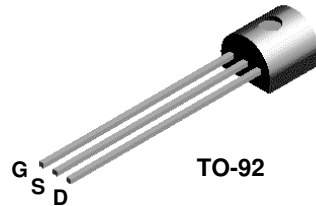
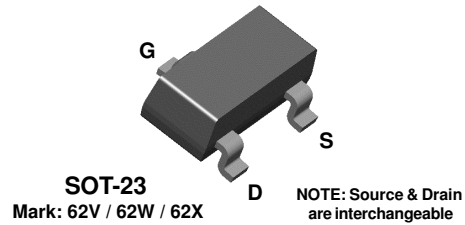


**J210
J211
J212**



**MMBFJ210
MMBFJ211
MMBFJ212**



N-Channel RF Amplifier

This device is designed for HF/VHF mixer/amplifier and applications where Process 50 is not adequate. Sufficient gain and low noise for sensitive receivers. Sourced from Process 90.

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.

Thermal Characteristics

TA = 25 °C unless otherwise noted

Symbol	Characteristic	Max		Units
		J210-212	*MMBFJ210-212	
P _D	Total Device Dissipation Derate above 25°C	350 2.8	225 1.8	mW mW/°C
R _{θJC}	Thermal Resistance, Junction to Case	125		°C/W
R _{θJA}	Thermal Resistance, Junction to Ambient	357	556	°C/W

* Device mounted on FR-4 PCB 1.6" X 1.6" X 0.06."

J210 / J211 / J212 / MMBFJ210 / MMBFJ211 / MMBFJ212

N-Channel RF Amplifier

(continued)

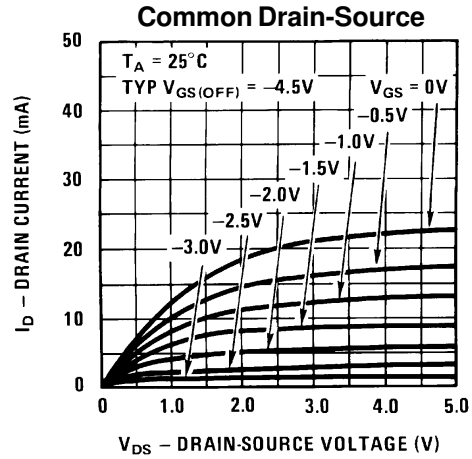
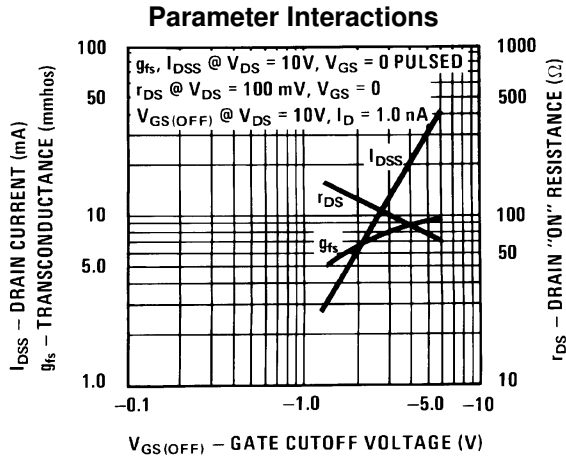
Electrical Characteristics

TA = 25 °C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Max	Units
OFF CHARACTERISTICS					
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = 1.0 \mu A, V_{DS} = 0$	- 25		V
I_{GSS}	Gate Reverse Current	$V_{GS} = 15 V, V_{DS} = 0$		- 100	pA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15 V, I_D = 1.0 nA$	210 211 212	-1.0 - 2.5 - 4.0	V V V
ON CHARACTERISTICS					
I_{DSS}	Zero-Gate Voltage Drain Current*	$V_{DS} = 15 V, V_{GS} = 0$	210 211 212	2.0 7.0 15	m A m A m A
SMALL SIGNAL CHARACTERISTICS					
g_{fs}	Common Source Forward Transconductance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$	210 211 212	4000 6000 7000	$\mu mhos$ $\mu mhos$ $\mu mhos$
g_{oss}	Common Source Output Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$		200	$\mu mhos$

