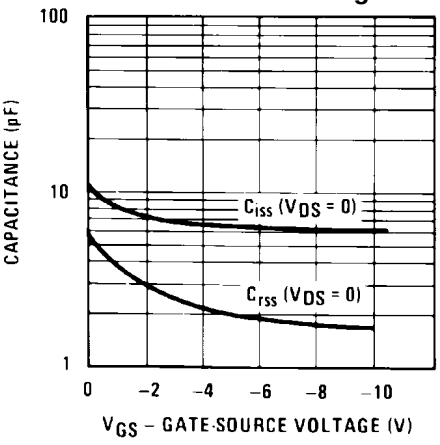

### Transconductance vs. Gate Source Voltage




### Noise Voltage vs. Frequency

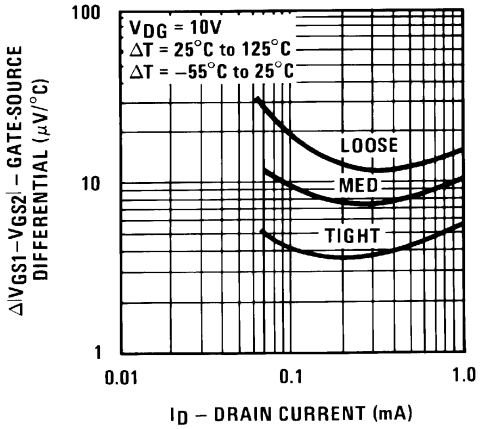



### Capacitance vs. Gate Source Voltage

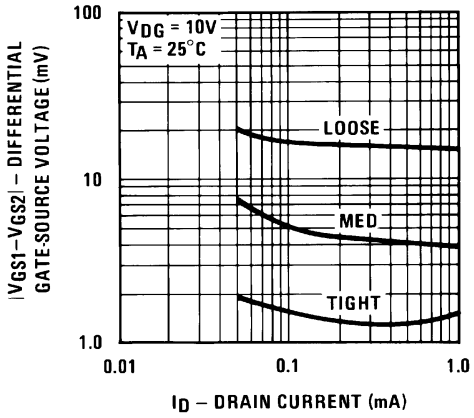


## Typical Characteristics (continued)

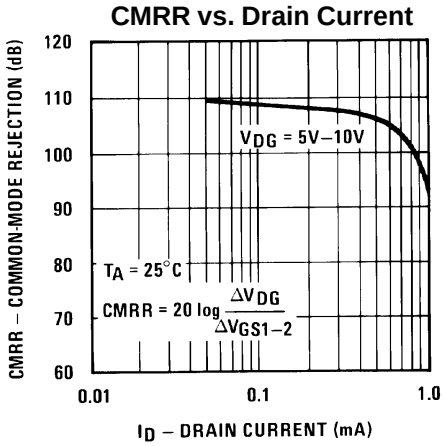
**Differential Drift**




**Differential Offset**




**CMRR vs. Drain Current**



FAIRCHILD SEMICONDUCTOR™

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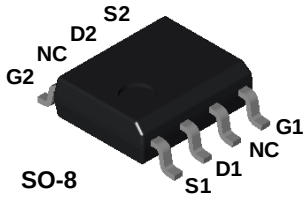
# NPDS5565
# NPDS5566




## N-Channel General Purpose Dual Amplifier

Sourced from Process 96.

### Absolute Maximum Ratings* TA = 25°C unless otherwise noted

| Symbol | Parameter | Value | Units |
|---|---|---|---|
| $V_{DG}$ | Drain-Gate Voltage | 40 | V |
| $V_{GS}$ | Gate-Source Voltage | 40 | V |
| $I_{GF}$ | 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.

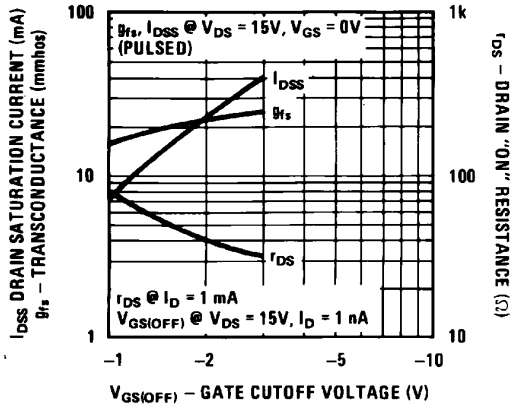
## General Purpose Dual Amplifier
(continued)

