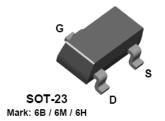


February 2009

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

 $^{^{\}star}$ 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.

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
Rejc	Thermal Resistance, Junction to Case	125		°C/W
R _{eJA}	Thermal Resistance, Junction to Ambient	357	556	°C/W

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

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²⁾ These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.

N-Channel RF Amplifier (continued)

Symbol	Parameter	Test Conditions	Min	Тур	Max	Units
OEE CHAI	RACTERISTICS					
	Gate-Source Breakdown Voltage	I = 40 :: 4 V = 0	- 25	1		V
V _{(BR)GSS}		$I_G = -1.0 \mu\text{A}, V_{DS} = 0$ $V_{GS} = -20 \text{V}, V_{DS} = 0$	- 23		1.0	
I _{GSS}	Gate Reverse Current	V _{GS} = - 20 V, V _{DS} = 0 V _{GS} = - 20 V, V _{DS} = 0, T _A = 100°C			- 1.0 - 0.2	nA μA
V _{GS(off)}	Gate-Source Cutoff Voltage	V _{DS} = 15 V, I _D = 10 nA 5484	- 0.3		- 3.0	V
(,		5485	- 0.5		- 4.0	V
		5486	- 2.0		- 6.0	V
	ACTERISTICS					
IDSS	Zero-Gate Voltage Drain Current*	V _{DS} = 15 V, V _{GS} = 0 5484	1.0		5.0	mA
טטי	Zero-Gate Voltage Brain Current	5485	4.0		10	mA
		5486	8.0		20	mA
SMALL SI	GNAL CHARACTERISTICS					
gfs .	Forward Transfer Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 kHz	2000		6000	
		5484 5485	3000 3500		6000 7000	μmho μmho
		5486	4000		8000	μmho
Re(yis)	Input Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 100 MHz				
		5484			100	μmho
		V _{DS} = 15 V, V _{GS} = 0, f = 400 MHz 5485 / 5486			1000	μmho
gos	Output Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 kHz				μιιιιο
500		5484			50	μmho
		5485			60 75	μmho
Re ₍ y _{os)}	Output Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 100 MHz			13	μmho
rvo(yos)	output conductance	5484			75	μmho
		V _{DS} = 15 V, V _{GS} = 0, f = 400 MHz			400	· .
Dave	Forward Transconductance	5485 / 5486 V _{DS} = 15 V, V _{GS} = 0, f = 100 MHz			100	μmho
Re(yfs)	Forward Transconductance	5484	2500			μmho
		V _{DS} = 15 V, V _{GS} = 0, f = 400 MHz				
		5485	3000 3500			μmho
Ciss	Input Capacitance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 MHz	3300		5.0	μmho pF
Crss	Reverse Transfer Capacitance	$V_{DS} = 15 \text{ V}, V_{GS} = 0, f = 1.0 \text{ MHz}$			1.0	pF
Coss	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 Ω ,				
		f = 100 MHz 5484			3.0	dB
		$V_{DS} = 15 \text{ V}, R_G = 1.0 \text{ k}\Omega,$		4.0		dB
		f = 400 MHz 5484 V_{DS} = 15 V , R_{G} = 1.0 kΩ,		4.0		ub
		f = 100 MHz 5485 / 5486			2.0	dB
		V_{DS} = 15 V, R_{G} = 1.0 k Ω ,			4.0	40
		f = 400 MHz 5485 / 5486			4.0	dB

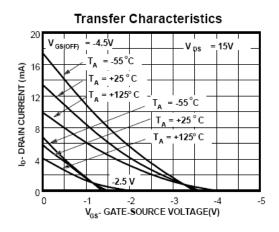
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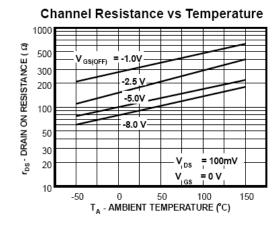
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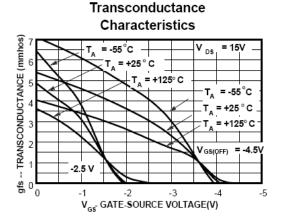
N-Channel RF Amplifier

