



### WCDMA Power Amplifier

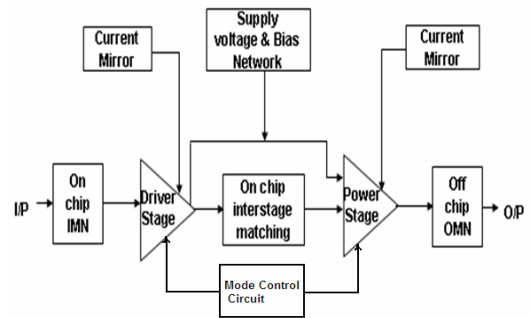
### RJP01

#### Description

The **RJP01** is 1.920 to 1.980 GHz high efficiency WCDMA Power Amplifier. The Amplifier is designed using 0.18 um SiGe BiCMOS technology. Power amplifier shows PAE of 41% at 28 dBm with off-chip output matching.

It has been designed specially for use in WCDMA application. It operates from 3.2 V to 4.2 V power supply.

#### Functional Diagram



#### Applications

- WCDMA Handsets

#### Key Features

- Linear Gain
- High PAE
- High Pout

#### Electrical Specifications

Conditions:  $V_{cc} = 3.5\text{ V}$ ,  $V_{ref} = 2.85\text{ V}$  &  $T_A = 25\text{ }^\circ\text{C}$

Parameter	Symbol		Unit
Operating Freq	Fo	1920 - 1980	MHz
Gain	Ghi	28.5	dB
	Gmi	18.5	dB
	Glo	18.5	dB
Power Added Efficiency @ 28dBm P1dB	PAE	41	%
PAE at Linear Pout of 26dBm		27.2	%
PAE at Medium Power Mode		15.2	%
Reference Current	Iref	6.4	mA
Adjacent Channel Rejection High Power Mode @26dBm Linear Pout	ACLR1	-35.8	dBc
	ACLR2	-59	dBc
Adjacent Channel Rejection Low Power Mode @16dBm Pout	ACLR1	38.4	dBc
	ACLR2	64	dBc
Harmonics(2nd)	2Ho	-70	dBc
(3rd )	3Ho	-34	dBc
Input VSWR	VSWR	1.5:1	
Ruggedness	R	10:1	

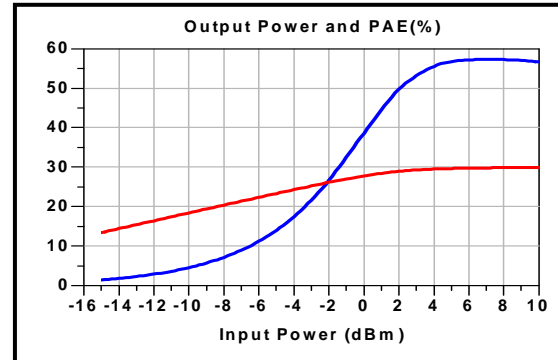
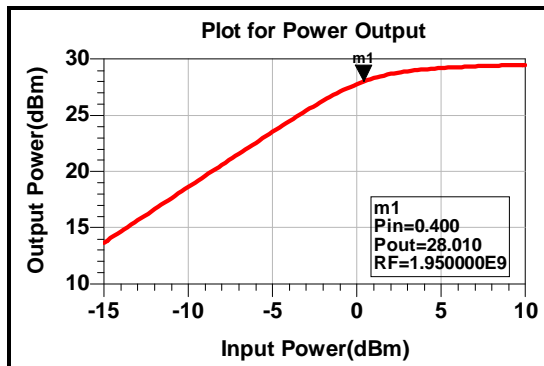
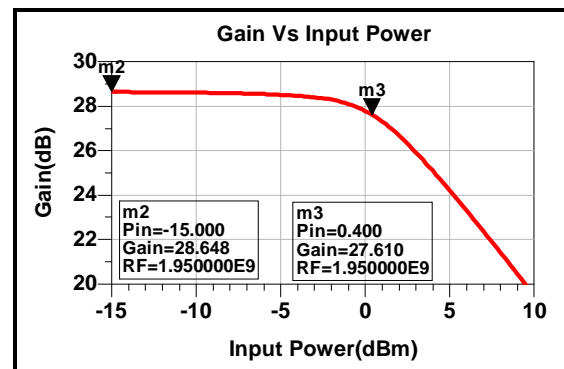
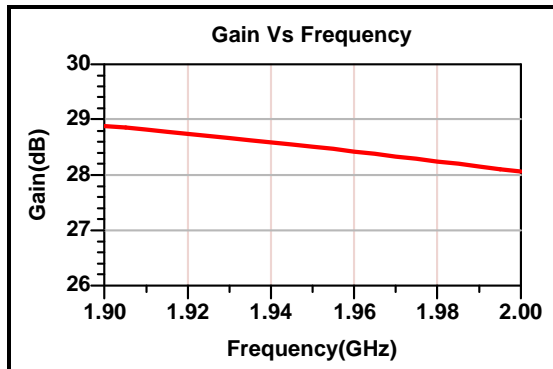