### Electrical Characteristics
TA = 25°C unless otherwise noted

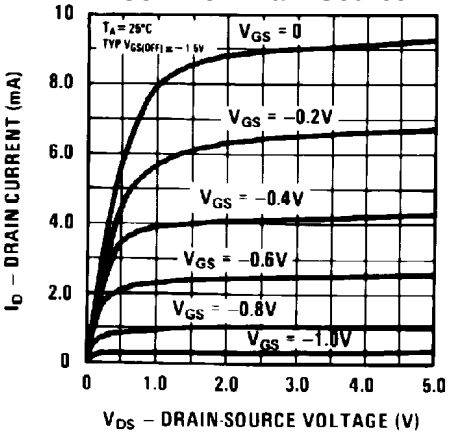
| Symbol | Parameter | Test Conditions | Min | Max | Units |
|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | |
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_G$ = 1.0 µA, $V_{DS}$ = 0 | - 40 | | V |
| $I_{GSS}$ | Gate Reverse Current | $V_{GS}$ = 20 V, $V_{DS}$ = 0<br>$V_{GS}$ = 20 V, $V_{DS}$ = 0, $T_A$ = 150 °C | | 100<br>200 | pA<br>µA |
| $V_{GS(off)}$ | Gate-Source Cutoff Voltage | $V_{DS}$ = 15 V, $I_D$ = 1.0 nA | - 0.5 | - 3.0 | V |
| $V_{GS(f)}$ | Forward Gate-Source Voltage | $V_{DS}$ = 0, $I_D$ = 2.0 mA | | 1.0 | V |
| $V_{G1 - G2}$ | Voltage Gate 1 - Gate 2 | $V_{DS}$ = 0, $I_G$ = + / - 1.0 µA | + / - 40 | | V |
| **ON CHARACTERISTICS** | | | | | |
| $I_{DSS}$ | Zero-Gate Voltage Drain Current* | $V_{DS}$ = 15 V, $V_{GS}$ = 0 | 5.0 | 30 | mA |
| $r_{DS(on)}$ | Drain-Source On Resistance | $I_D$ = 1.0 mA, $V_{GS}$ = 0 | | 100 | Ω |
| **SMALL SIGNAL CHARACTERISTICS** | | | | | |
| $g_{fs}$ | Common Source Forward Transconductance | $V_{DS}$ = 15 V, $I_D$ = 2.0mA, f = 1.0 kHz<br>$V_{DS}$ = 15 V, $I_D$ = 2.0 mA, f = 100 MHz | 7500<br>7000 | 12,500 | µmhos<br>µmhos |
| $g_{oss}$ | Common Source Output Conductance | $V_{DS}$ = 15 V, $I_D$ = 2.0mA, f = 1.0 kHz | | 45 | µmhos |
| $C_{iss}$ | Input Capacitance | $V_{DG}$ = 15 V, $I_D$ = 2.0mA, f = 1.0MHz | | 12 | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | $V_{DS}$ = 15 V, $I_D$ = 2.0mA, f = 1.0 kHz | | 3.0 | pF |
| $e_n$ | Equivalent Short-Circuit Input Noise Voltage | $V_{DG}$ = 15 V, $I_D$ = 2.0 mA, f = 10 Hz | | 50 | nV/√Hz |
| NF | Noise Figure | $V_{DG}$ = 15 V, $I_D$ = 2.0 mA, f = 10 Hz<br>$R_G$ = 1.0 mΩ | | 1.0 | dB |
| $I_{DSS1}$ - $I_{DSS2}$ | $I_{DSS}$ Match | $V_{DS}$ = 15 V, $V_{GS}$ = 0 | | 5.0 | % |
| $g_{fs1}$ - $g_{fs2}$ | $g_{fs}$ Match | $V_{DS}$ = 15 V, $I_D$ = 2.0mA, f = 1.0 kHz | | 10 | % |
| $V_{GS1}$ - $V_{GS2}$ | Differential Match | $V_{DG}$ = 15 V, $I_D$ = 2.0 mA,<br>**NPDS5565**<br>**NPDS5566** | | <br>10<br>20 | <br>mV<br>mV |
| $\Delta V_{GS1}$ - $V_{GS2}$ | Differential Drift | $V_{DS}$ = 10 V, $V_{GS}$ = 0, f = 1.0 kHz<br>$T_A$ = 25 to 125 °C **NPDS5565**<br>**NPDS5566**<br>$V_{DG}$ = 15 V, $I_D$ = 2.0 mA,<br>$T_A$ = -55 to 25 °C **NPDS5565**<br>**NPDS5566** | | <br>25<br>50<br><br>25<br>50 | <br>µV/°C<br>µV/°C<br><br>µV/°C<br>µV/°C |