* Pulse Test: Pulse Width $\leq 300 \mu s$

Typical Characteristics

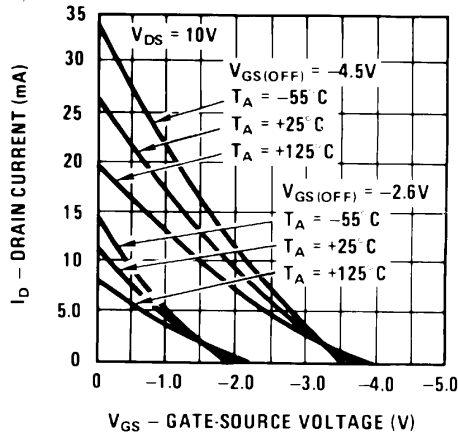


J210 / J211 / J212 / MMBFJ210 / MMBFJ211 / MMBFJ212

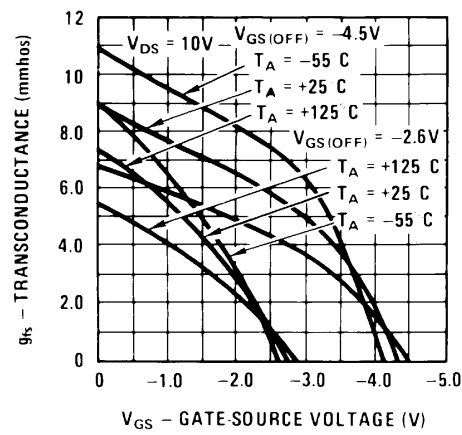
N-Channel RF Amplifier (continued)

Typical Characteristics (continued)

