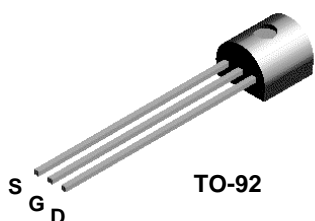




**BF244A**  
**BF244B**  
**BF244C**



**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

$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0 \mu A, V_{DS} = 0$	30			V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = -20 V, V_{DS} = 0$			5.0	nA
$V_{GSS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15 V, I_D = 10 nA$	-0.5		-8.0	V
$V_{GS}$	Gate-Source Voltage	$V_{DS} = 15 V, I_D = 200 \mu A$				
		<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

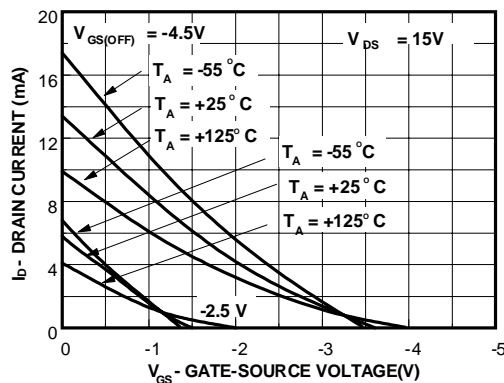
$I_{DSS}$	Zero-Gate Voltage Drain Current	$V_{DS} = 15 V, V_{GS} = 0$				
		<b>244A</b>	2.0		6.5	mA
		<b>244B</b>	6.0		15	mA
		<b>244C</b>	12		25	mA

### SMALL SIGNAL CHARACTERISTICS

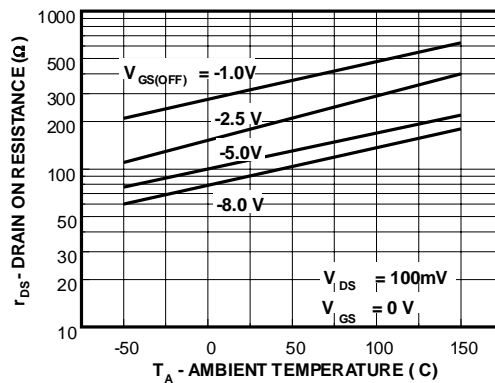
$y_{fs}$	Forward Transfer Admittance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 200 MHz$	3.0	5.6	6.5	mmhos mmhos
$y_{os}$	Output Admittance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$		40		$\mu mhos$
$y_{rs}$	Reverse Transfer Admittance	$V_{DS} = 15 V, V_{GS} = 0, f = 200 MHz$		1.0		$\mu mhos$
$C_{iss}$	Input Capacitance	$V_{DS} = 20 V, V_{GS} = -1.0 V$		3.0		pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 20 V, V_{GS} = -1.0 V,$ $f = 1.0 MHz$		0.7		pF
$C_{oss}$	Output Capacitance	$V_{DS} = 20 V, V_{GS} = -1.0 V,$ $f = 1.0 MHz$		0.9		pF
NF	Noise Figure	$V_{DS} = 15 V, V_{GS} = 0, R_G = 1.0 k\Omega,$ $f = 100 MHz$		1.5		dB
$F(Y_{fs})$	Cut-Off Frequency	$V_{DS} = 15 V, V_{GS} = 0$		700		MHz

## Typical Characteristics

Transfer Characteristics

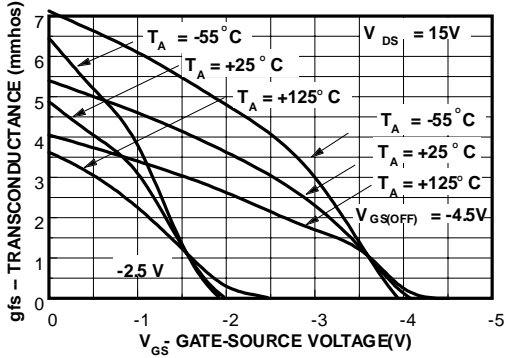


Channel Resistance vs Temperature

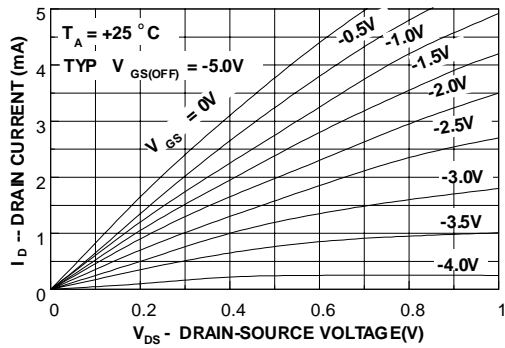


Typical Characteristics (continued)