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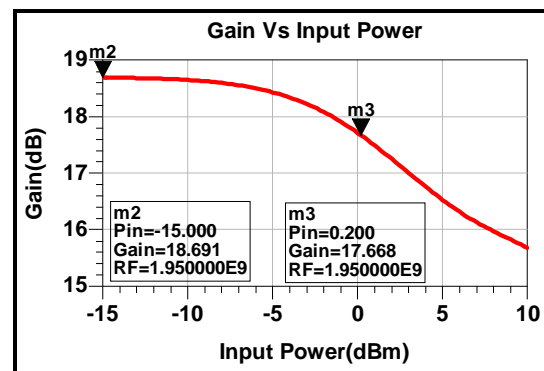
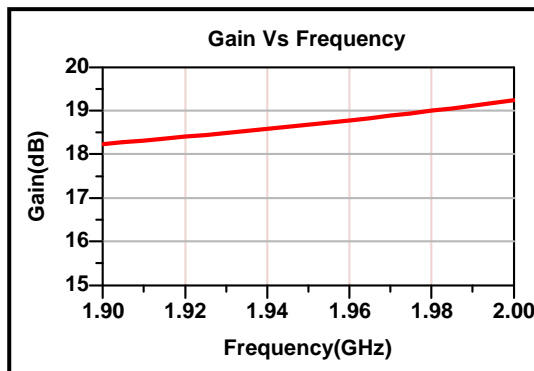
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### Simulated results

#### High Power Mode



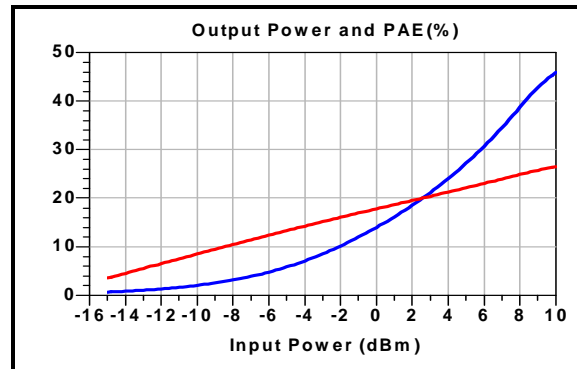
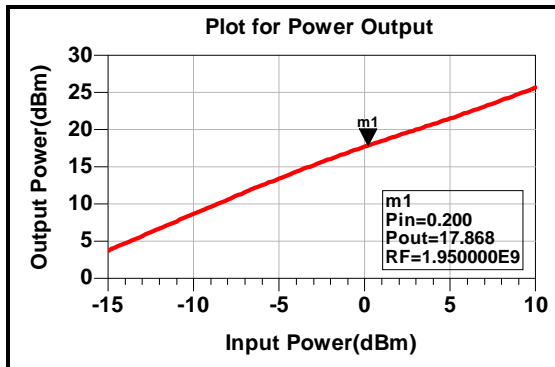
#### Medium Power Mode



