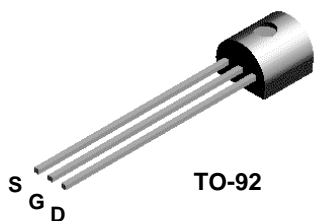




THE DATASHEET OF BF244A



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 _{DG}	Drain-Gate Voltage	30	V
V _{GS}	Gate-Source Voltage	- 30	V
I _D	Drain Current	50	mA
I _{GF}	Forward Gate Current	10	mA
T _{stg}	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 _D	Total Device Dissipation Derate above 25°C	350	mW
		2.8	mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	125	°C/W
R _{θJA}	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	$V_{DS} = 15 V, I_D = 200 \mu A$	244A 244B 244C	-0.4 -1.6 -3.2	-2.2 -3.8 -7.5	V V V

ON CHARACTERISTICS

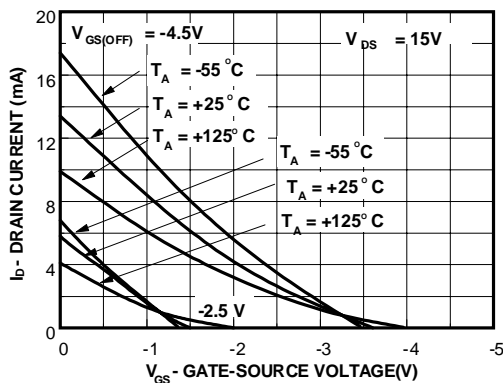
I_{DSS}	Zero-Gate Voltage Drain Current	$V_{DS} = 15 V, V_{GS} = 0$	244A 244B 244C	2.0 6.0 12	6.5 15 25	mA mA mA
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SMALL SIGNAL CHARACTERISTICS

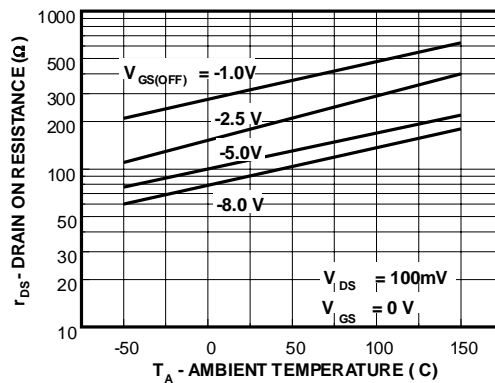
y_{fs}	Forward Transfer Admittance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 200 MHz$	3.0	5.6	6.5	mmhos mmhos
y_{os}	Output Admittance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$		40		$\mu mhos$
y_{rs}	Reverse Transfer Admittance	$V_{DS} = 15 V, V_{GS} = 0, f = 200 MHz$		1.0		$\mu mhos$
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

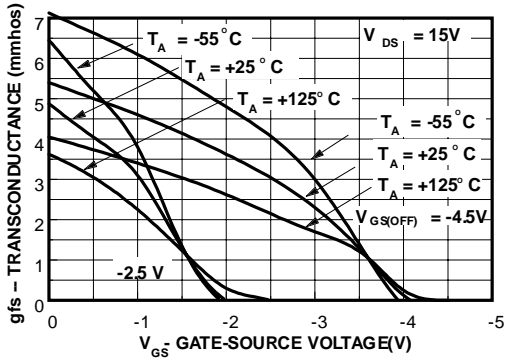


Channel Resistance vs Temperature

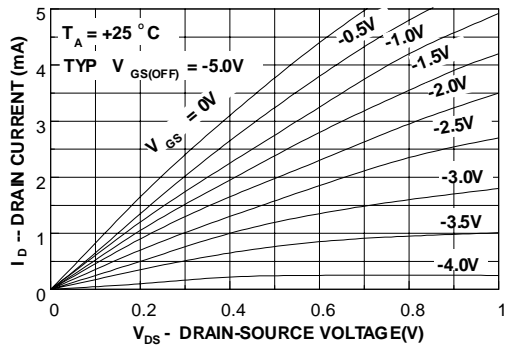


Typical Characteristics (continued)