## Typical Characteristics (continued)

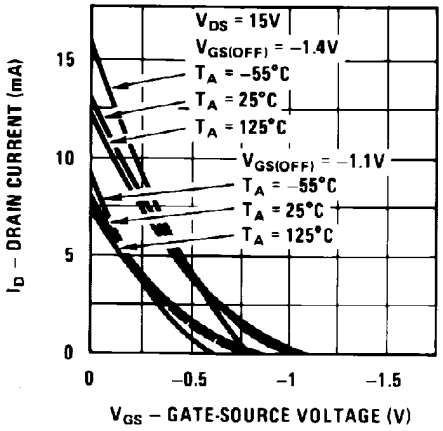
### Parameter Interactions



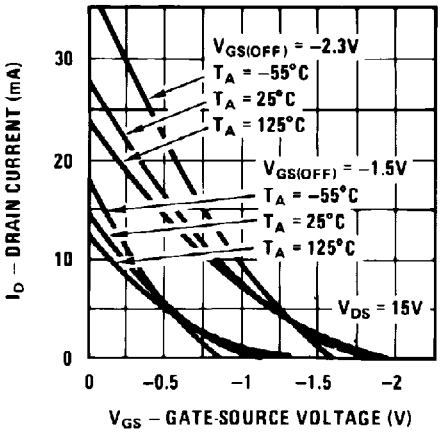

### Common Drain-Source



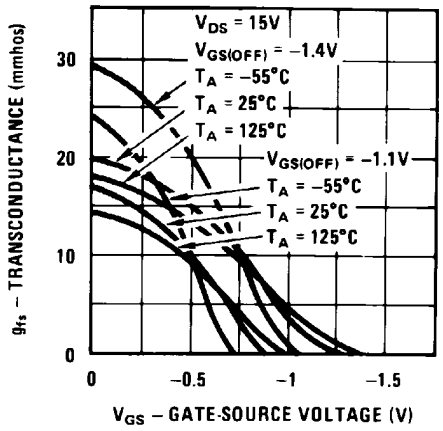

### Transfer Characteristics



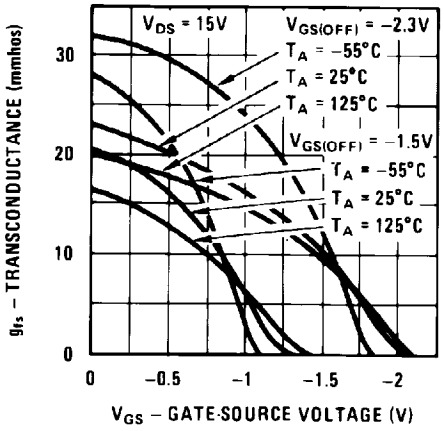

### Transfer Characteristics




### Transfer Characteristics

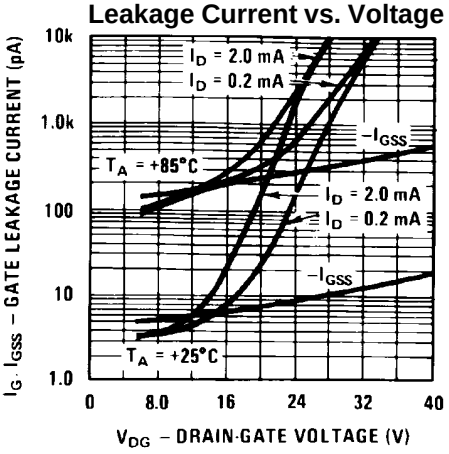



### Transfer Characteristics

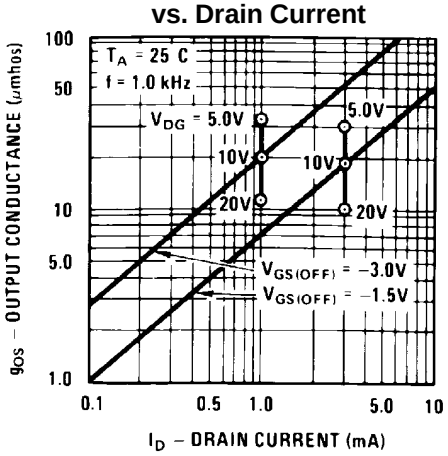


## Typical Characteristics (continued)

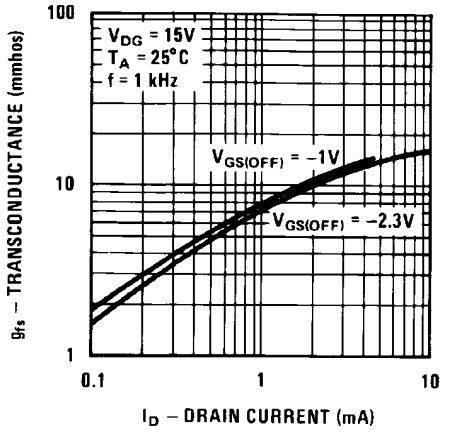
### Leakage Current vs. Voltage



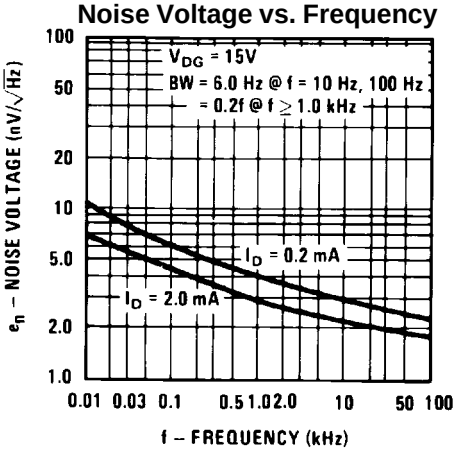

### Output Conductance vs. Drain Current



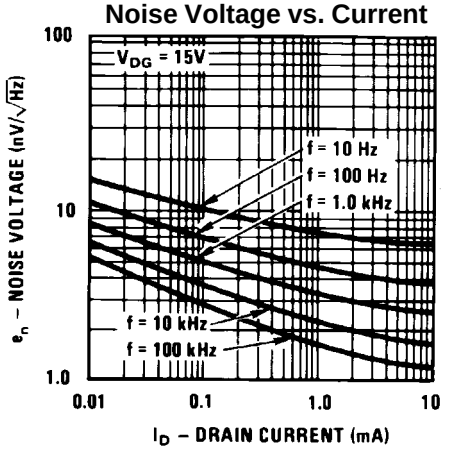

### Transconductance vs. Drain Current



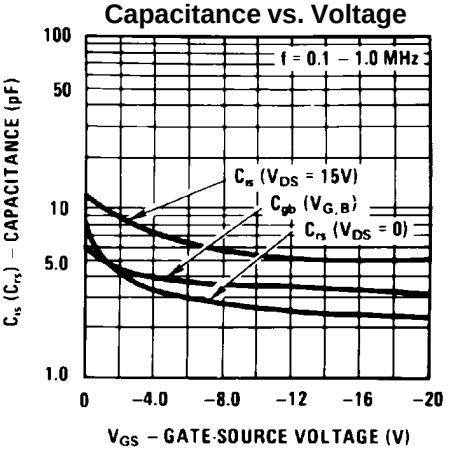

### Noise Voltage vs. Frequency




### Noise Voltage vs. Current

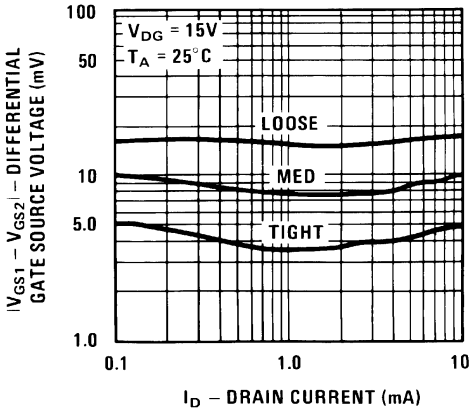



### Capacitance vs. Voltage

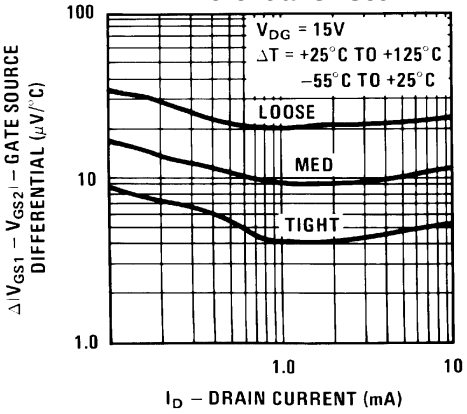


## Typical Characteristics (continued)

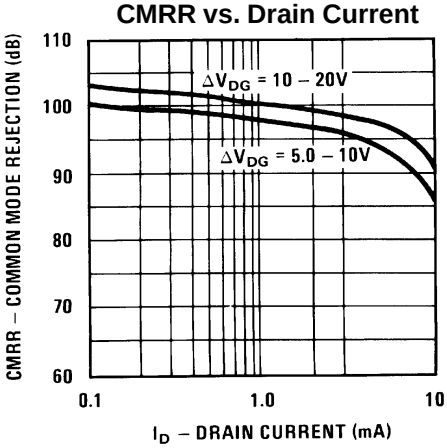
**Differential Drift**




**Differential Offset**



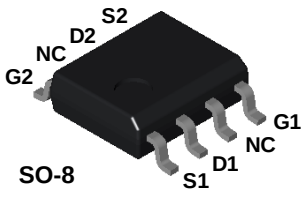

**CMRR vs. Drain Current**



FAIRCHILD SEMICONDUCTOR TM

*Discrete POWER & Signal Technologies*

# 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 |
|---|---|---|---|
| $V_{DG}$ | 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)

