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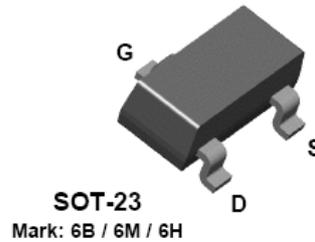
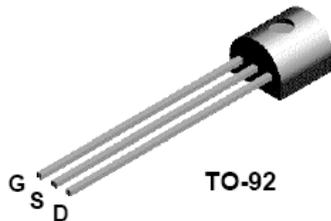
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# 2N5484/5485/5486 MMBF5484/5485/5486



NOTE: Source & Drain are interchangeable

## 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
$V_{DG}$	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
		2N5484-5486	*MMBF5484-5486	
$P_D$	Total Device Dissipation	350	225	mW
	Derate above 25°C	2.8	1.8	mW/°C
$R_{\theta JC}$	Thermal Resistance, Junction to Case	125		°C/W
$R_{\theta JA}$	Thermal Resistance, Junction to Ambient	357	556	°C/W

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

## N-Channel RF Amplifier

(continued)

### Electrical Characteristics

TA = 25°C unless otherwise noted

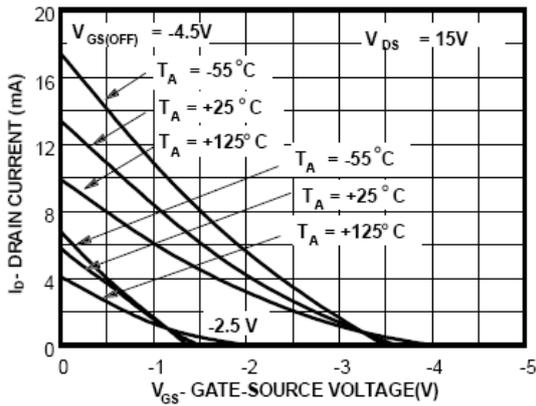
Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
<b>OFF CHARACTERISTICS</b>						
$V_{(BR)GSS}$	Gate-Source Breakdown Voltage	$I_G = -1.0 \mu A, V_{DS} = 0$	-25			V
$I_{GSS}$	Gate Reverse Current	$V_{GS} = -20 V, V_{DS} = 0$ $V_{GS} = -20 V, V_{DS} = 0, T_A = 100^\circ C$			-1.0 -0.2	nA $\mu A$
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15 V, I_D = 10 nA$	5484 5485 5486	-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*	$V_{DS} = 15 V, V_{GS} = 0$	5484 5485 5486	1.0 4.0 8.0	5.0 10 20	mA mA mA
<b>SMALL SIGNAL CHARACTERISTICS</b>						
$g_{fs}$	Forward Transfer Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$	5484 5485 5486	3000 3500 4000	6000 7000 8000	$\mu mhos$ $\mu mhos$ $\mu mhos$
$Re(y_{is})$	Input Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 400 MHz$	5484 5485 / 5486		100 1000	$\mu mhos$ $\mu mhos$
$g_{os}$	Output Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 1.0 kHz$	5484 5485 5486		50 60 75	$\mu mhos$ $\mu mhos$ $\mu mhos$
$Re(y_{os})$	Output Conductance	$V_{DS} = 15 V, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 400 MHz$	5484 5485 / 5486		75 100	$\mu mhos$ $\mu mhos$
$Re(y_{fs})$	Forward Transconductance	$V_{DS} = 15 V, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15 V, V_{GS} = 0, f = 400 MHz$	5484 5485 5486	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	$V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 100 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 400 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 100 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 400 MHz$	5484 5484 5485 / 5486 5485 / 5486		3.0 4.0 2.0 4.0	dB dB dB dB

# N-Channel RF Amplifier

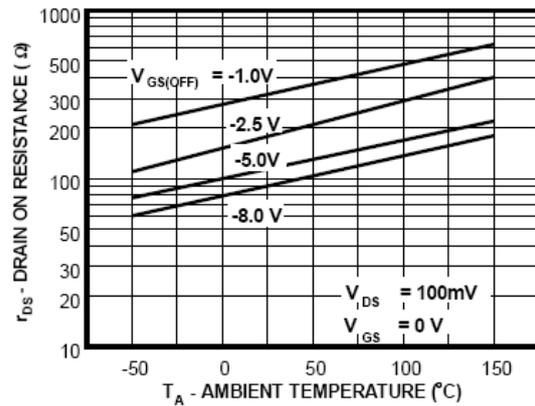
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## Typical Characteristics

