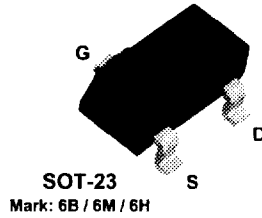
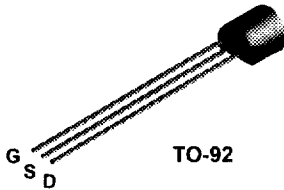


2N5484
2N5485
2N5486

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 _{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	*MMBF5484	
P _D	Total Device Dissipation	350	225	mW
	Derate above 25°C	2.8	1.8	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."

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

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N-Channel RF Amplifier

(continued)

Electrical Characteristics

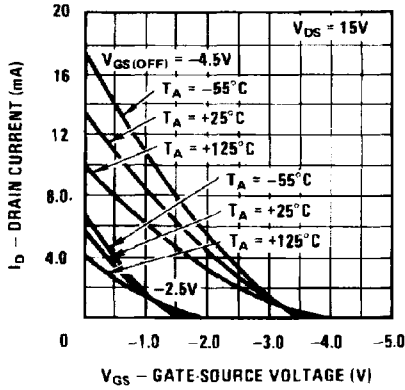
TA = 25°C unless otherwise noted

Symbol	Parameter	Test Conditions	Min	Typ	Max	Units
OFF CHARACTERISTICS						
$V_{IBRIGSS}$	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 μA
$V_{GS(off)}$	Gate-Source Cutoff Voltage	$V_{DS} = 15 V, I_D = 10 nA$	2N5484 2N5485 2N5486	-0.3 -0.5 -2.0	-3.0 -4.0 -6.0	V V V
ON CHARACTERISTICS						
I_{DSS}	Zero-Gate Voltage Drain Current*	$V_{DS} = 15 V, V_{GS} = 0$	2N5484 2N5485 2N5486	1.0 4.0 8.0	5.0 10 20	mA mA mA
SMALL SIGNAL CHARACTERISTICS						
g_{fs}	Forward Transfer Conductance	$V_{DS} = 15, V_{GS} = 0, f = 1.0 kHz$	2N5484 2N5485 2N5486	3000 3500 4000	6000 7000 8000	$\mu mhos$ $\mu mhos$ $\mu mhos$
$Re(y_{fs})$	Input Conductance	$V_{DS} = 15, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15, V_{GS} = 0, f = 400 MHz$	2N5484 2N5485 / 2N5486		100 1000	$\mu mhos$ $\mu mhos$
g_{os}	Output Conductance	$V_{DS} = 15, V_{GS} = 0, f = 1.0 kHz$	2N5484 2N5485 2N5486		50 60 75	$\mu mhos$ $\mu mhos$ $\mu mhos$
$Re(y_{os})$	Output Conductance	$V_{DS} = 15, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15, V_{GS} = 0, f = 400 MHz$	2N5484 2N5485 / 2N5486		75 100	$\mu mhos$ $\mu mhos$
$Re(y_{fs})$	Forward Transconductance	$V_{DS} = 15, V_{GS} = 0, f = 100 MHz$ $V_{DS} = 15, V_{GS} = 0, f = 400 MHz$	2N5484 2N5485 2N5486	2500 3000 3500		$\mu mhos$ $\mu mhos$ $\mu mhos$
C_{iss}	Input Capacitance	$V_{DS} = 15, V_{GS} = 0, f = 1.0 MHz$			5.0	pF
C_{rss}	Reverse Transfer Capacitance	$V_{DS} = 15, V_{GS} = 0, f = 1.0 MHz$			1.0	pF
C_{oss}	Output Capacitance	$V_{DS} = 15, V_{GS} = 0, f = 1.0 MHz$			2.0	pF
NF	Noise Figure	$V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 100 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 400 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 100 MHz$ $V_{DS} = 15 V, R_G = 1.0 k\Omega, f = 400 MHz$	2N5484 2N5484 2N5485 / 2N5486 2N5485 / 2N5486		3.0 4.0 2.0 4.0	dB dB dB dB