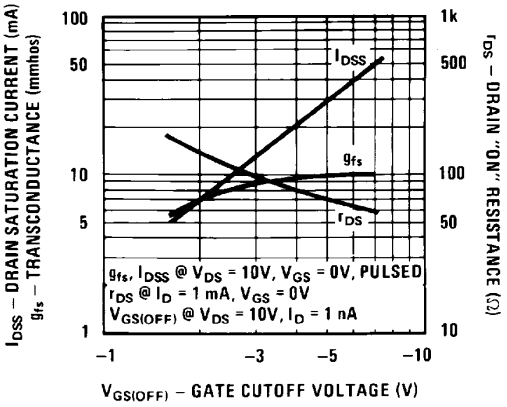
### Electrical Characteristics
TA = 25°C unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | |
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_G$ = 1.0 µA, $V_{DS}$ = 0 | - 25 | | V |
| $I_{GSS}$ | Gate Reverse Current | $V_{GS}$ = 15 V, $V_{DS}$ = 0<br>$V_{GS}$ = 15 V, $V_{DS}$ = 0, $T_A$ = 150 °C | | 100<br>250 | pA<br>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 µA | + / - 25 | | V |
| **ON CHARACTERISTICS** | | | | | |
| $I_{DSS}$ | Zero-Gate Voltage Drain Current* | $V_{DS}$ = 10 V, $V_{GS}$ = 0 | 7.0 | 40 | mA |
| **SMALL SIGNAL CHARACTERISTICS** | | | | | |
| $g_{fs}$ | Common Source Forward Transconductance | $V_{DS}$ = 10 V, $I_D$ = 5.0mA, f = 1.0 kHz<br>$V_{DS}$ = 10 V, $I_D$ = 5.0 mA, f = 100 MHz | 5000<br>5000 | 10,000<br>10,000 | µmhos<br>µmhos |
| $g_{oss}$ | Common Source Output Conductance | $V_{DS}$ = 10 V, $I_D$ = 5.0mA, f = 1.0 kHz<br>$V_{DS}$ = 10V, $I_D$ = 5.0mA, f = 100 MHz | | 100<br>150 | µmhos<br>µmhos |
| $C_{iss}$ | Input Capacitance | $V_{DG}$ = 10 V, $I_D$ = 5.0mA, f =1.0 MHz | | 5.0 | pF |
| $C_{rss}$ | Reverse Transfer Capacitance | $V_{DS}$ = 10 V, $I_D$ = 5.0mA, 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/√Hz |
| NF | Noise Figure | $V_{DG}$ = 10 V, $I_D$ = 5.0 mA, f = 10 kHz<br>$R_G$ = 100 kΩ | | 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, $I_D$ = 5.0mA, f = 1.0 kHz | | 5.0 | % |
| $g_{oss1}$ -$g_{oss2}$ | $g_{oss}$ Match | $V_{DS}$ = 10 V, $I_D$ = 5.0mA, f = 1.0 kHz | | 20 | µmhos |
| $I_{G1}$ - $I_{G2}$ | $I_G$ Match | $V_{DS}$ = 10 V, $I_D$ = 5.0mA, $T_A$ = 125°C | | 20 | nA |
| $V_{GS1}$ - $V_{GS2}$ | Differential Match | $V_{DG}$ = 10 V, $I_D$ = 5.0 mA,<br>**NPDS5911**<br>**NPDS5912** | | <br>10<br>15 | <br>mV<br>mV |
| $\Delta V_{GS1}$ - $V_{GS2}$ | Differential Drift | $V_{DG}$ = 10 V, $V_{GS}$ = 0, $I_D$ = 5.0 mA,<br>$T_A$ = 25 to 125 °C **NPDS5911**<br>**NPDS5912**<br>$V_{DG}$ = 10 V, $I_D$ = 5.0 mA,<br>$T_A$ = -55 to 25 °C **NPDS5911**<br>**NPDS5912** | | <br>20<br>40<br><br>20<br>40 | <br>µV/°C<br>µV/°C<br><br>µV/°C<br>µV/°C |

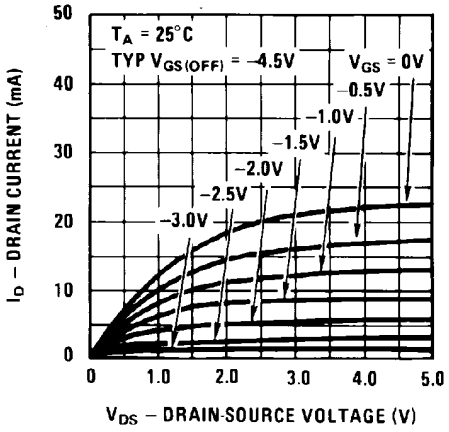
*Pulse Test: Pulse Width ≤ 300 ms, Duty Cycle ≤ 2%