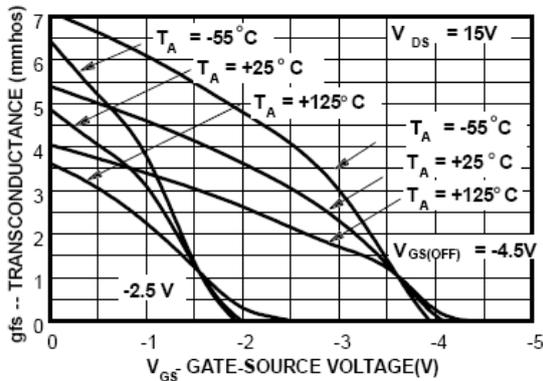
### Transfer Characteristics



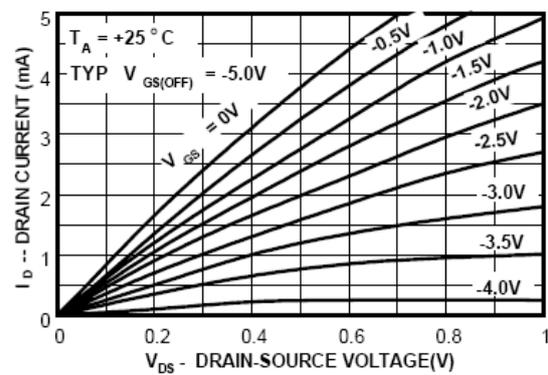
### Channel Resistance vs Temperature



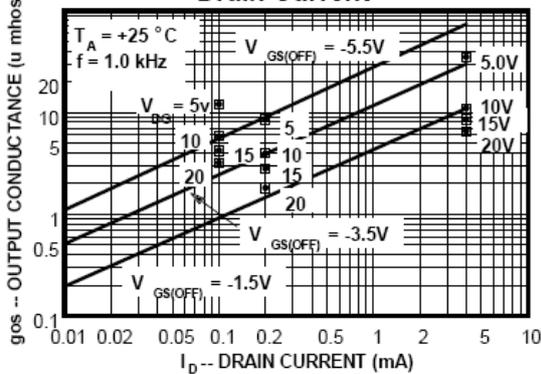
### Transconductance Characteristics



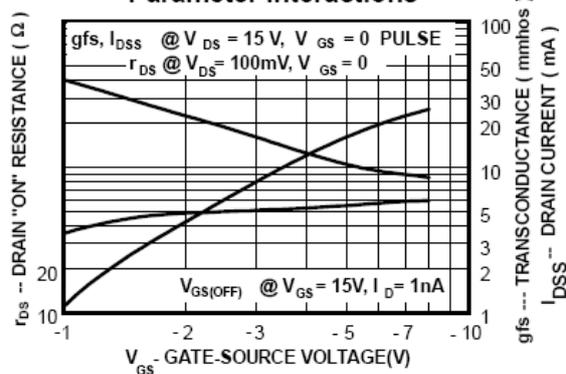
### Common Drain-Source Characteristics



### Output Conductance vs Drain Current

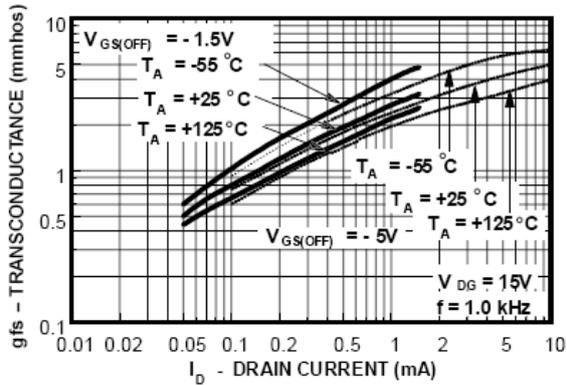


### Transconductance Parameter Interactions

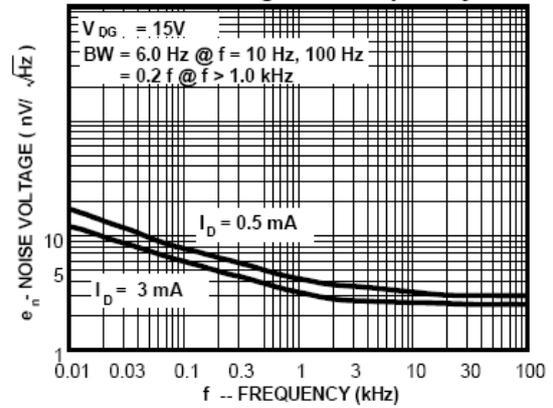