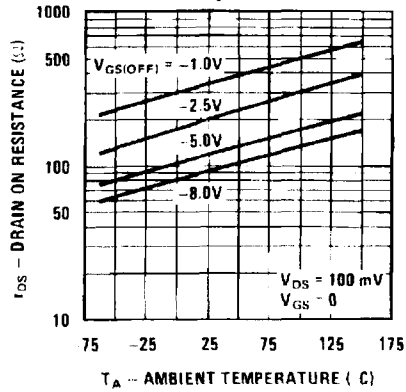
*Pulse Test: Pulse Width \leq 300 ms, Duty Cycle \leq 2%

Typical Characteristics

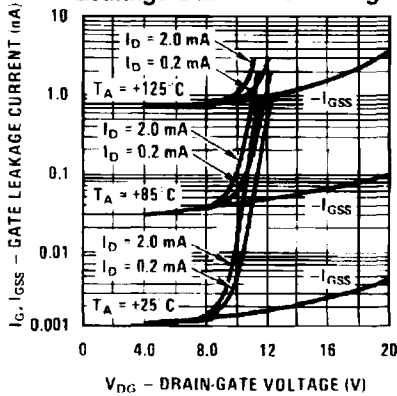
Transfer Characteristics



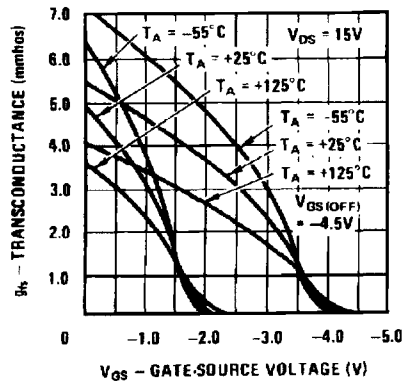
Channel Resistance vs. Temperature



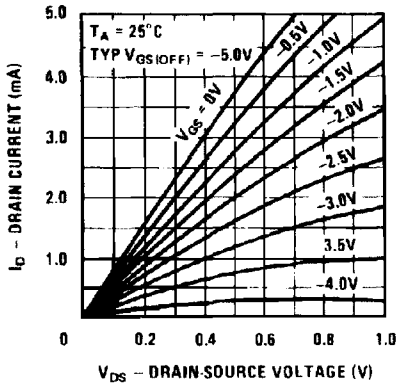
Leakage Current vs. Voltage



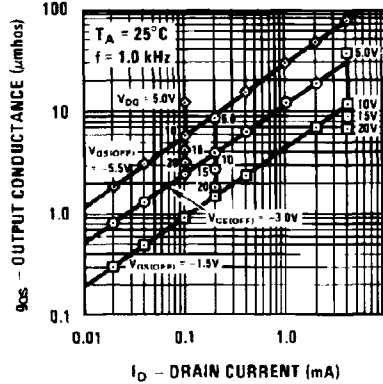
Transconductance



Common-Drain Source



Output Conductance vs. Drain Current

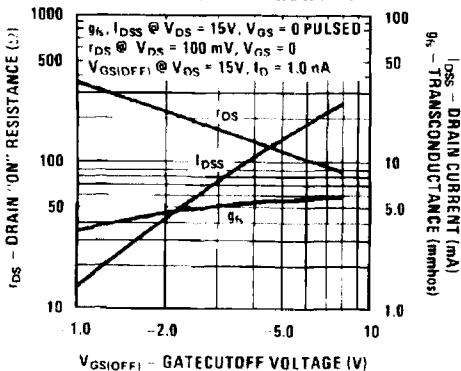


N-Channel RF Amplifier

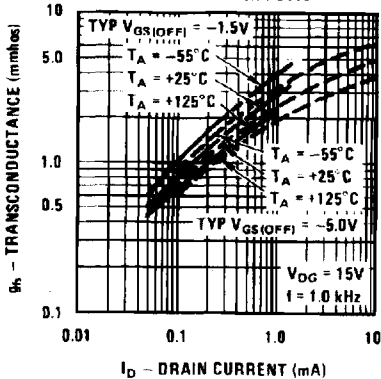
(continued)

Typical Characteristics (continued)

