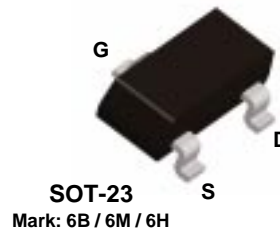
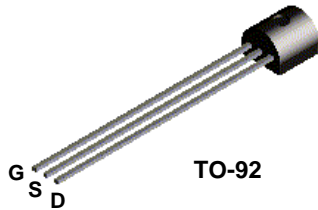


**2N5484  
2N5485  
2N5486**

**MMBF5484  
MMBF5485  
MMBF5486**



## N-Channel RF Amplifier

This device is designed primarily for electronic switching applications such as low On Resistance analog switching. Sourced from Process 50.

### Absolute Maximum Ratings\*

TA = 25°C unless otherwise noted

Symbol	Parameter	Value	Units
V <sub>DG</sub>	Drain-Gate Voltage	25	V
V <sub>GS</sub>	Gate-Source Voltage	- 25	V
I <sub>GF</sub>	Forward Gate Current	10	mA
T <sub>J</sub> , T <sub>stg</sub>	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
		2N5484	*MMBF5484	
P <sub>D</sub>	Total Device Dissipation	350	225	mW
	Derate above 25°C	2.8	1.8	mW/°C
R <sub>θJC</sub>	Thermal Resistance, Junction to Case	125		°C/W
R <sub>θJA</sub>	Thermal Resistance, Junction to Ambient	357	556	°C/W

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

2N5484 / 2N5485 / 2N5486 / MMBF5484 / MMBF5485 / MMBF5486

# N-Channel RF Amplifier

(continued)

## Electrical Characteristics

TA = 25°C unless otherwise noted

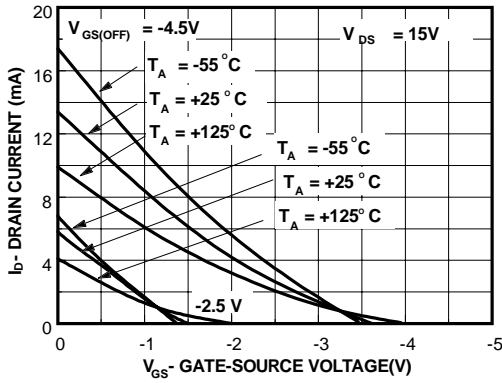
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS</b>						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = -1.0 \mu A, V_{DS} = 0$	-25			V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = -20 V, V_{DS} = 0$ $V_{GS} = -20 V, V_{DS} = 0, T_A = 100^\circ C$			-1.0 -0.2	nA $\mu A$
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15 V, I_D = 10 nA$	-0.3 -0.5 -2.0		-3.0 -4.0 -6.0	V V V
<b>ON CHARACTERISTICS</b>						
$I_{DSS}$	Zero-Gate Voltage Drain Current*	$V_{DS} = 15 V, V_{GS} = 0$	1.0 4.0 8.0		5.0 10 20	mA mA mA
<b>SMALL SIGNAL CHARACTERISTICS</b>						
$g_{fs}$	Forward Transfer Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$	3000 3500 4000		6000 7000 8000	$\mu mhos$ $\mu mhos$ $\mu mhos$
$Re(y_{is})$	Input Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 400 MHz$			100 1000	$\mu mhos$ $\mu mhos$
$g_{os}$	Output Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$			50 60 75	$\mu mhos$ $\mu mhos$ $\mu mhos$
$Re(y_{os})$	Output Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 400 MHz$			75 100	$\mu mhos$ $\mu mhos$
$Re(y_{fs})$	Forward Transconductance	$V_{DS} = 15 V, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 400 MHz$	2500 3000 3500			$\mu mhos$ $\mu mhos$ $\mu mhos$
$C_{iss}$	Input Capacitance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 MHz$			5.0	pF
$C_{rss}$	Reverse Transfer Capacitance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 MHz$			1.0	pF
$C_{oss}$	Output Capacitance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 MHz$			2.0	pF
NF	Noise Figure	$V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 100 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 400 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 100 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 400 MHz$		4.0	3.0 2.0 4.0	dB dB dB dB