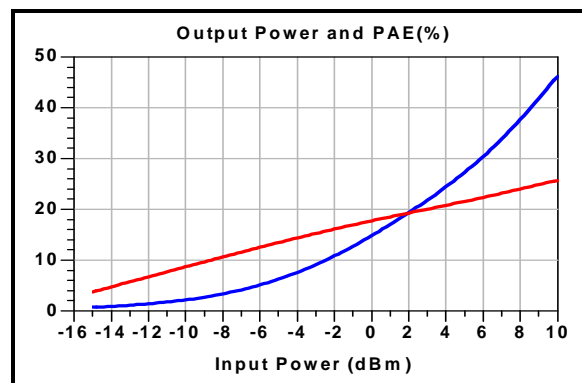
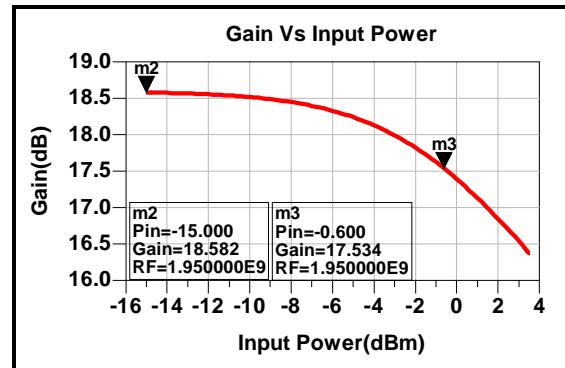
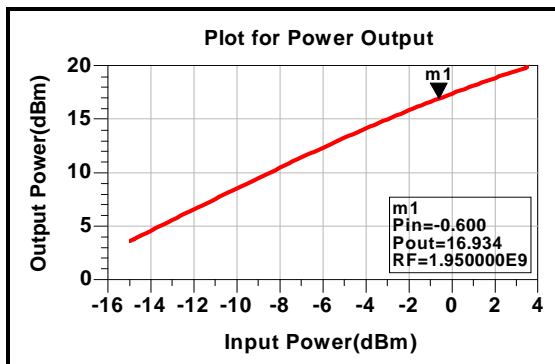


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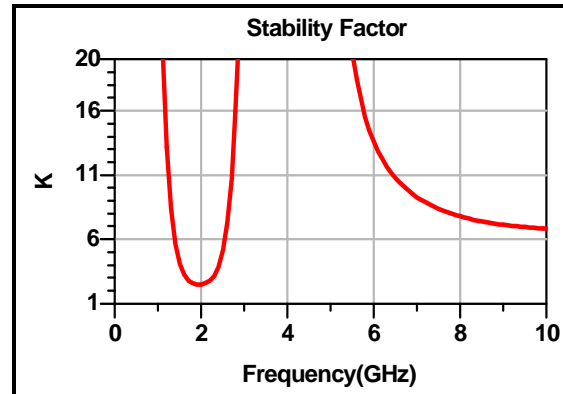
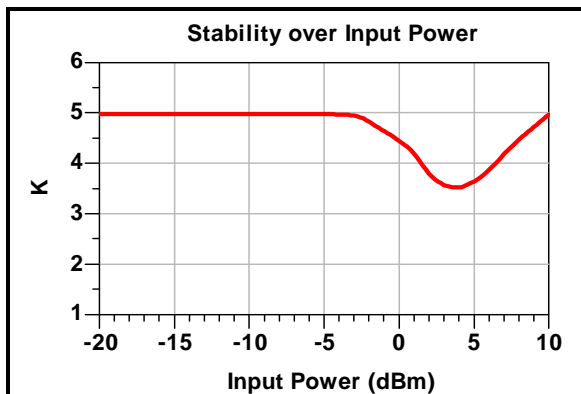
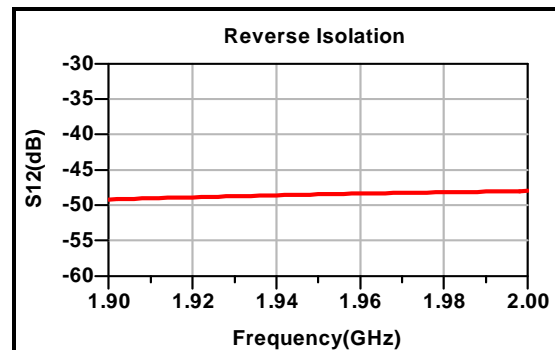
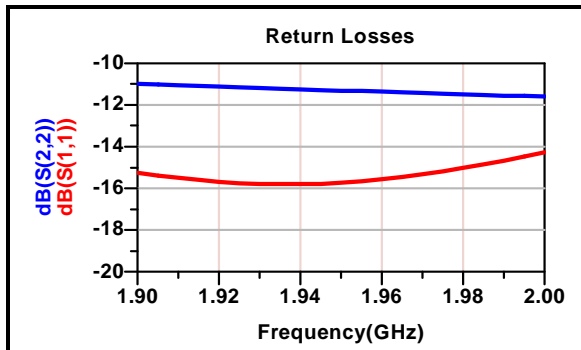
### Low Voltage Medium Power Mode





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## Layout