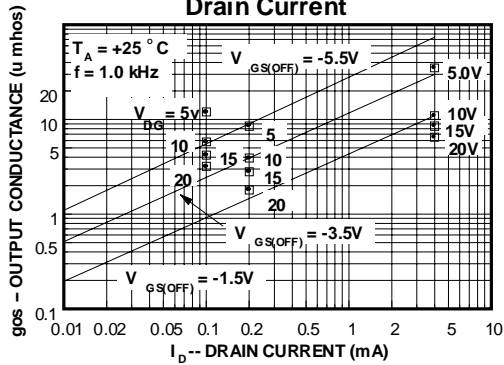
Transconductance Characteristics



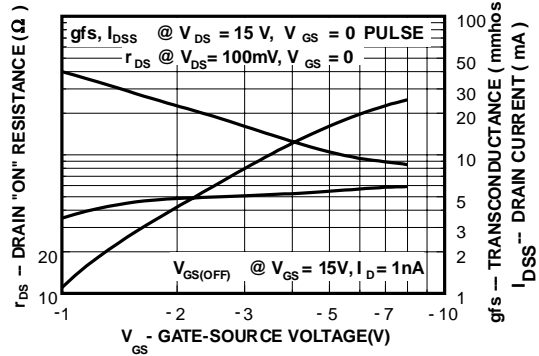
Common Drain-Source Characteristics



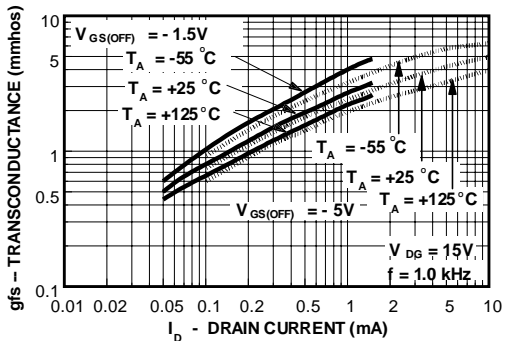
Output Conductance vs Drain Current



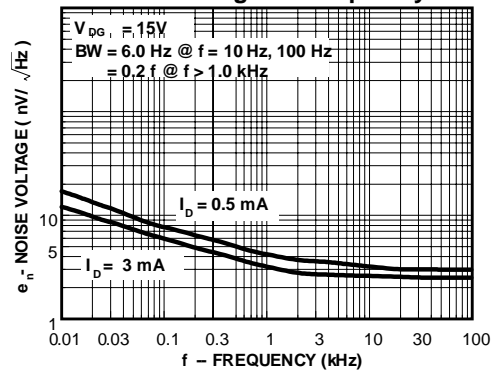
Transconductance Parameter Interactions



Transconductance vs Drain Current



Noise Voltage vs Frequency



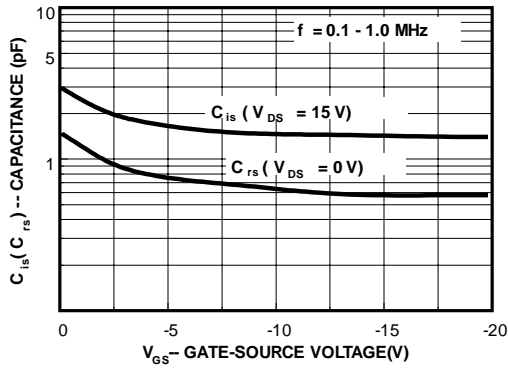
N-Channel RF Amplifier

(continued)

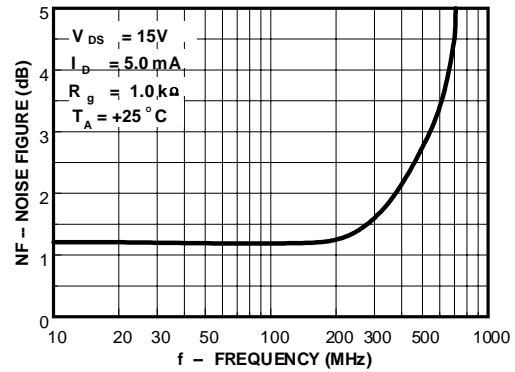
BF244A / BF244B / BF244C

Typical Characteristics (continued)