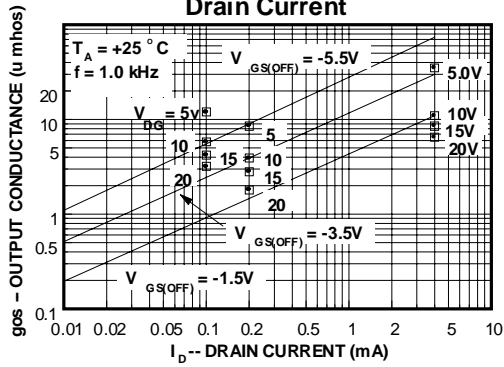
Transconductance Characteristics



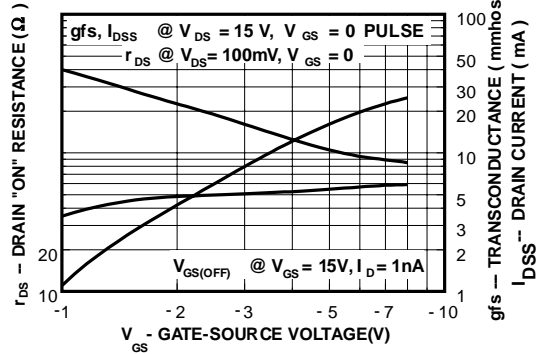
Common Drain-Source Characteristics



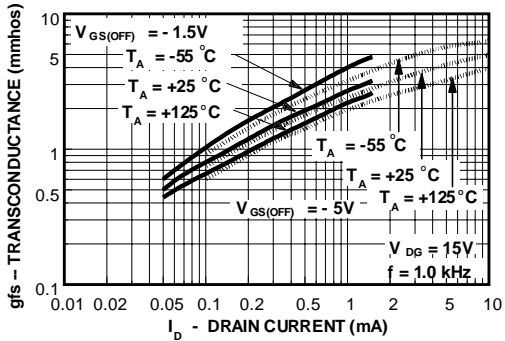
Output Conductance vs Drain Current



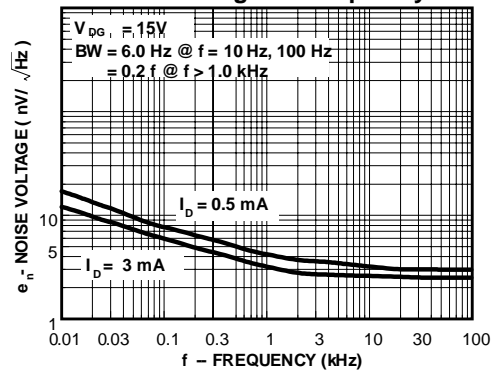
Transconductance Parameter Interactions



Transconductance vs Drain Current



Noise Voltage vs Frequency



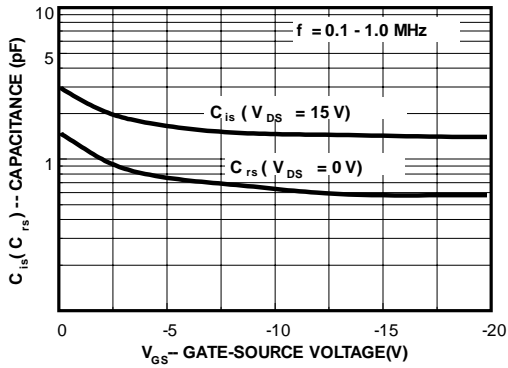
# N-Channel RF Amplifier

(continued)