## Typical Characteristics (continued)

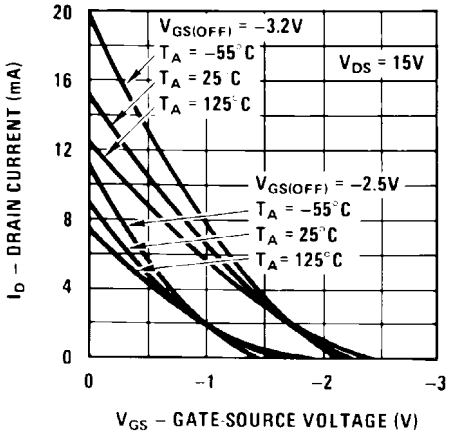
### Parameter Interactions



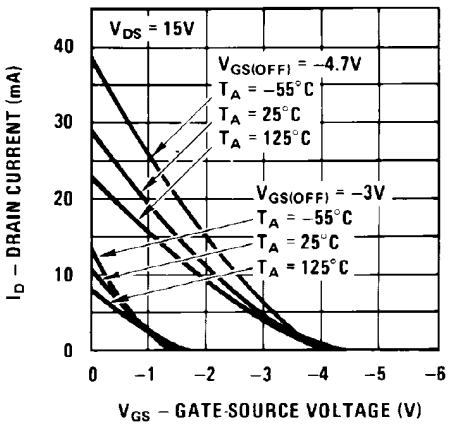

### Common Drain-Source



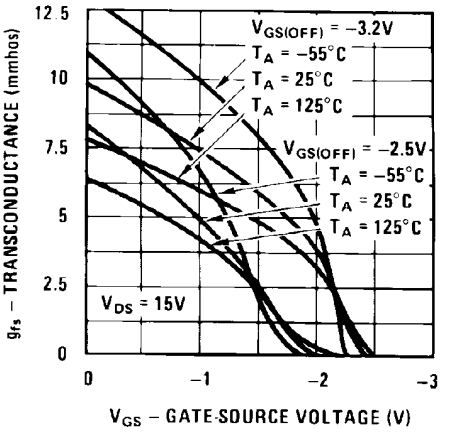

### Transfer Characteristics



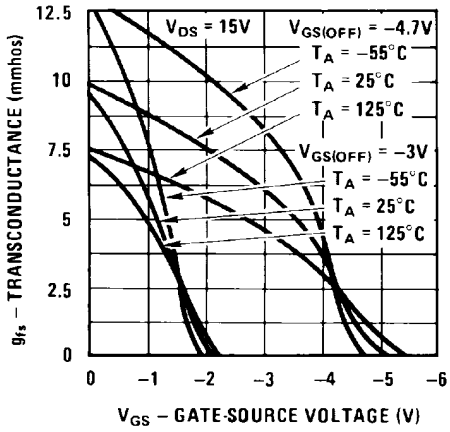

### Transfer Characteristics




### Transfer Characteristics

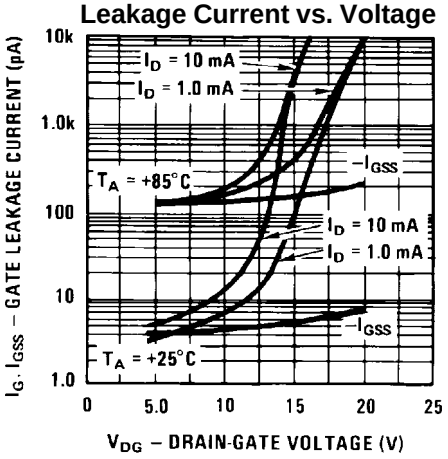



### Transfer Characteristics

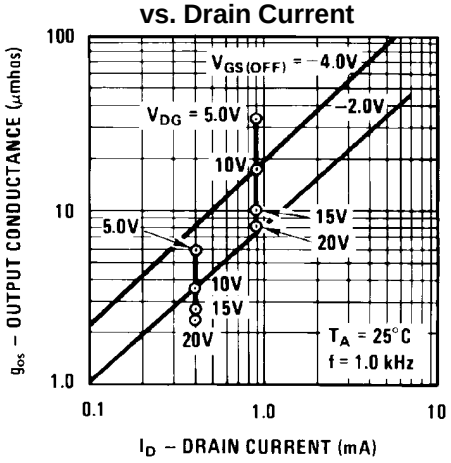


## Typical Characteristics (continued)

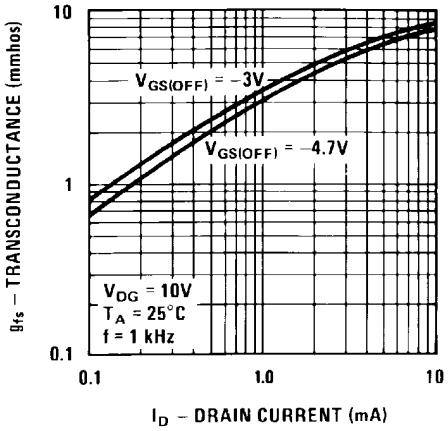
### Leakage Current vs. Voltage



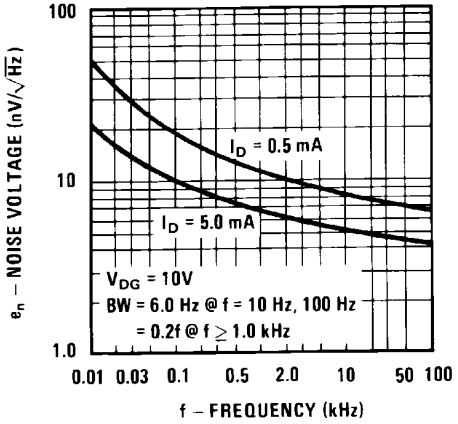

### Output Conductance vs. Drain Current



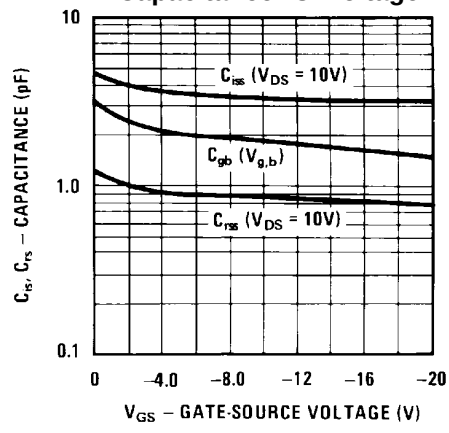

### Transconductance vs. Drain Current



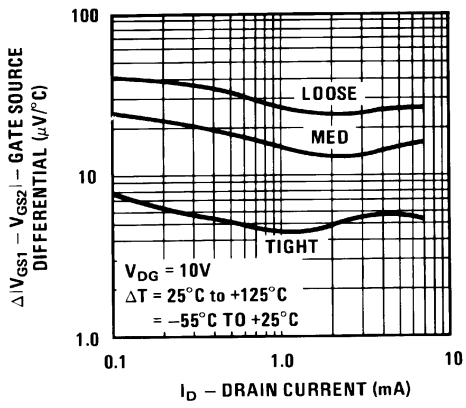

### Noise Voltage vs. Frequency




### Capacitance vs. Voltage

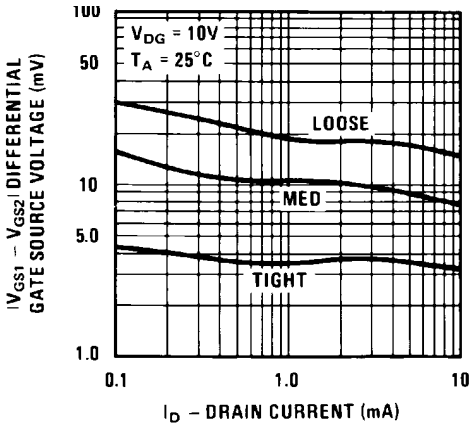



### Differential Drift

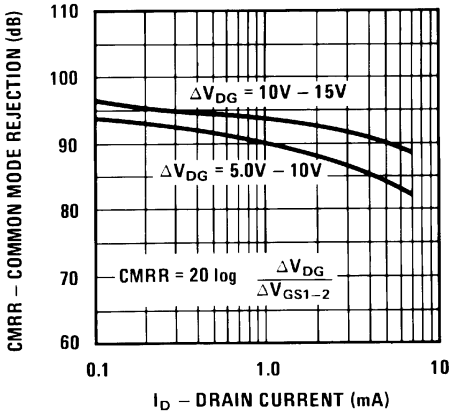


## Typical Characteristics (continued)

**Differential Offset**



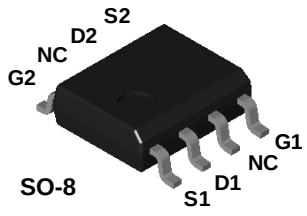

**CMRR vs. Drain Current**



FAIRCHILD SEMICONDUCTOR TM

*Discrete POWER & Signal Technologies*

# 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 |
|---|---|---|---|
| $V_{DG}$ | Drain-Gate Voltage | 40 | V |
| $V_{GS}$ | Gate-Source Voltage | 40 | 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