Capacitance vs Voltage

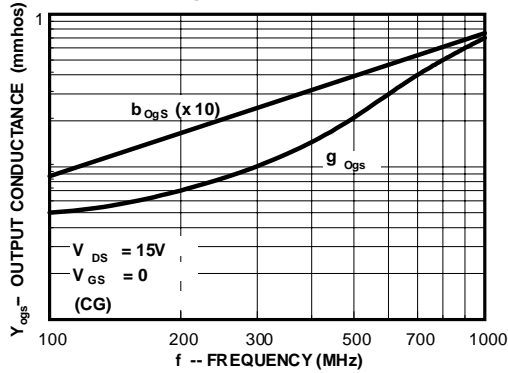


Noise Figure Frequency

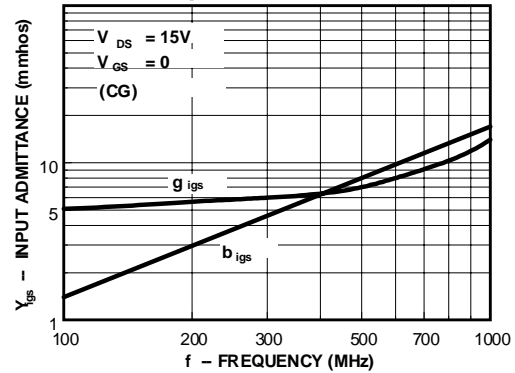


Common Gate Characteristics

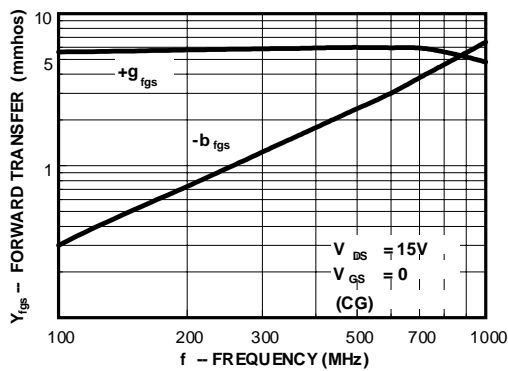
Output Admittance



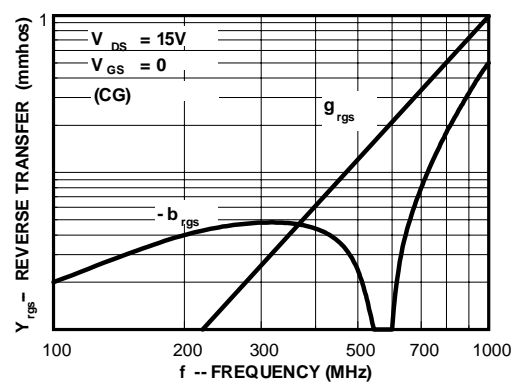
Input Admittance



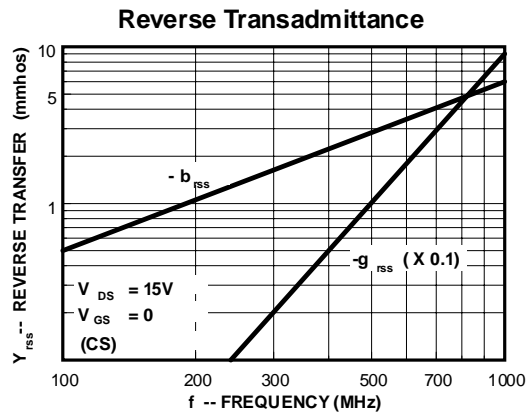
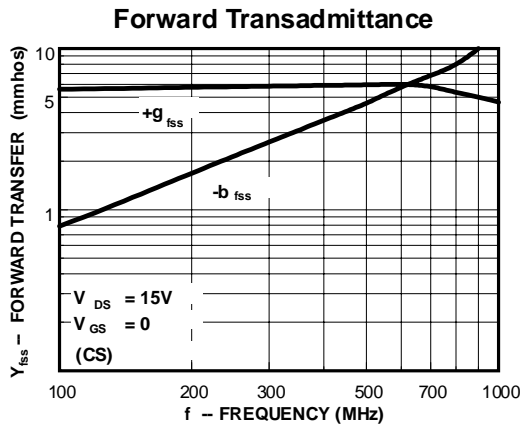
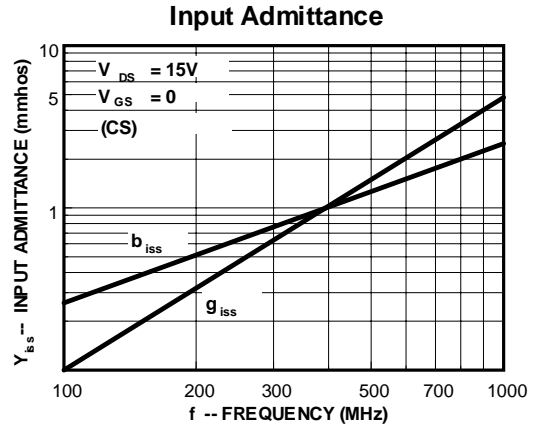
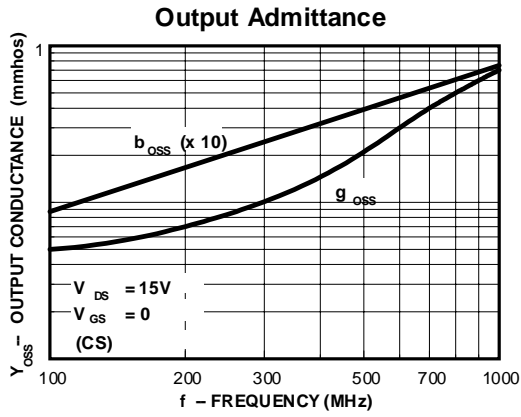
Forward Transadmittance



Reverse Transadmittance



Common Source Characteristics



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