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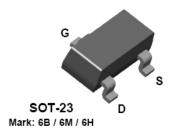
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February 2009

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	

^{*}These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

<u>NOTES:</u>
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."

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

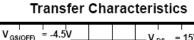
N-Channel RF Amplifier (continued)

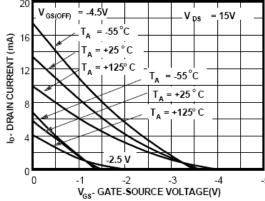
Symbol Parameter Test Conditions Min Typ Max Un						Units
Symbol	Parameter	rest Conditions	Min	Тур	Max	Units
OFF CHAI	RACTERISTICS					
V _{(BR)GSS}	Gate-Source Breakdown Voltage	I _G = - 1.0 μA, V _{DS} = 0	- 25			V
I _{GSS}	Gate Reverse Current	V _{GS} = - 20 V, V _{DS} = 0			- 1.0	nA
V _{GS(off)}	Gate-Source Cutoff Voltage	V _{GS} = - 20 V, V _{DS} = 0, T _A = 100°C V _{DS} = 15 V, I _D = 10 nA 5484	- 0.3		- 0.2 - 3.0	μA
. 05(011)	cate course cates. Follage	5485 5486	- 0.5 - 2.0		- 4.0 - 6.0	V
ONICHAR	ACTERISTICS					•
IDSS	Zero-Gate Voltage Drain Current*	V _{DS} = 15 V, V _{GS} = 0 5484	1.0		5.0	mA
IDSS	Zero-Gate Voltage Drain Current	5485	4.0		10	mA
		5486	8.0		20	mA
SMALL SI	GNAL CHARACTERISTICS Forward Transfer Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 kHz	2000		6000	
		5484 5485 5486	3000 3500 4000		6000 7000 8000	μmho
Re(yis)	Input Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 100 MHz	4000		0000	μmho
().0/		5484			100	μmho
		V _{DS} = 15 V, V _{GS} = 0, f = 400 MHz 5485 / 5486			1000	μmho
gos	Output Conductance	$V_{DS} = 15 \text{ V}, V_{GS} = 0, f = 1.0 \text{ kHz}$				
		5484 5485			50 60	μmho μmho
		5486			75	μmho
Re _(yos)	Output Conductance	V _{DS} = 15 V, V _{GS} = 0, f = 100 MHz 5484			75	mba
		V _{DS} = 15 V, V _{GS} = 0, f = 400 MHz			75	μmho
		5485 / 5486			100	μmho
Re(yfs)	Forward Transconductance	V _{DS} = 15 V, V _{GS} = 0, f = 100 MHz 5484	2500			μmho
		V _{DS} = 15 V, V _{GS} = 0, f = 400 MHz	2000			ļ ·
		5485 5486	3000 3500			μmho μmho
Ciss	Input Capacitance	V _{DS} = 15 V, V _{GS} = 0, f = 1.0 MHz			5.0	pF
Crss	Reverse Transfer Capacitance	$V_{DS} = 15 \text{ V}, V_{GS} = 0, f = 1.0 \text{ MHz}$			1.0	pF
Coss	Output Capacitance	$V_{DS} = 15 \text{ V}, V_{GS} = 0, f = 1.0 \text{ MHz}$			2.0	pF
NF	Noise Figure	V_{DS} = 15 V, R_{G} = 1.0 kΩ, f = 100 MHz 5484			3.0	dB
		V_{DS} = 15 V, R _G = 1.0 kΩ, f = 400 MHz 5484		4.0		dB
		V_{DS} = 15 V , R_{G} = 1.0 k Ω , f = 100 MHz 5485 / 5486			2.0	dB
		V_{DS} = 15 V, R _G = 1.0 kΩ, f = 400 MHz 5485 / 5486			4.0	dB

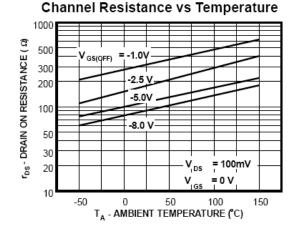
N-Channel RF Amplifier

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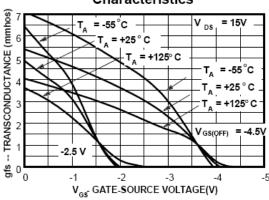
Typical Characteristics