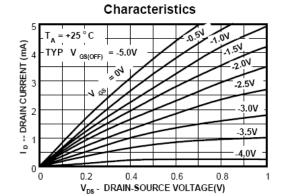
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Typical Characteristics

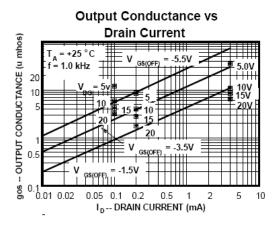


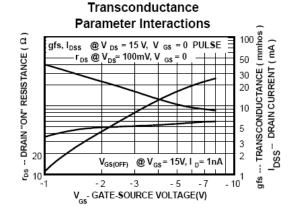






Common Drain-Source





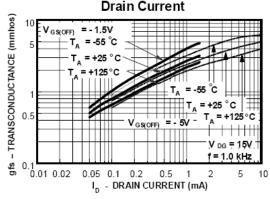
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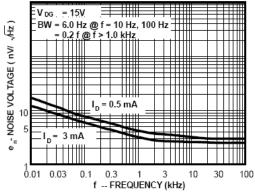
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Typical Characteristics (continued)

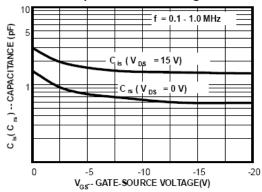
Transconductance vs Drain Current



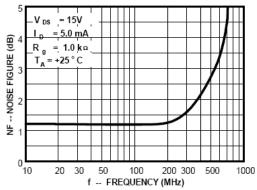
Noise Voltage vs Frequency



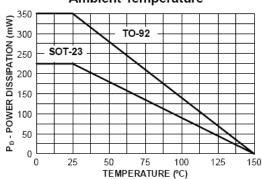
Capacitance vs Voltage



Noise Figure Frequency



Power Dissipation vs. Ambient Temperature

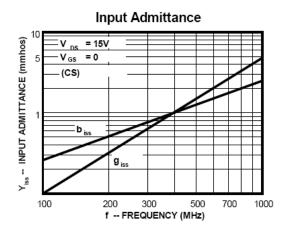


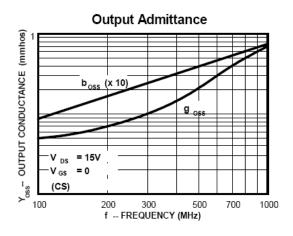
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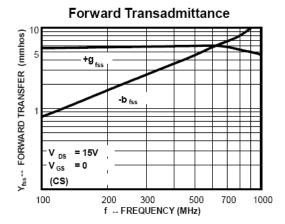
N-Channel RF Amplifier

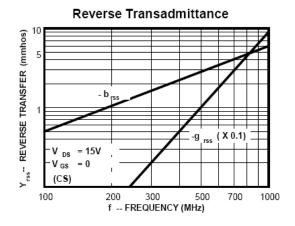
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Common Source Characteristics





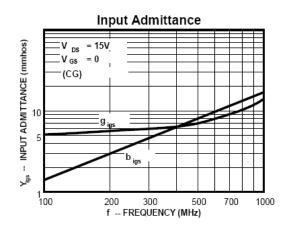


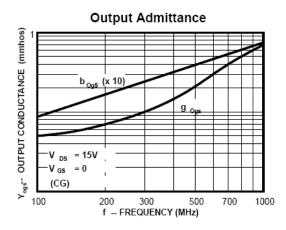


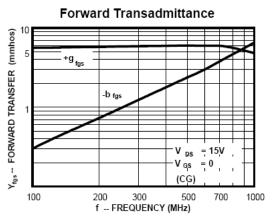
N-Channel RF Amplifier

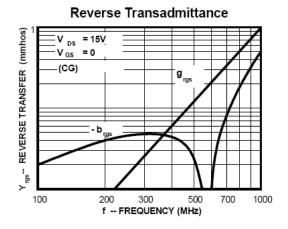
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Common Gate Characteristics













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