\*Pulse Test: Pulse Width  $\leq 300 ms$ , Duty Cycle  $\leq 2\%$

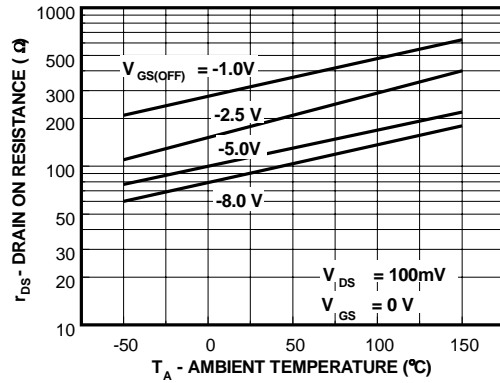
2N5484 / 2N5485 / 2N5486 / MMBF5484 / MMBF5485 / MMBF5486

Typical Characteristics

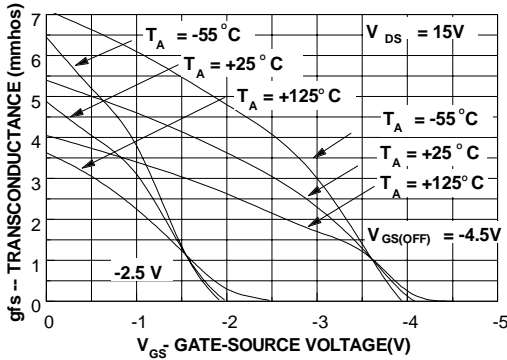
Transfer Characteristics



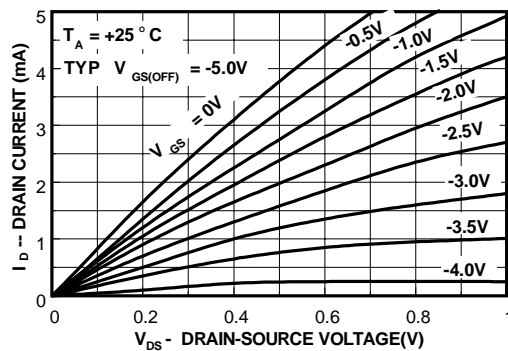
Channel Resistance vs Temperature



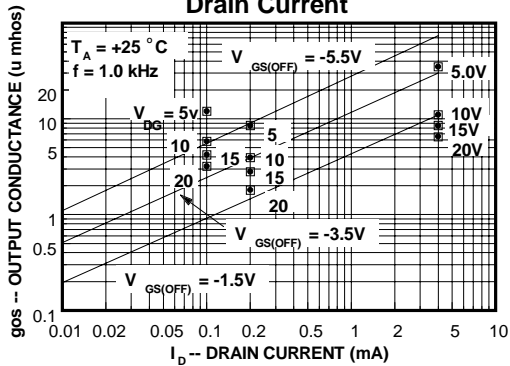
Transconductance Characteristics



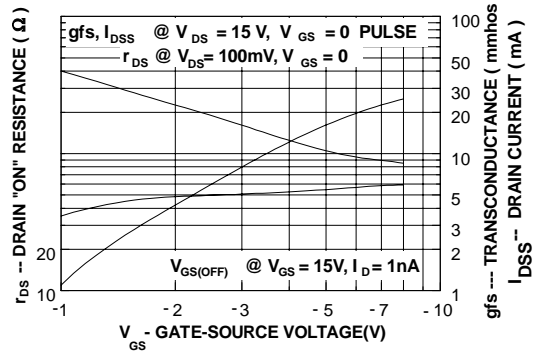
