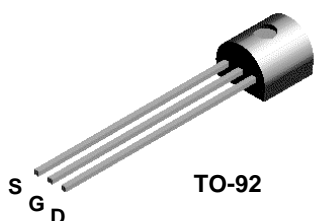


**BF244A  
BF244B  
BF244C**



**N-Channel RF Amplifier**

This device is designed for RF amplifier and mixer applications operating up to 450 MHz, and for analog switching requiring low capacitance. Sourced from Process 50.

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

Symbol	Parameter	Value	Units
V <sub>DG</sub>	Drain-Gate Voltage	30	V
V <sub>GS</sub>	Gate-Source Voltage	- 30	V
I <sub>D</sub>	Drain Current	50	mA
I <sub>GF</sub>	Forward Gate Current	10	mA
T <sub>stg</sub>	Storage 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.

**Thermal Characteristics** TA = 25°C unless otherwise noted

Symbol	Characteristic	Max	Units
		BF244A / BF244B / BF244C	
P <sub>D</sub>	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	125	°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	357	°C/W

# N-Channel RF Amplifier

(continued)

BF244A / BF244B / BF244C

## Electrical Characteristics

TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
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### OFF CHARACTERISTICS

V <sub>(BR)GSS</sub>	Gate-Source Breakdown Voltage	I <sub>G</sub> = 1.0 μA, V <sub>DS</sub> = 0	30			V
I <sub>GSS</sub>	Gate Reverse Current	V <sub>GS</sub> = -20 V, V <sub>DS</sub> = 0			5.0	nA
V <sub>GSS(off)</sub>	Gate-Source Cutoff Voltage	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 10 nA	-0.5		-8.0	V
V <sub>GS</sub>	Gate-Source Voltage	V <sub>DS</sub> = 15 V, I <sub>D</sub> = 200 μA	<b>244A</b>	-0.4	-2.2	V
			<b>244B</b>	-1.6	-3.8	V
			<b>244C</b>	-3.2	-7.5	V

### ON CHARACTERISTICS

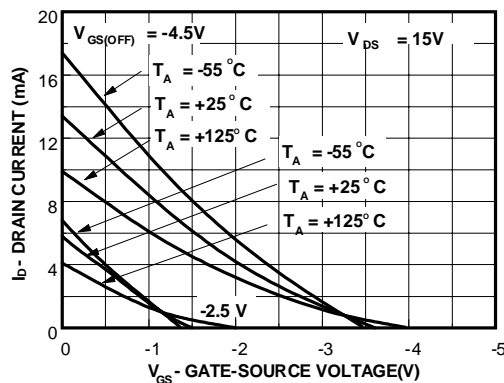
I <sub>DSS</sub>	Zero-Gate Voltage Drain Current	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 0				
			<b>244A</b>	2.0	6.5	mA
			<b>244B</b>	6.0	15	mA
			<b>244C</b>	12	25	mA

### SMALL SIGNAL CHARACTERISTICS

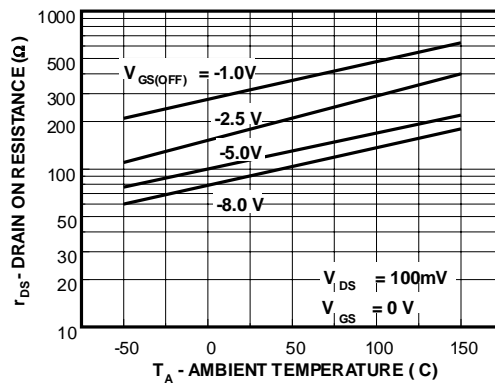
y <sub>fs</sub>	Forward Transfer Admittance	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 0, f = 1.0 kHz V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 0, f = 200 MHz	3.0	5.6	6.5	mmhos mmhos
y <sub>os</sub>	Output Admittance	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 0, f = 1.0 kHz		40		μmhos
y <sub>rs</sub>	Reverse Transfer Admittance	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 0, f = 200 MHz		1.0		μmhos
C <sub>iSS</sub>	Input Capacitance	V <sub>DS</sub> = 20 V, V <sub>GS</sub> = -1.0 V		3.0		pF
C <sub>rSS</sub>	Reverse Transfer Capacitance	V <sub>DS</sub> = 20 V, V <sub>GS</sub> = -1.0 V, f = 1.0 MHz		0.7		pF
C <sub>oSS</sub>	Output Capacitance	V <sub>DS</sub> = 20 V, V <sub>GS</sub> = -1.0 V, f = 1.0 MHz		0.9		pF
NF	Noise Figure	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 0, R <sub>G</sub> = 1.0 kΩ, f = 100 MHz		1.5		dB
F(Y <sub>fs</sub> )	Cut-Off Frequency	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 0		700		MHz