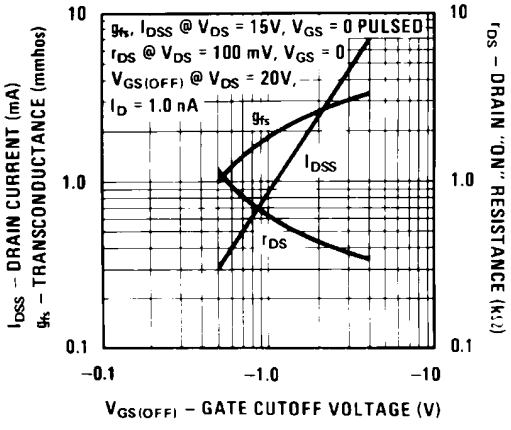
TA = 25°C unless otherwise noted

| Symbol | Parameter | Test Conditions | Min | Max | Units |
|---|---|---|---|---|---|
| **OFF CHARACTERISTICS** | | | | | |
| $V_{(BR)GSS}$ | Gate-Source Breakdown Voltage | $I_G$ = 1.0 µA, $V_{DS}$ = 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 µA | - 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 |
| **SMALL SIGNAL CHARACTERISTICS** | | | | | |
| $g_{fs}$ | Common Source Forward Transconductance | $V_{DS}$ = 20 V, $V_{GS}$ = 0, f = 1.0 kHz<br>$V_{DS}$ = 20 V, $I_D$ = 200 µA, f = 1.0 kHz | 1000<br>700 | 4000<br>1200 | µmhos<br>µmhos |
| $g_{oss}$ | Common Source Output Conductance | $V_{DS}$ = 20 V, $I_D$ = 200 µA, f = 1.0 kHz | | 20 | µmhos |
| $g_{os}$ | Common Source Output Conductance | $V_{DS}$ = 20 V, $I_D$ = 200 µA, f = 1.0 kHz | | 5.0 | µmhos |
| $V_{GS1} - V_{GS2}$ | Differential Match | $V_{DG}$ = 20 V, $I_D$ = 200 µA,<br>**NPDS8301**<br>**NPDS8302**<br>**NPDS8303** | | <br>5.0<br>10<br>15 | <br>mV<br>mV<br>mV |
| $\Delta V_{GS1} - V_{GS2}$ | Differential Drift | $V_{DS}$ = 20 V, $I_D$ = 200 µA,<br>$T_A$ = 25 to 85 °C **NPDS8301**<br>**NPDS8302**<br>**NPDS8303** | | <br>10<br>15<br>25 | <br>µV/°C<br>µV/°C<br>µV/°C |

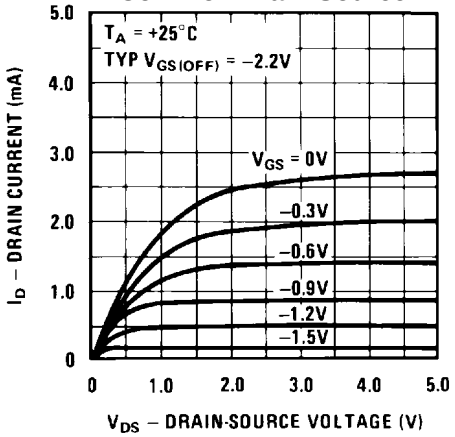
*Pulse Test: Pulse Width ≤ 300 ms, Duty Cycle ≤ 2%