Common Drain-Source Characteristics



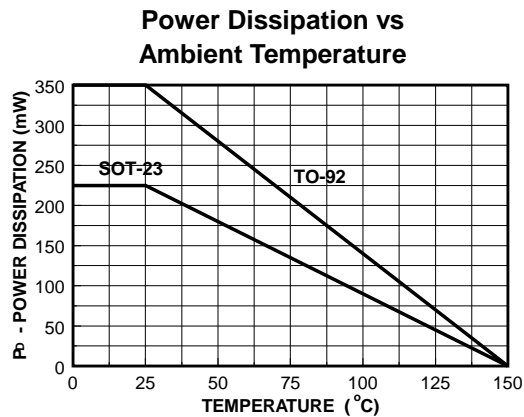
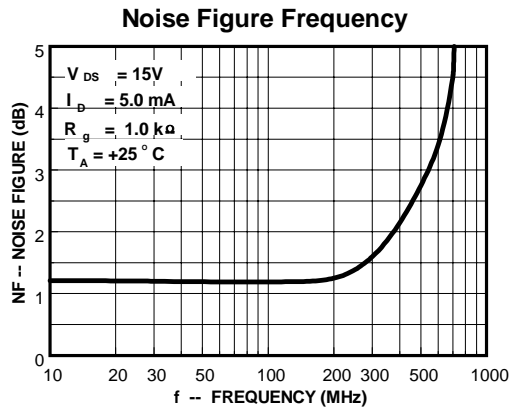
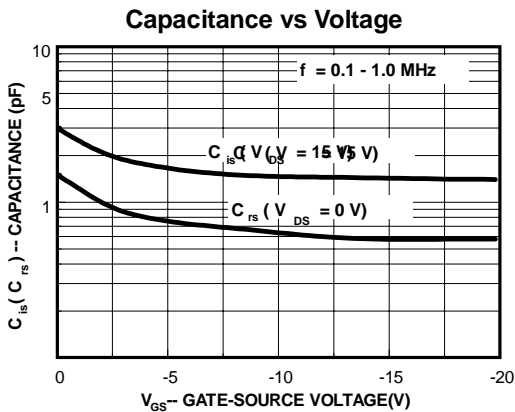
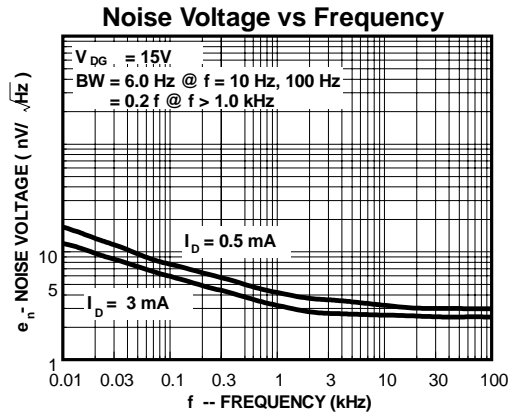
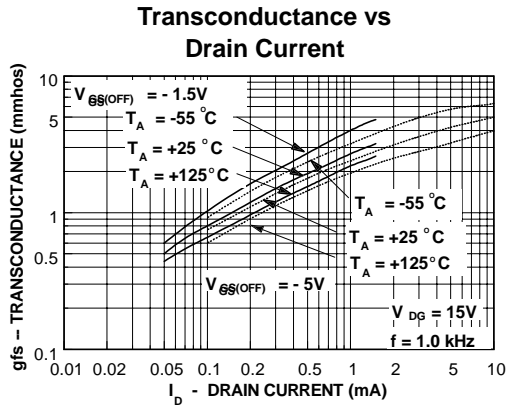
Output Conductance vs Drain Current



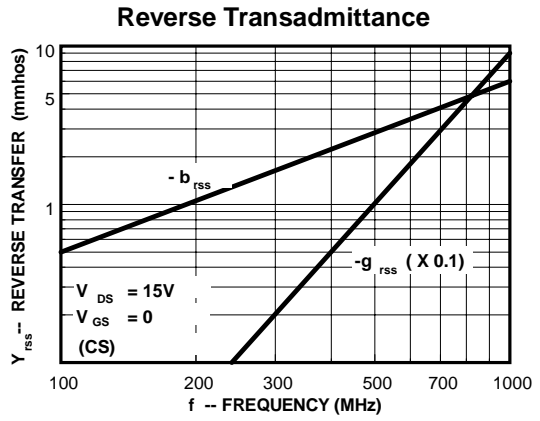
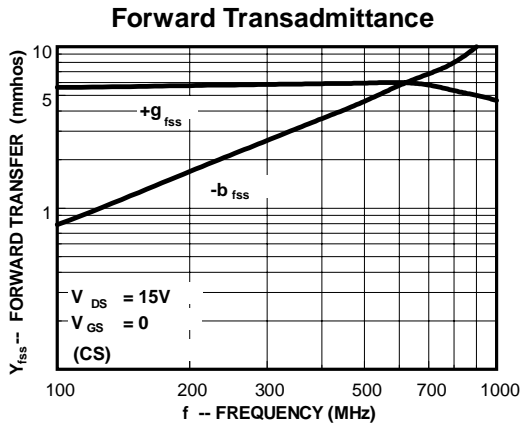
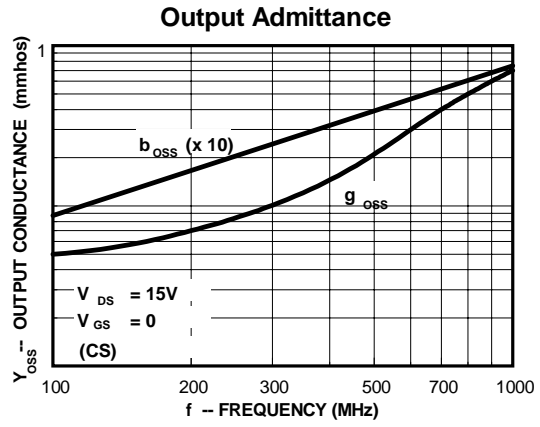
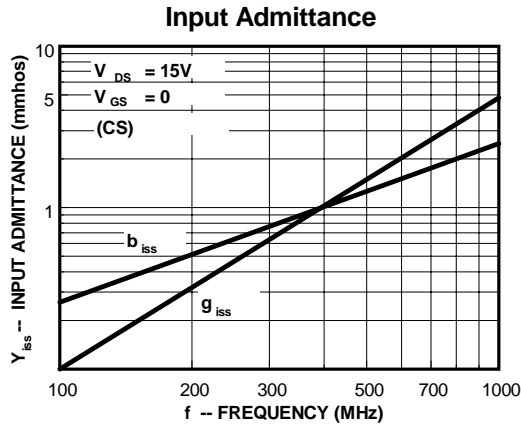
Transconductance Parameter Interactions