## Typical Characteristics

**Transfer Characteristics**

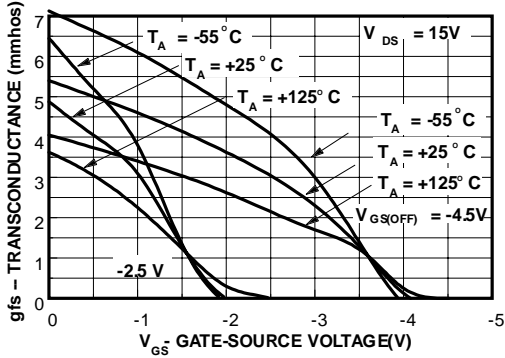


**Channel Resistance vs Temperature**

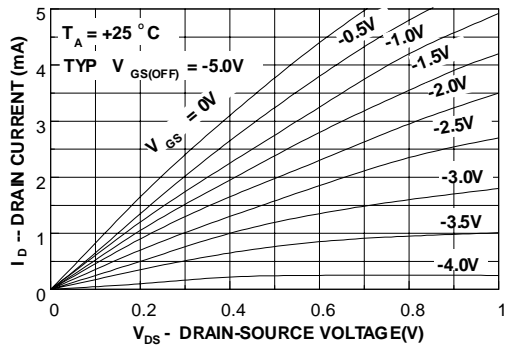


Typical Characteristics (continued)