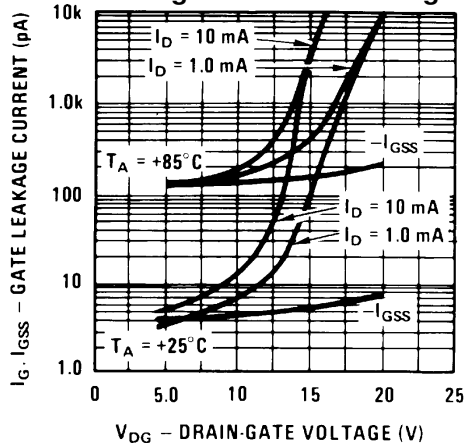
Transfer Characteristics



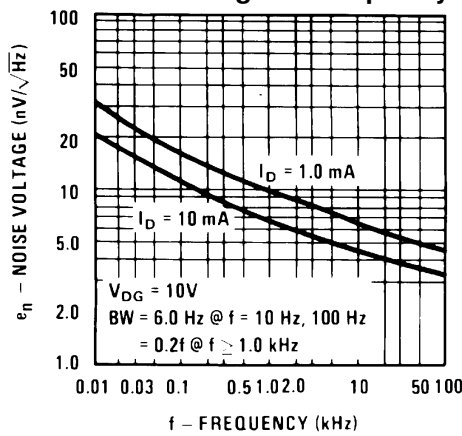
Transfer Characteristics



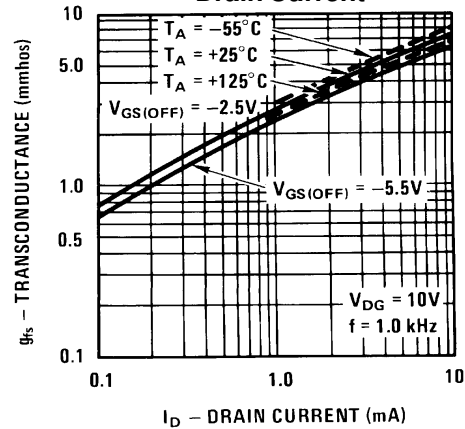
Leakage Current vs. Voltage



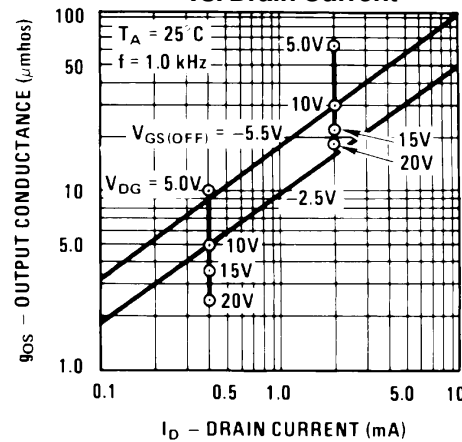
Noise Voltage vs. Frequency



Transconductance vs. Drain Current

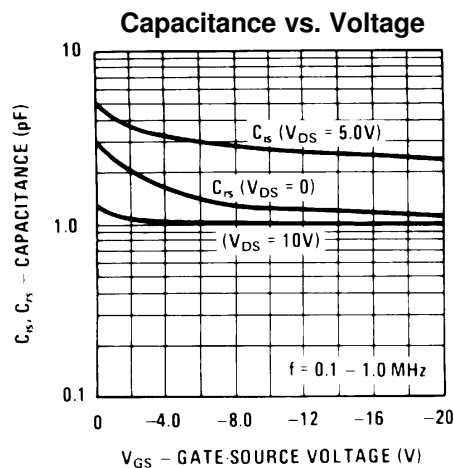


Output Conductance vs. Drain Current

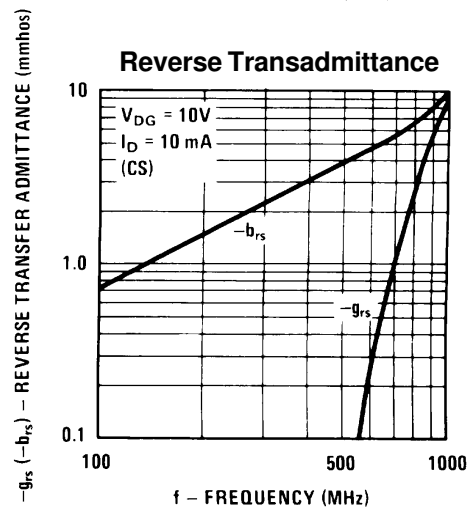
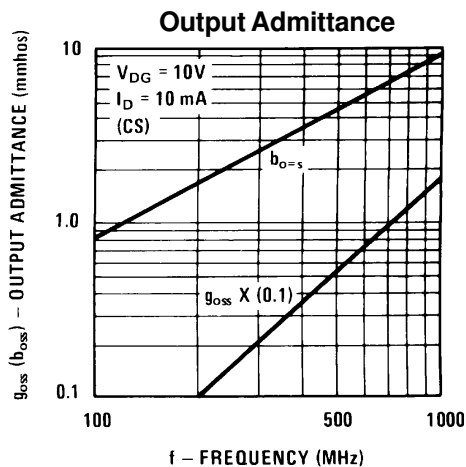
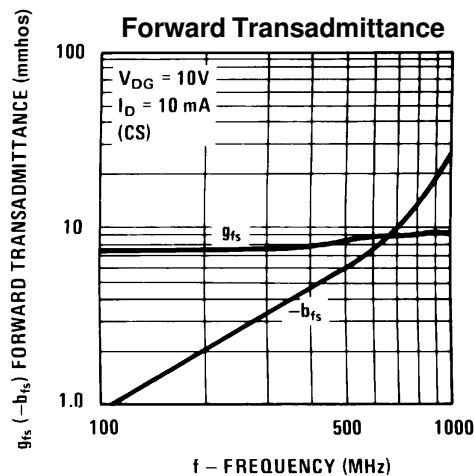
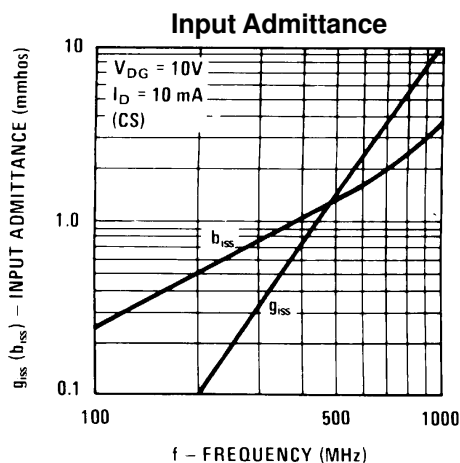