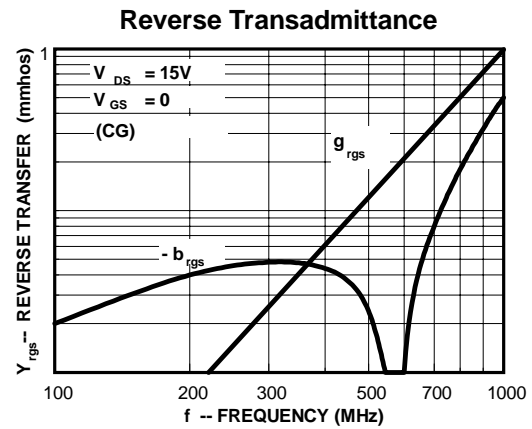
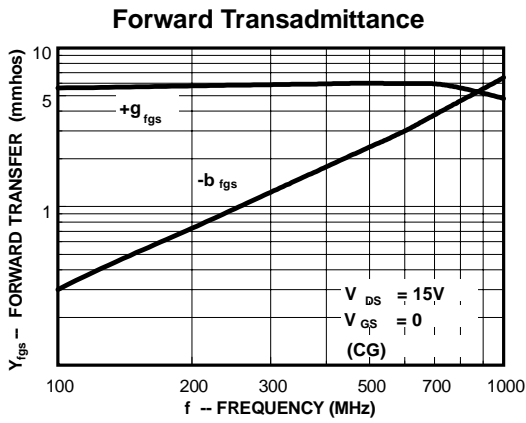
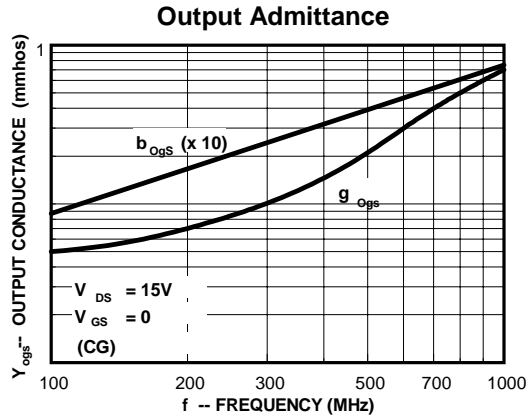
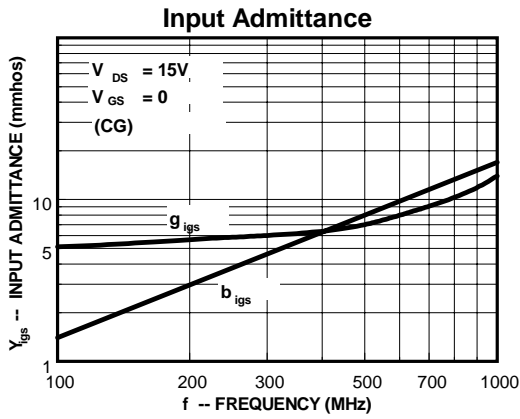
Typical Characteristics (continued)



Common Source Characteristics



Common Gate Characteristics



2N5484 / 2N5485 / 2N5486 / MMBF5484 / MMBF5485 / MMBF5486

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