## Typical Characteristics (continued)

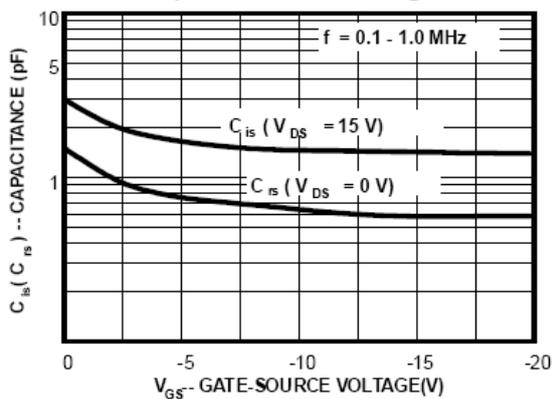
### Transconductance vs Drain Current



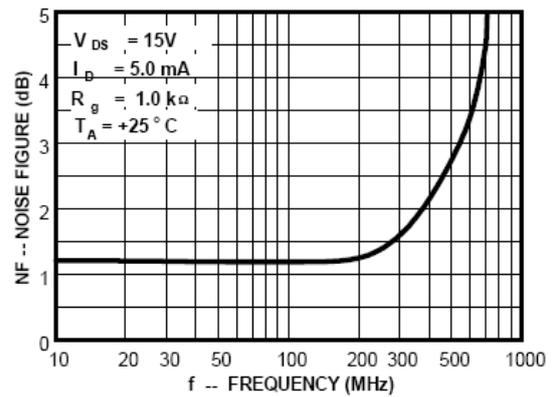
### Noise Voltage vs Frequency



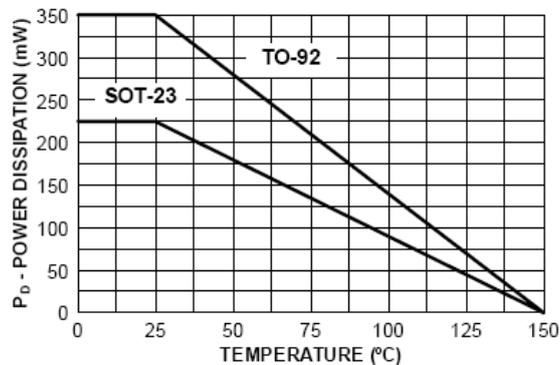
### Capacitance vs Voltage



### Noise Figure Frequency



### Power Dissipation vs. Ambient Temperature

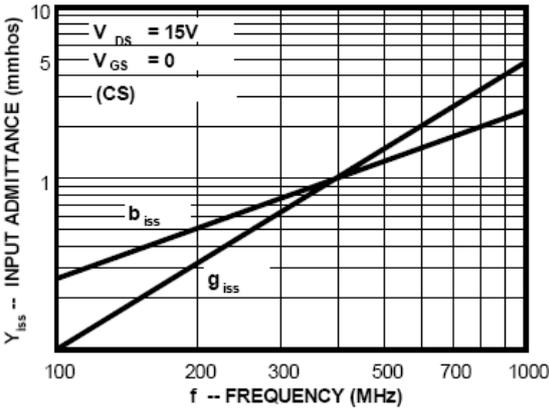


# N-Channel RF Amplifier

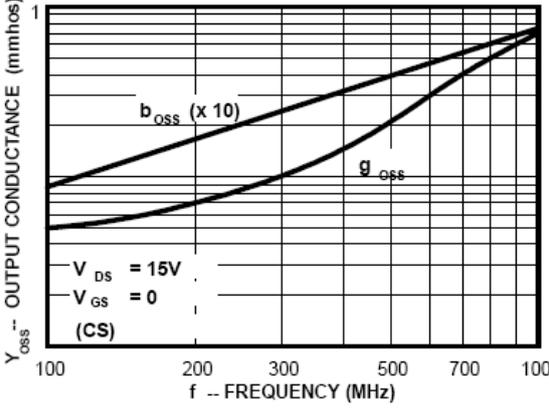
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## Common Source Characteristics