## Typical Characteristics

**Parameter Interactions**

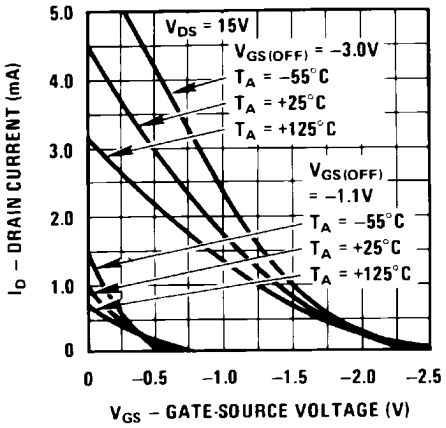



**Common Drain-Source**

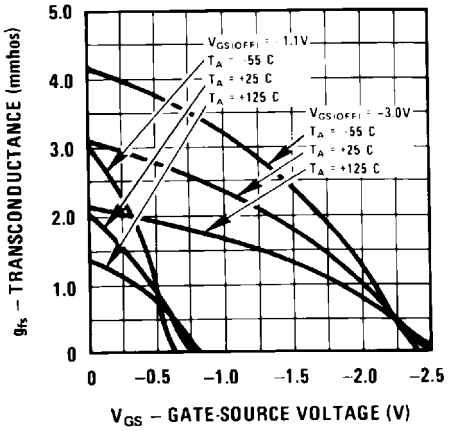


## Typical Characteristics (continued)

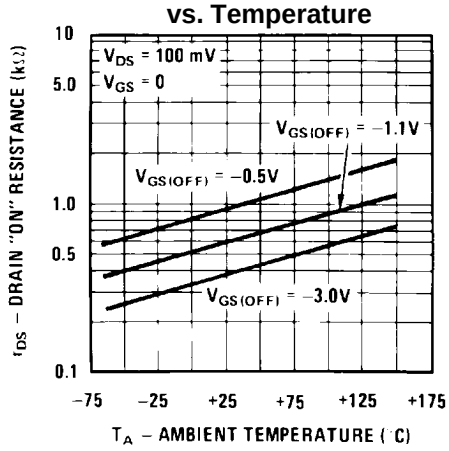
### Transfer Characteristics



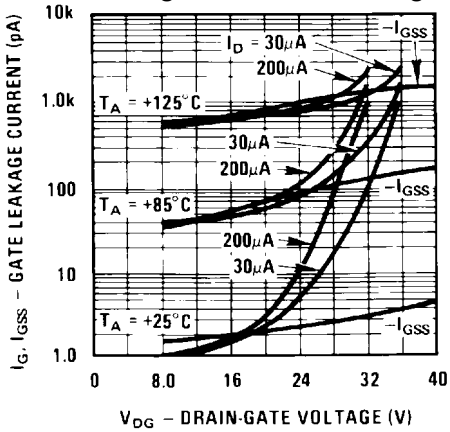

### Transfer Characteristics



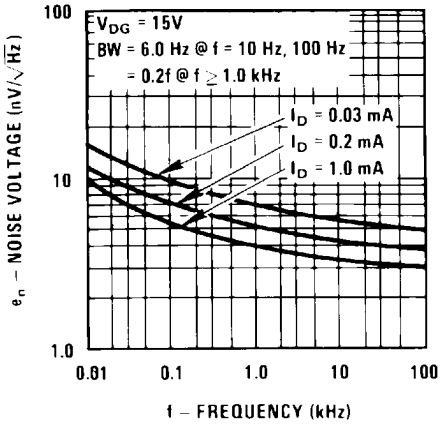

### Channel Resistance vs. Temperature



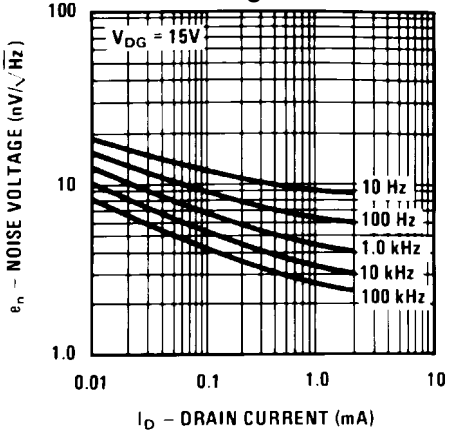

### Leakage Current vs. Voltage




### Noise Voltage vs. Frequency

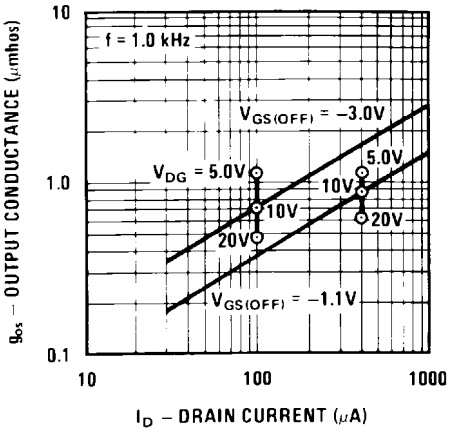



### Noise Voltage vs. Current

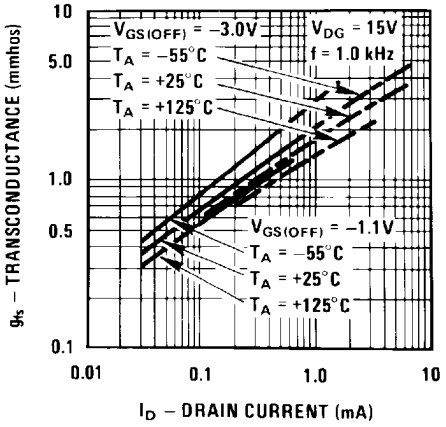


## Typical Characteristics (continued)

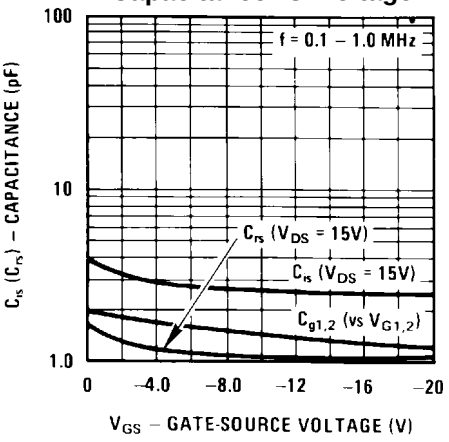
### Output Conductance vs. Drain Current



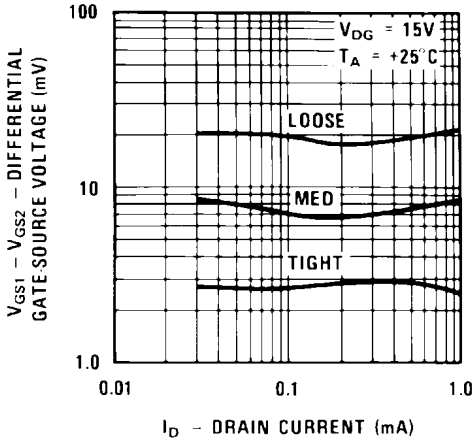

### Transconductance vs. Drain Current



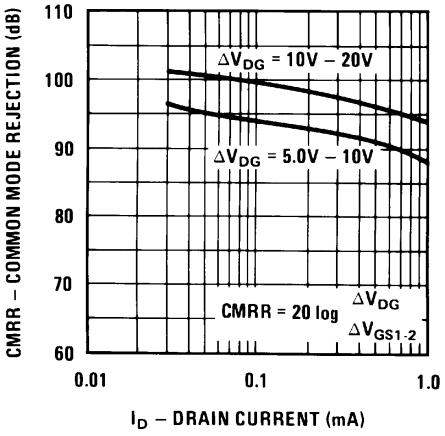

### Capacitance vs. Voltage




### Differential Offset



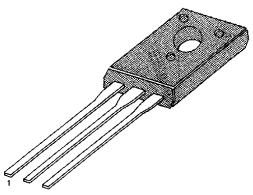

### CMRR vs. Drain Current



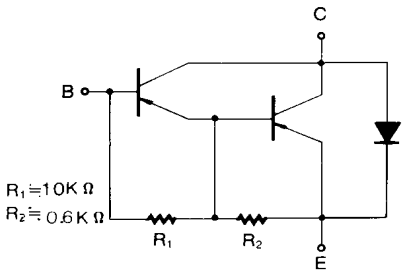
# NPN EPITAXIAL
# MJE800/801/803 SILICON DARLINGTON TRANSISTOR

**HIGH DC CURRENT GAIN**
**MIN $h_{FE}$= 750 I $_C$= -1.5 and -2.0A DC**
**MONOLITHIC CONSTRUCTION WITH**
**BUILT-IN BASE-EMITTER RESISTORS**
• Complement to MJE700/701/702/703

TO-126



1. Emitter 2. Collector 3. Base




## ABSOLUTE MAXIMUM RATINGS

| Characteristic | Symbol | Rating | Unit |
|---|---|---|---|
| Collector- Base Voltage | $V_{CBO}$ | | |
| : MJE800/801 | | 60 | V |
| : MJE802/803 | | 80 | V |
| Collector-Emitter Voltage | $V_{CEO}$ | | |
| : MJE800/801 | | 60 | V |
| : MJE802/803 | | 80 | V |
| Emitter- Base Voltage | $V_{EBO}$ | 5 | V |
| Collector Current | $I_C$ | 4 | A |
| Base Current | $I_B$ | 0.1 | A |
| Collector Dissipation ($T_C$=25°C) | $P_C$ | 40 | W |
| Junction Temperature | $T_J$ | 150 | °C |
| Storage Temperature | $T_{STG}$ | -55 ~ 150 | °C |