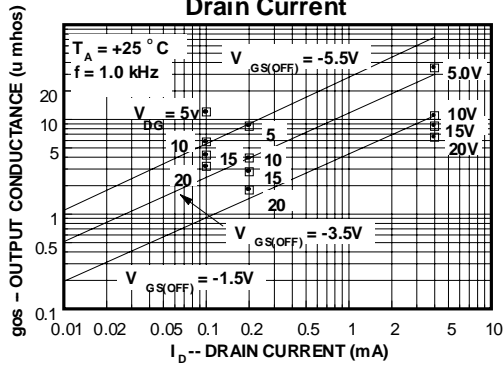
Transconductance Characteristics



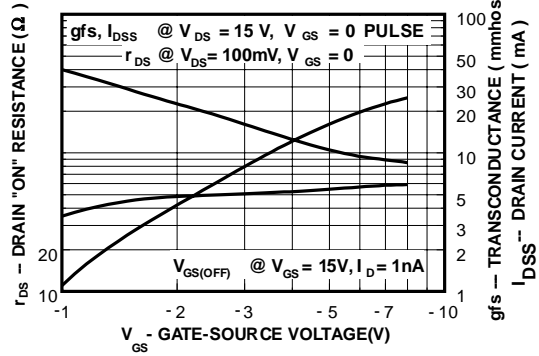
Common Drain-Source Characteristics



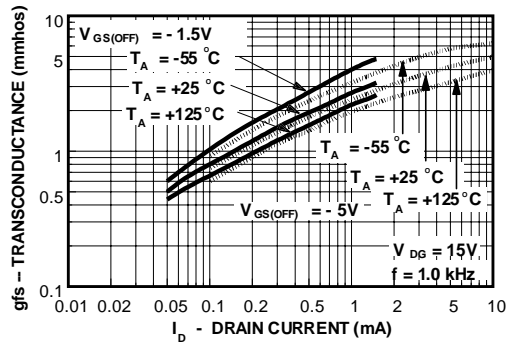
Output Conductance vs Drain Current



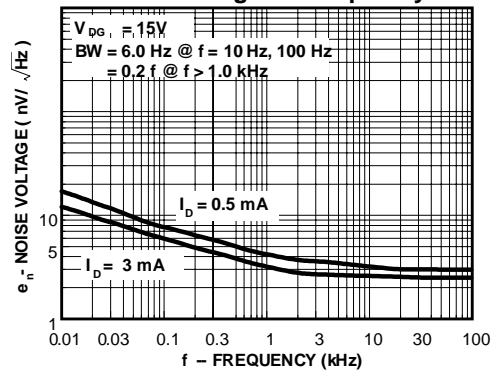
Transconductance Parameter Interactions



Transconductance vs Drain Current



Noise Voltage vs Frequency



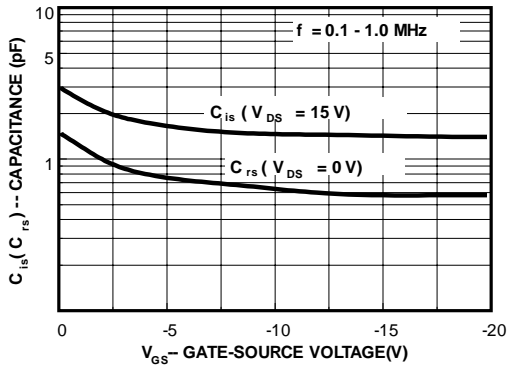
# N-Channel RF Amplifier

(continued)