J210 / J211 / J212 / MMBFJ210 / MMBFJ211 / MMBFJ212

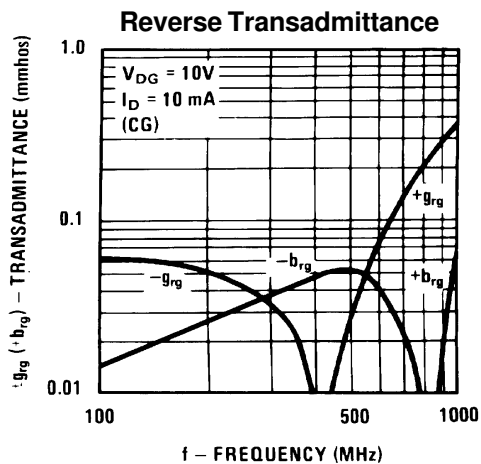
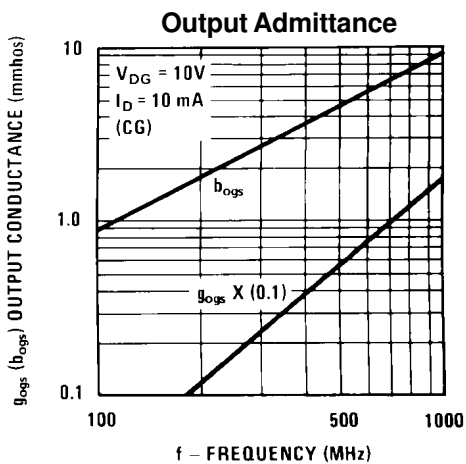
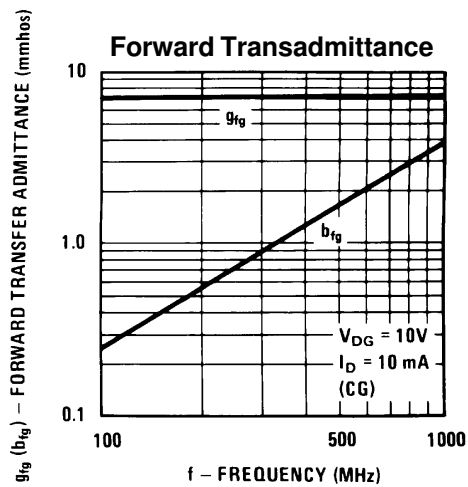
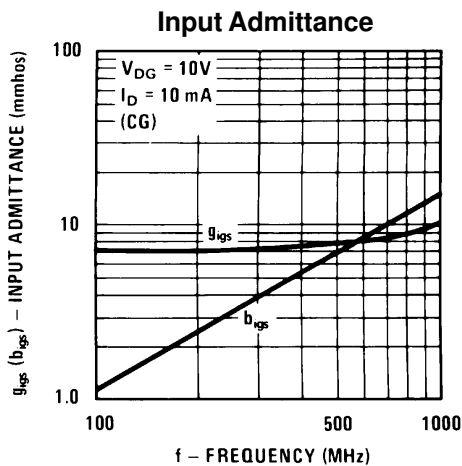
Typical Characteristics (continued)



Common Source Characteristics



Common Gate Characteristics



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No Identification Needed	Full Production	This datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice in order to improve design.
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