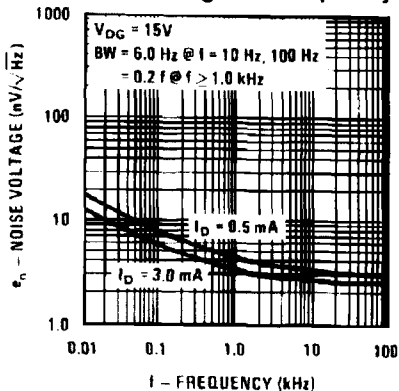
Parameter Interactions



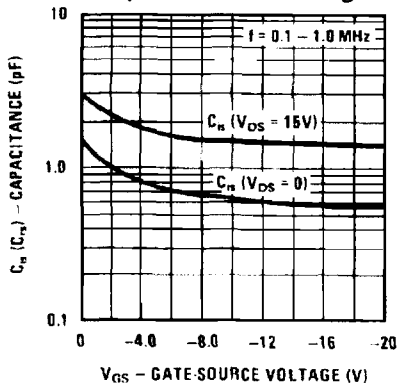
Transconductance vs. Drain Current



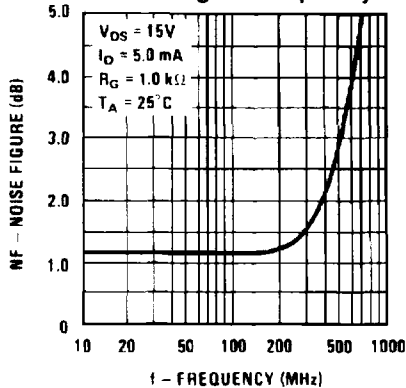
Noise Voltage vs. Frequency



Capacitance vs. Voltage

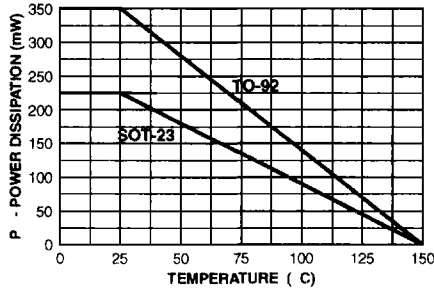


Noise Figure Frequency



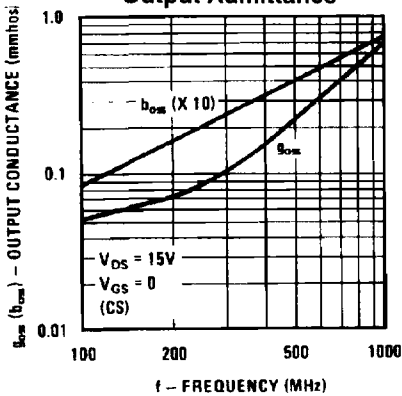
Typical Characteristics (continued)

POWER DISSIPATION vs AMBIENT TEMPERATURE

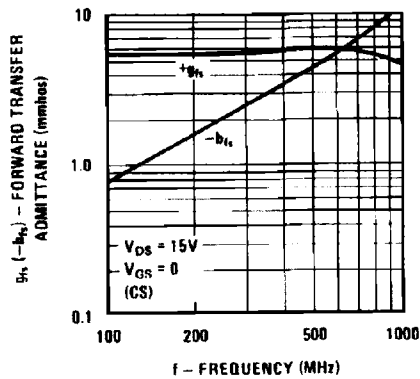


Common Source Characteristics

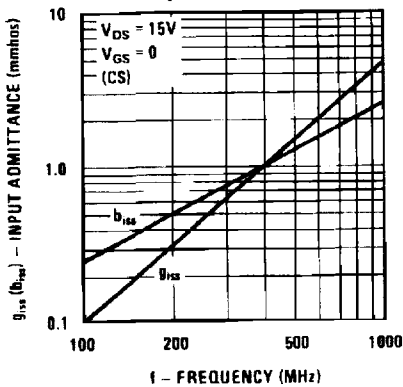
Output Admittance



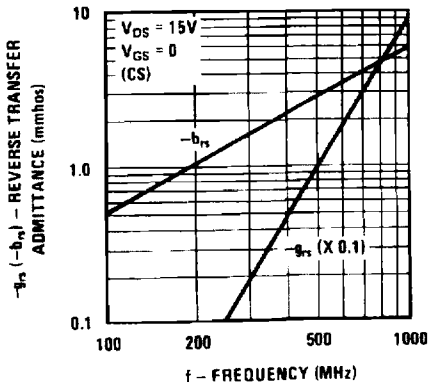
Forward Transadmittance



Input Admittance



Reverse Transadmittance



N-Channel RF Amplifier

(continued)

Common Gate Characteristics