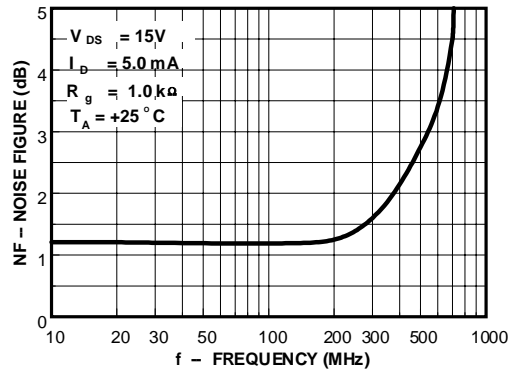
BF244A / BF244B / BF244C

## Typical Characteristics (continued)

### Capacitance vs Voltage

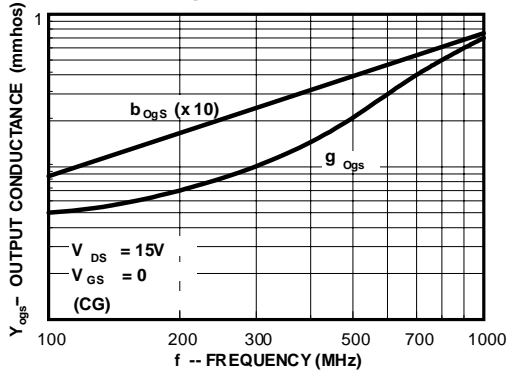


### Noise Figure Frequency

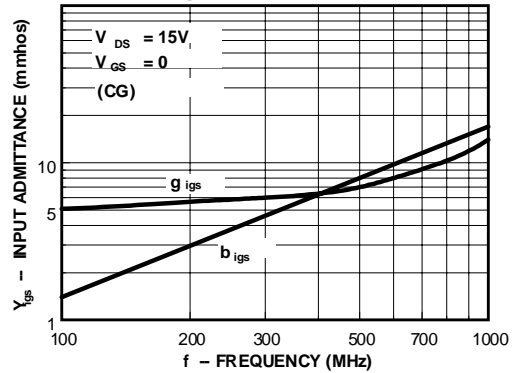


## Common Gate Characteristics

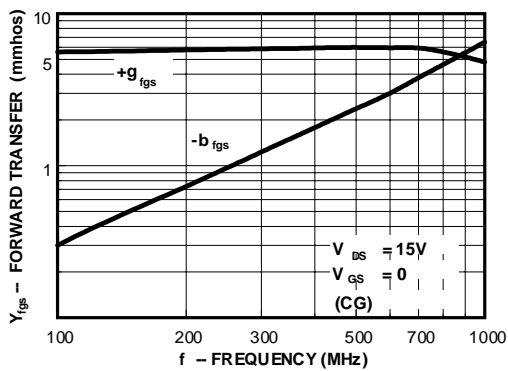
### Output Admittance



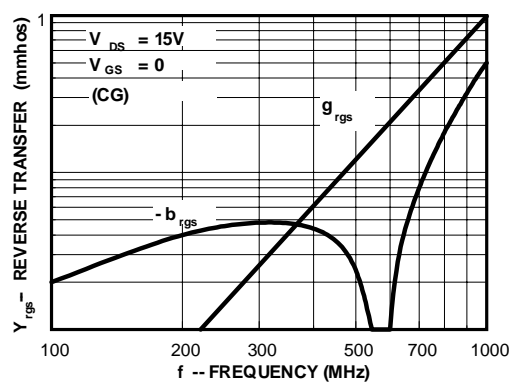
### Input Admittance



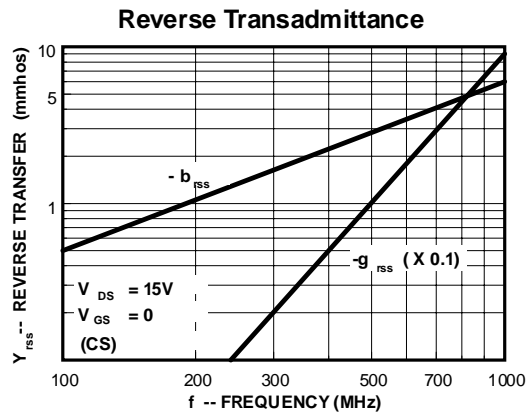
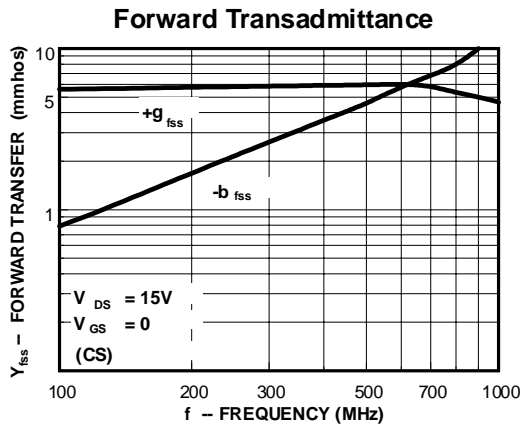
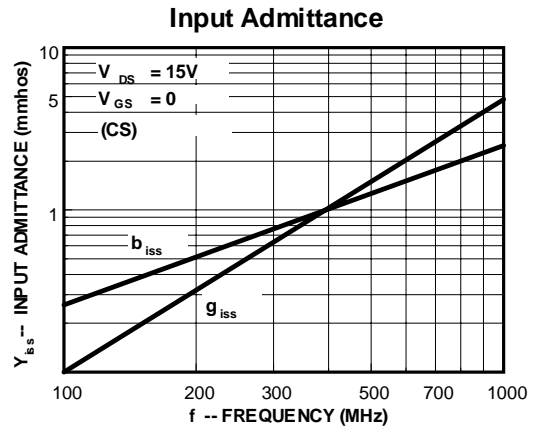
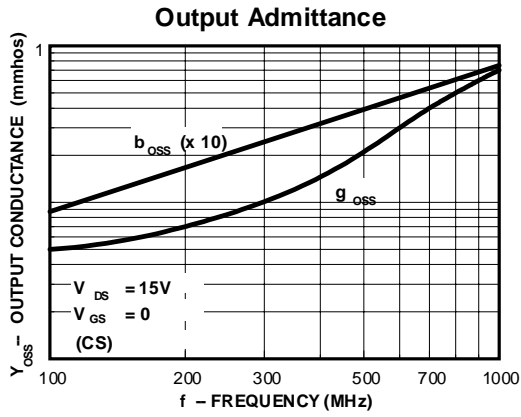
### Forward Transadmittance



### Reverse Transadmittance



Common Source Characteristics



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