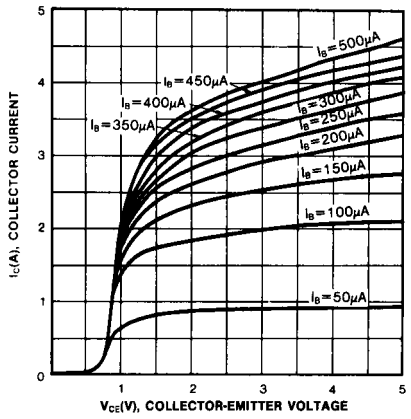
## ELECTRICAL CHARACTERISTICS ($T_C$=25°C)

| Characteristic | Symbol | Test Condition | Min | Max | Unit |
|---|---|---|---|---|---|
| Collector Emitter Breakdown Voltage | $BV_{CEO}$ | $I_C$ = 50mA, $I_B$ = 0 | | | |
| : MJE800/801 | | | 60 | | V |
| : MJE802/803 | | | 80 | | V |
| Collector Cutoff Current | $I_{CEO}$ | | | | |
| : MJE800/801 | | $V_{CE}$ = 60V, $I_B$ = 0 | | 100 | µA |
| : MJE802/803 | | $V_{CE}$ = 80V, $I_B$ = 0 | | 100 | µA |
| Collector Cutoff Current | $I_{CBO}$ | $V_{CB}$ = Rated $BV_{CEO}$, $I_E$ = 0 | | 100 | µA |
| | | $V_{CB}$ = Rated $BV_{CEO}$, $I_E$ = 0 $T_C$ = 100°C | | 500 | µA |
| Emitter Cutoff Current | $I_{EBO}$ | $V_{BE}$ = 5V, $I_C$ = 0 | | 2 | mA |
| DC Current Gain : MJE800/802 | $h_{FE}$ | $V_{CE}$ = 3V, $I_C$ = 1.5A | 750 | | |
| : MJE801/803 | | $V_{CE}$ = 3V, $I_C$ = 2A | 750 | | |
| : ALL DEVICES | | $V_{CE}$ = 3V, $I_C$ = 4A | 100 | | |
| Collector-Emitter Saturation Voltage | $V_{CE}$(sat) | | | | |
| : MJE800/802 | | $I_C$ = 1.5A, $I_B$ = 30mA | | 2.5 | V |
| : MJE801/803 | | $I_C$ = 2A, $I_B$ = 40mA | | 2.8 | V |
| : ALL DEVICES | | $I_C$ = 4A, $I_B$ = 40mA | | 3 | V |
| Base-Emitter On Voltage | $V_{BE}$(on) | | | | |
| : MJE800/802 | | $V_{CE}$ = 3V, $I_C$ = 1.5A | | 1.2 | V |
| : MJE801/803 | | $V_{CE}$ = 3V, $I_C$ = 2A | | 2.5 | V |
| : ALL DEVICES | | $V_{CE}$ = 3V, $I_C$ = 4A | | 3 | V |

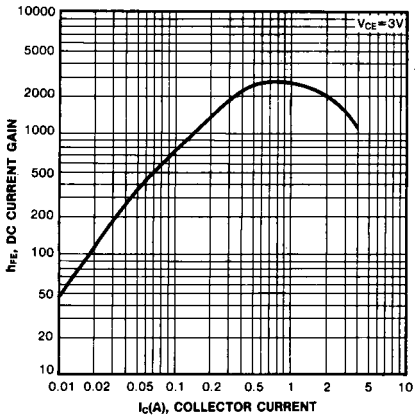


FAIRCHILD SEMICONDUCTOR TM

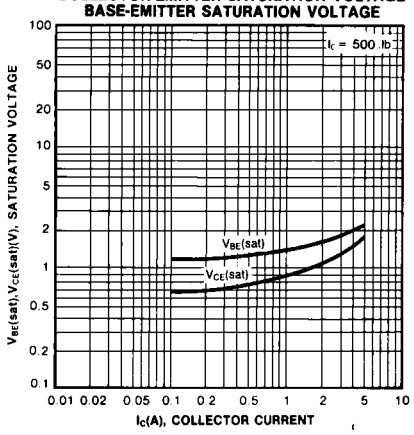
STATIC CHARACTERISTIC



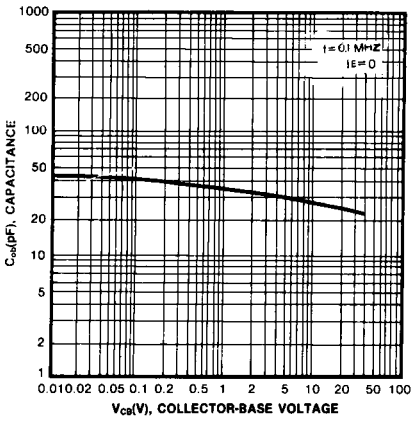

DC CURRENT GAIN



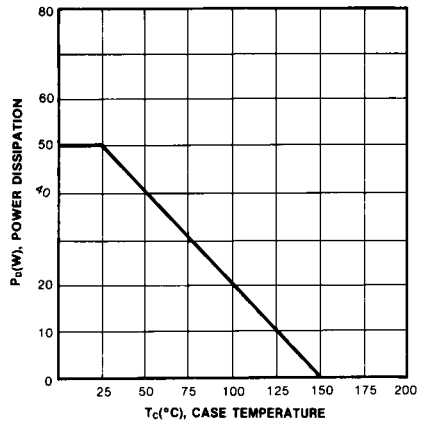

COLLECTOR-EMITTER SATURATION VOLTAGE
BASE-EMITTER SATURATION VOLTAGE



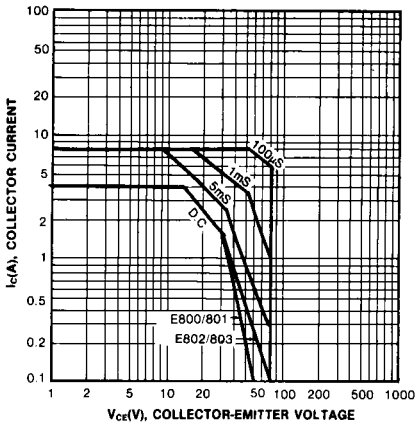

COLLECTOR OUTPUT CAPACITANCE




POWER DERATING




SAFE OPERATING AREA



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|---|---|---|
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