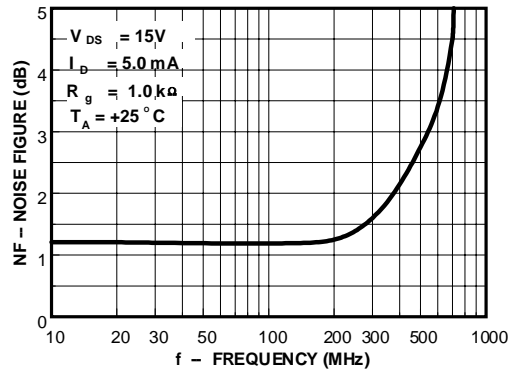
BF244A / BF244B / BF244C

## Typical Characteristics (continued)

### Capacitance vs Voltage

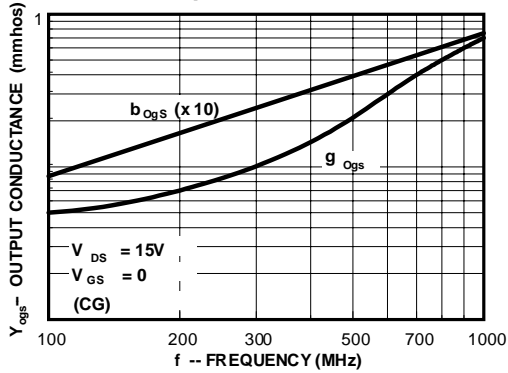


### Noise Figure Frequency

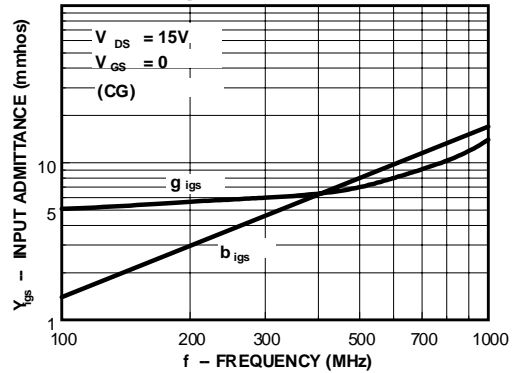


## Common Gate Characteristics

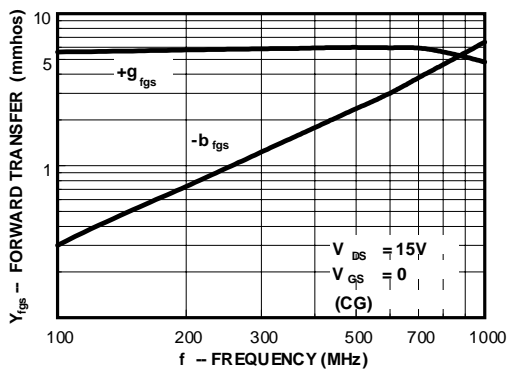
### Output Admittance



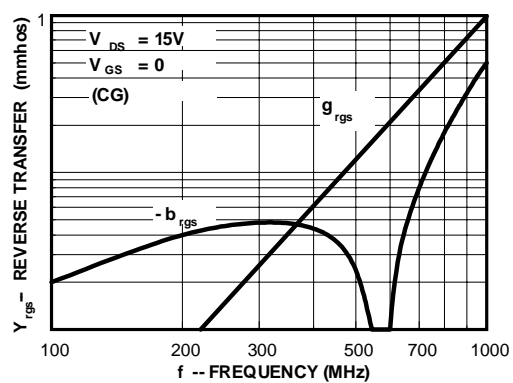
### Input Admittance



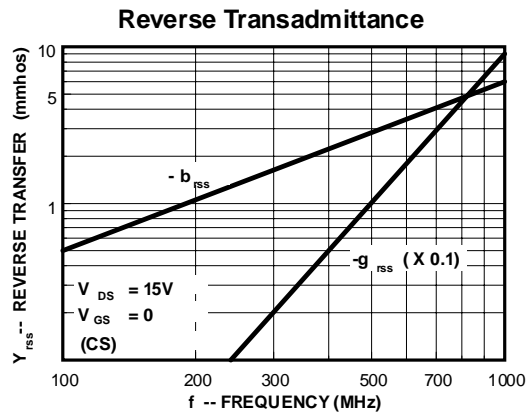
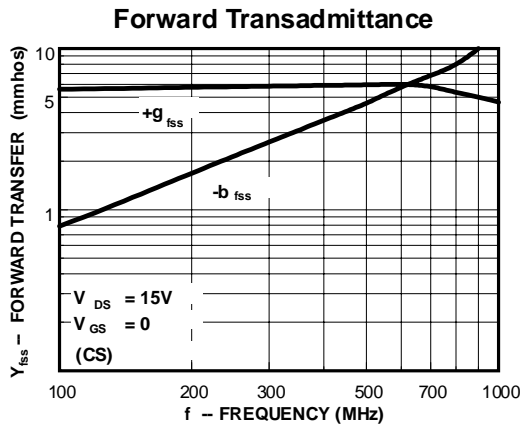
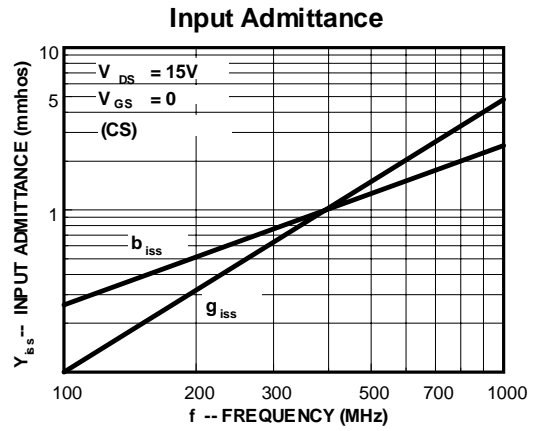
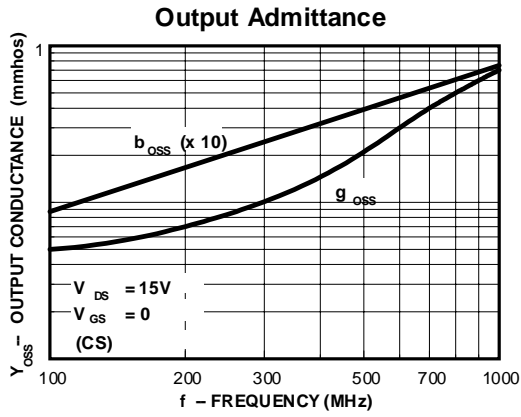
### Forward Transadmittance



### Reverse Transadmittance



Common Source Characteristics



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