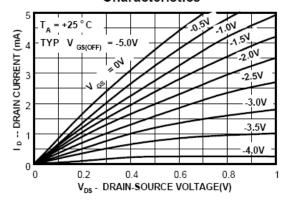




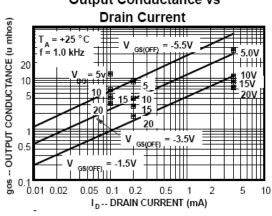
Transconductance Characteristics



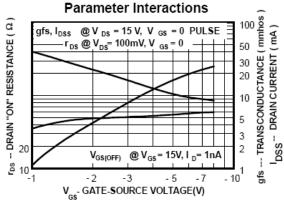
Common Drain-Source Characteristics



Output Conductance vs



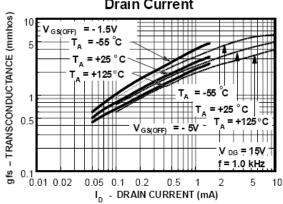
Transconductance



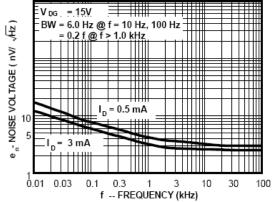
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Typical Characteristics (continued)

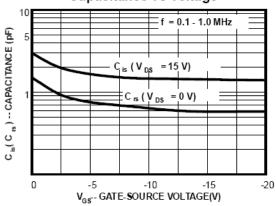
Transconductance vs Drain Current



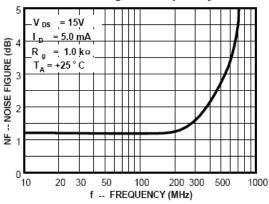
Noise Voltage vs Frequency



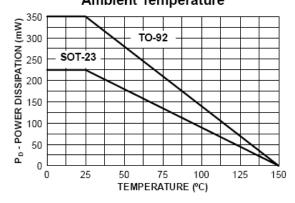
Capacitance vs Voltage



Noise Figure Frequency



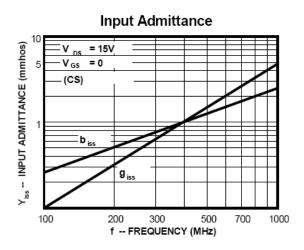
Power Dissipation vs. Ambient Temperature

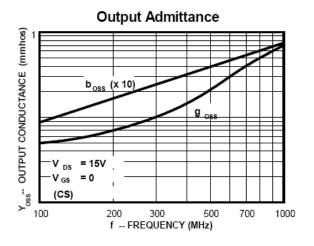


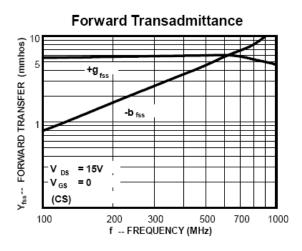
N-Channel RF Amplifier

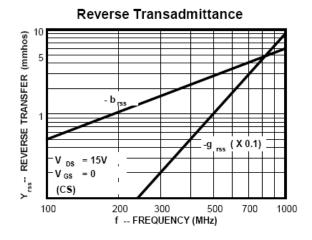
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Common Source Characteristics





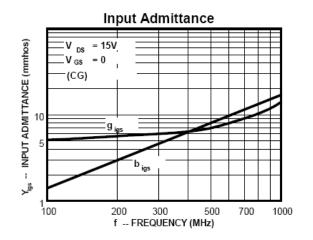


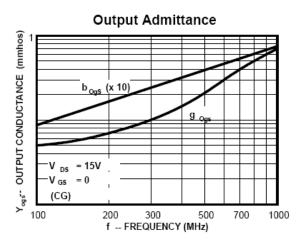


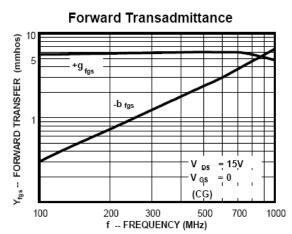
N-Channel RF Amplifier

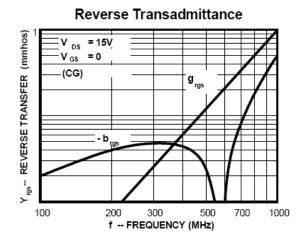
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Common Gate Characteristics









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