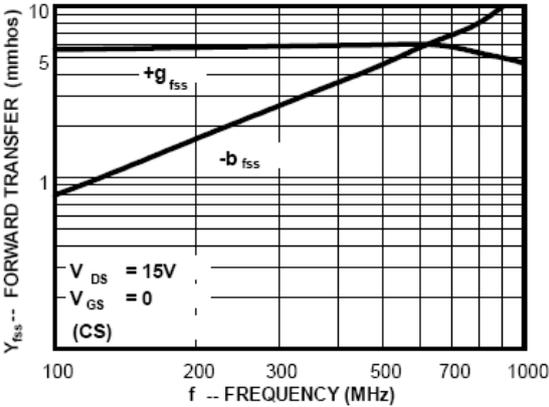
Input Admittance



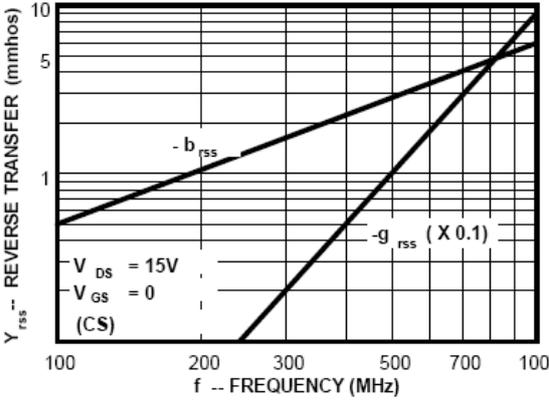
Output Admittance



Forward Transadmittance



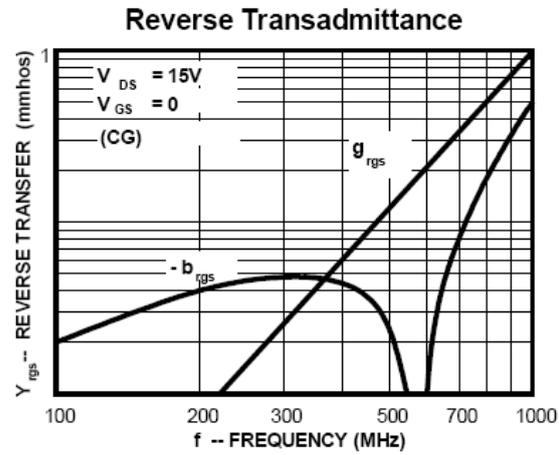
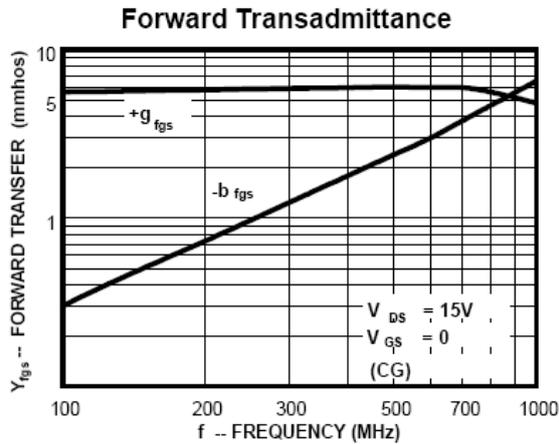
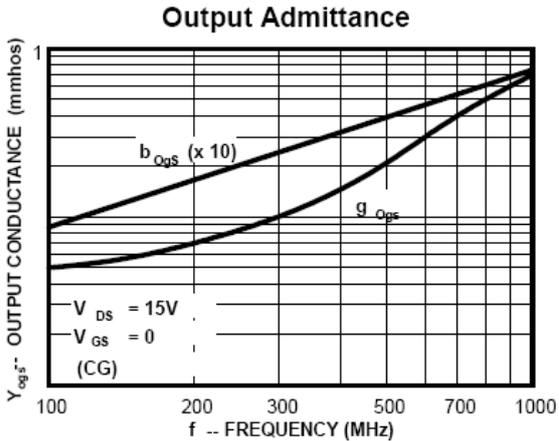
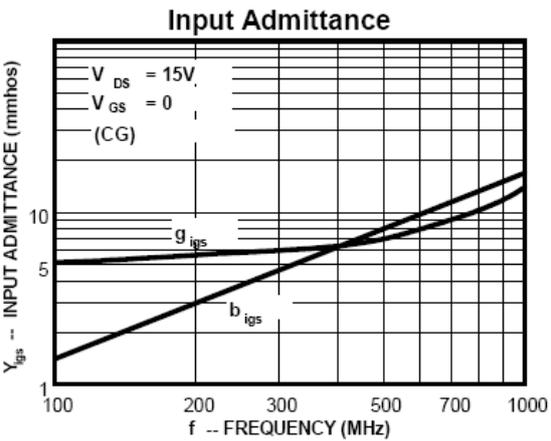
Reverse Transadmittance



# N-Channel RF Amplifier

(continued)

## Common Gate Characteristics





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